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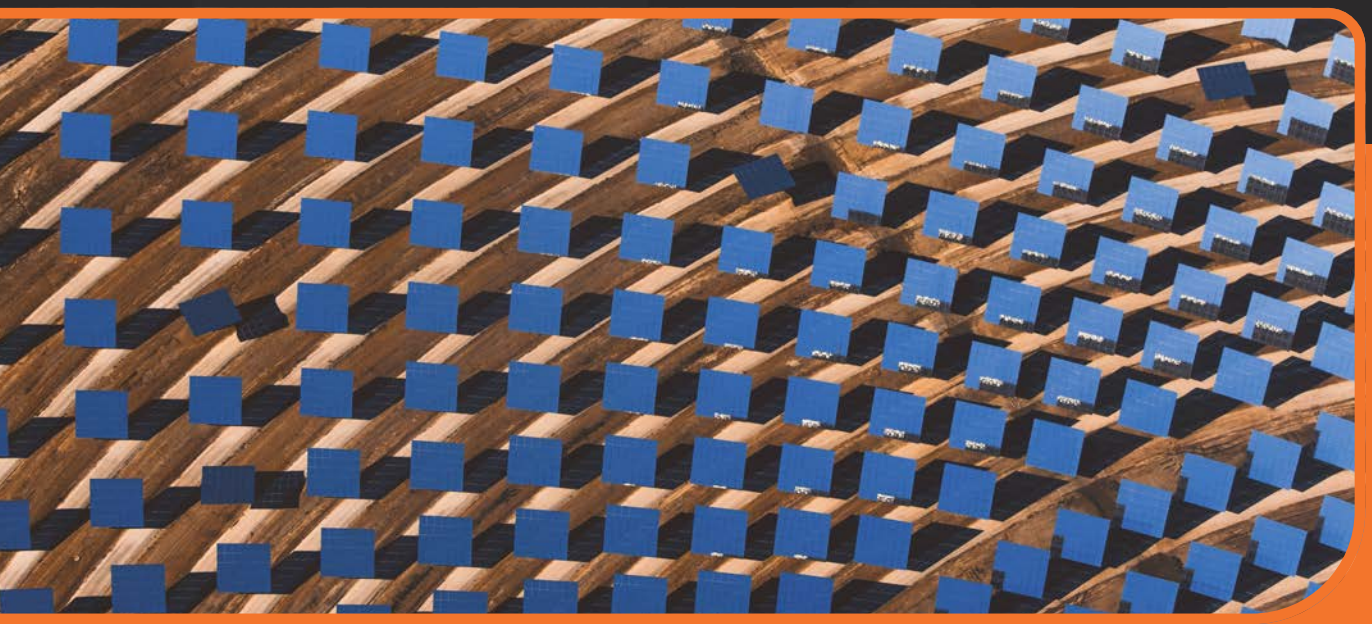


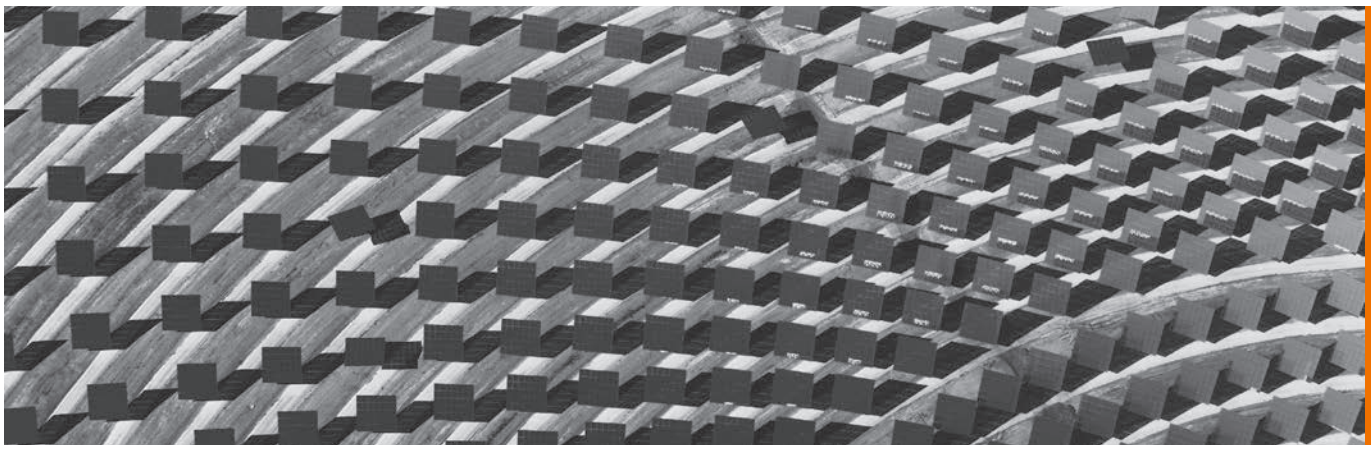
Practical cross-border insights into renewable energy law

Renewable Energy 2022

Second Edition

Contributing Editor:
Mhairi Main Garcia
Dentons & Co.

ICLG.com



ISBN 978-1-83918-142-9
ISSN 2634-4300

Published by
global legal group
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London SE1 3PL
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Printed by
Ashford Colour Press Ltd.

Cover image
www.istockphoto.com

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Expert Analysis Chapter

Q&A Chapters

From the Publisher

Dear Reader,

Welcome to the second edition of *ICLG – Renewable Energy*, published by Global Legal Group.

This publication provides corporate counsel and international practitioners with comprehensive jurisdiction-by-jurisdiction guidance to renewable energy laws and regulations around the world, and is also available at www.iclg.com.

This year, an expert analysis chapter covers the potential for low carbon hydrogen.

The question and answer chapters, which in this edition cover 18 jurisdictions, provide detailed answers to common questions raised by professionals dealing with renewable energy laws and regulations.

As always, this publication has been written by leading renewable energy lawyers and industry specialists, for whose invaluable contributions the editors and publishers are extremely grateful.

Global Legal Group would also like to extend special thanks to contributing editor Mhairi Main Garcia of Dentons & Co. for her leadership, support and expertise in bringing this project to fruition.

James Strode
Publisher
Global Legal Group

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The Potential for Low Carbon Hydrogen

Dentons & Co.

Mhairi Main Garcia

Introduction

There is an increasing recognition of the role which low carbon hydrogen can play as part of states' net zero commitments. The exponential growth in renewables has been supported by ambitious renewable energy targets which have been set by countries across the globe. However, if the goal of net zero is to be realised, the focus needs to shift beyond the power sector and states need to consider how to decarbonise economies, in particular the industrial, heating and transportation sectors. Coupled with renewable power and other decarbonisation technologies, low carbon hydrogen has the ability to play a key role in achieving net zero commitments and bridging the decarbonisation gap for "hard to decarbonise" industries.

But, it is not a panacea; there are a number of challenges around realising the full potential of low carbon hydrogen, including:

- low carbon hydrogen is not currently cost-competitive when compared with other energy sources;
- the technology is still at relatively nascent stages of development;
- there is a lack of dedicated infrastructure, with transportation and storage infrastructure generally underdeveloped;
- there is a lack of a global supply chain, with unpredictable demand and uncertain revenue; and
- notwithstanding increasing commitments by states around the world to develop low carbon hydrogen and accelerate its production and/or its use, many countries lack comprehensive policies and tailored regulations.

This chapter will consider some of these challenges further below, as well as their interplay with the renewable energy sector. This chapter focuses on general principles and does not attempt to examine the technical processes or technical challenges; these are complex in nature and there are a number of detailed studies by technical authorities which provide expert analysis on these matters, including studies by the International Renewable Energy Agency (**IRENA**), the International Energy Agency and the Hydrogen Council, which readers can review to understand more about the technical aspects.

What is Low Carbon Hydrogen?

Hydrogen is the most abundant chemical element on Earth. However, hydrogen currently supplies only a negligible amount of the world's energy, and most of that supply does not come from low carbon hydrogen, but rather from grey hydrogen.

This chapter focuses on low carbon hydrogen. There are a number of different colours used when considering hydrogen, including grey, brown, blue and green. However, the colours used to describe hydrogen are not universally agreed. For purposes of this chapter:

- grey hydrogen derives from methane (natural gas or other fossil fuel feedstock) with catalysts used to break hydrocarbon bonds, releasing excess carbon, resulting in carbon dioxide emissions;
- brown carbon derives from coal gasification, again releasing excess carbon resulting in carbon dioxide emissions;
- blue hydrogen is a cleaner version of grey hydrogen using carbon capture, utilisation and storage (**CCUS**), reducing emissions; and
- green hydrogen derives from water, using electrolysis to separate water into its component elements of hydrogen and oxygen and, when using electricity generated from renewable sources, may result in zero carbon hydrogen.

Currently, almost all hydrogen production is grey or brown hydrogen (99.6%) (*Why green hydrogen is reaching a tipping point*, Wood Mackenzie, 9 June 2021). In spite of this, the pipeline looks very different. With the increased commitments by states around the world towards net zero, electrolysis-based low carbon production now makes up 67% of the overall pipeline for hydrogen (Wood Mackenzie, *ibid.*).

Uses and Relevance to Decarbonisation

Low carbon hydrogen is versatile and has a number of possible uses, generally diversifying energy supply and reducing reliance on fossil fuels. It can, among other things, be used to decarbonise "hard to decarbonise" industrial processes, including the chemical, refining, cement, iron and steel industries, reducing the emissions these sectors generate.

Once produced, low carbon hydrogen can be used for a variety of industrial, agricultural and transportation applications. It can be used as a fuel, either in liquid form or by converting the hydrogen into ammonia, which can then be transported and exported. It can also provide green fuel for the transportation sectors. Hydrogen transport technologies offer short refuelling times and lighter weight (when compared to battery-powered electric vehicles), leading to long-range solutions. While cars and small commercial vehicles are less likely to switch to hydrogen given the development of battery technology, hydrogen (or synthetic low carbon fuels made from hydrogen), has the ability to fuel long-distance haulier fleets and the maritime and aviation sectors.

Low carbon hydrogen can generate power and heat in a fuel cell, and can be used in district heating and cooling. Its potential is particularly important given the sustained and increasing dominance of intermittent, renewable energy generation across the globe. Low carbon hydrogen can offer the renewable energy sector clean solutions for:

- long-term and large-scale storage of renewable energy which cannot be serviced by current battery technology;

- grid balancing and the capacity to address seasonal imbalances between electricity generation and consumption;
- energy system flexibility, with the ability to absorb excess renewable electricity production at times when demand is low and wholesale prices are negative or generation is otherwise curtailed;
- exporting excess power by pipeline or ship where countries generate excess renewable electricity and produce excess low carbon hydrogen, avoiding interconnection risks; and
- providing long-term offtakers, on a corporate power purchase agreement (**PPA**) basis.

In addition, low carbon hydrogen can be used as an energy source by injecting it into natural gas networks, making the gas cleaner. However, this "blending" has its limitations (see below in relation to the challenges related to transportation).

As a fuel, hydrogen is a clean power source, with zero carbon emissions at use. It is also considered a facilitator in job creation and job repurposing in a post-COVID-19 world.

Cost

Low carbon hydrogen is not currently cost-competitive when compared with other energy sources. The cost of hydrogen varies significantly across regions; estimates vary, with green hydrogen costs reported to cost anything from two to seven times more to produce than grey hydrogen (the costs vary predominantly depending on the availability and cost of renewable energy). In addition to production costs, hydrogen storage and transportation are high and energy intensive, particularly as a result of its low density. The gap between the costs of raw materials, electrolysers, production, transportation, storage and use of low carbon hydrogen and the costs of producing and using grey hydrogen, brown hydrogen, natural gas and the other fossil fuels that it seeks to displace needs to be narrowed if the low carbon hydrogen industry is to flourish.

Positively, Wood Mackenzie (*ibid.*) estimates that green hydrogen will be competitive with fossil fuels by 2028 to 2033, assuming a US$30/MWh power price in 2030, while the Hydrogen Council predicts that the cost of producing "clean hydrogen" should decline by up to 60% by 2030, with the optimal production option highly dependent on the region, and hydrogen delivery costs reducing by up to 70% over the same period (*Path to hydrogen competitiveness, A cost perspective*, *Hydrogen Council*, 20 January 2020).

Hydrogen production costs are expected to fall as a result of declining costs of renewables (the cost of solar and wind power is the largest driver of green hydrogen production costs), scaling-up and standardisation of electrolyser designs, the scaling-up of hydrogen production and the development of lower-cost CCUS facilities. At the same time, carbon prices may rise, although it is unlikely they will rise to a level representing the full socio-economic and environmental costs of greenhouse gas emissions.

In addition to the cost of renewables, the availability of renewable electricity for green hydrogen must be considered if the hydrogen is to be considered "green" in any given moment. Where a project is connected to the grid, this may include electricity produced from conventional electricity producers and, therefore, may have a negative impact on the low carbon nature of the hydrogen being produced. Green hydrogen producers will need to balance the cost of being connected to the grid (and the cost implications of relative carbon emissions) *versus* the risks and costs of a renewables captive (including the risk of outages).

In addition to production costs, producers and end users may face substantial, one-off capital costs to fund the development of new facilities and/or the conversion of existing facilities.

Technology

Low carbon hydrogen technology is still at relatively nascent stages of development and lacks economies of scale. Linked to the relatively high costs, it requires large amounts of energy to produce, compress, store and transport low carbon hydrogen to end users.

Green hydrogen production requires a steady supply of water as a feedstock and renewable energy as a power source to split the hydrogen and oxygen from water in an electrolyser. There are currently different types of electrolyser designs, each presenting challenges, with varying capital costs and varying efficiencies. Green hydrogen suffers measurable energy losses at each stage of the value chain; around 30–35% of the energy used to produce hydrogen through electrolysis is lost (*Green Hydrogen, A Guide to Policy Making*, IRENA, 2020). There are also considerable energy losses in converting hydrogen for transportation, transporting the hydrogen and using it in fuel cells. The greater the energy loss, the larger amount of renewable electricity needed to produce green hydrogen.

There is thus a clear potential for technological advances to enable both the costs to come down and efficiencies to increase, and this, coupled with the continued reduction in the cost of renewable energy, may accelerate the speed and scale of deployment of green hydrogen.

As mentioned above, scaling-up is essential; economies of scale should, in time, enable electrolyser costs to drop more and lead to reductions in the overall costs of the production and delivery of green hydrogen, with the cost of electrolysers becoming increasingly competitive as the supply chain develops. This scaling-up has already begun, with electrolyser manufacturing capacity increasing exponentially during the last two to three years. This growth is expected to continue.

Blue hydrogen faces technical challenges as well. Countries which have hydrocarbon resources can produce blue hydrogen to reduce their carbon footprint. Nevertheless, while CCUS technology is not new, it has not been widely deployed, largely due to prohibitive costs. The drive towards net zero is changing priorities, nonetheless; many of the major oil and gas companies are now committed to developing CCUS technology and producing blue hydrogen, and a number are even looking at green hydrogen projects. The challenge for the blue hydrogen projects is to reduce production costs in a project where a unit of hydrogen yields less energy than a unit of natural gas, so more gas is needed to supply an equivalent amount of clean energy. As with the scaling-up of electrolyser use, the scaling-up of CCUS technology is expected to increase efficiencies while at the same time reduce costs.

CCUS is not limited to oil and gas projects; it is already successfully used and can be developed and scaled-up in mining and cement sectors. It can likewise be used in other industrial sectors, such as fertilisers, steel and iron, with relatively modest capital investments.

Infrastructure, Storage and Transportation

For renewable energy generators, where there is a developed electricity network, transporting the electricity to end users is not normally problematic. The position of low carbon hydrogen producers is different. Hydrogen transportation infrastructure remains underdeveloped in most areas.

As a low-density fuel, hydrogen is complex to transport. For hydrogen to be transported, it must be compressed or liquefied (using electricity), making storage and transportation complex and costly. There are three primary forms in which to transport hydrogen: compressed hydrogen; liquefied hydrogen; or bound

into molecules which are easier to transport, such as ammonia and liquid organic hydrogen carriers. Depending on the form, it can be transported by gas pipeline or tanker (ship, lorry or train). The relative costs of pipeline and tanker vary with both the distance travelled and the volume of hydrogen transported. It is likely that new pipelines may have to be developed or existing infrastructure retrofitted in order to transport hydrogen.

The process in which hydrogen is compressed and liquefied uses a lot of energy; if there is no renewable energy available for this process, this will have a negative impact on the low carbon nature of the hydrogen that has been produced. Availability of renewable energy sources for compression and liquefaction will therefore be a concern.

Hydrogen may be blended with natural gas and transported in existing natural gas pipelines. This has its own challenges; depending on the regulations, hydrogen may make up only around 10–20% of the blend and there are technical challenges including possible requirements to reinforce and retrofit pipes. The blending limit will reduce the impact of the decarbonisation benefits and, for some end users, such a blend may not be suitable if they require either pure hydrogen or gas with a higher content of hydrogen. Technical studies will likewise be required to assess the suitability of existing gas pipeline infrastructure for handling hydrogen.

Where low carbon hydrogen is converted into and from ammonia or a liquid organic hydrogen carrier for shipping, this facilitates long-distance low carbon hydrogen supply. Using ammonia as the hydrogen carrier has the benefit of being established technology and can benefit from using existing infrastructure for shipping. However, where end users require pure hydrogen, the technology to convert ammonia back into hydrogen is relatively underdeveloped. Additionally, the conversion into and from ammonia (or a liquid organic hydrogen carrier) and shipping comes at a cost and sizeable energy loss (13–25%; IRENA, *ibid.*). It is likely that, for any such shipping to be sustainable, it will need to develop in much the same was as the LNG market has developed; producers will need to demonstrate strong demand backed by long-term sale and purchase agreements to fund the initial required infrastructure, with a spot market eventually developing in the medium to longer term.

Lastly, in relation to storage, large-scale storage is likely to be a strategic part of the low carbon hydrogen supply chain (in particular with regard to the role that hydrogen can play in balancing energy supply). The types of storage and capacity will vary depending on availability of existing facilities and local geology. Geographies with natural underground storage or salt caverns may be well suited to developing storage facilities.

Supply and Demand

Except in periods of overall low system demand when wholesale prices may turn negative, renewable energy generators face little demand risk. The position of low carbon hydrogen producers is different. There is a lack of a global hydrogen supply chain; there are high capital costs and unpredictable demand and revenue streams. There is a lack of a liquid wholesale market for hydrogen producers to sell into and there is a lack of a developed public transportation infrastructure for hydrogen.

There is no ready-made list of end users already using hydrogen; many will be new customers and encounter costs as a result of changing or converting technologies. While end users already using hydrogen as a feedstock (for example, refineries and ammonia producers) would not need to incur any capital costs in switching from grey or brown hydrogen to low carbon hydrogen, other possible users, such as the steel industry, would incur material costs in converting their facilities. The European Commission's 2020 strategy, *A hydrogen strategy for a climate-neutral Europe* (COM (2020) 301 final, 8 July 2020), sets out among other things the strategy for boosting demand in end use sectors, with industrial applications and mobility to be developed gradually to efficiently use hydrogen. The industrial sector strategy follows a two stage approach: firstly, an immediate application to reduce and replace the use of carbon-intensive hydrogen in refineries, ammonia production, new forms of methanol production and partial replacement of fossil fuels in steel making; and secondly, hydrogen can form the basis for investing in, and constructing, zero carbon steel-making processes.

Legal and Regulatory Considerations

There is a lack of specific legislation governing the production of low carbon hydrogen; indeed in a number of jurisdictions, there is a rish that the regulatory regime operates as a barrier to investing in, and developing, low carbon hydrogen projects. In most jurisdictions, hydrogen production will be governed by a myriad of existing gas, energy, water, health, safety and environmental regulations.

Most jurisdictions will already have in place general regulations around the use of hydrogen. As a highly flammable gas, the production, storage and transportation of hydrogen will usually be subject to detailed safeguards, use of specialised equipment, and recording and reporting requirements. Hydrogen production will be subject to local environmental laws and regulations, and will typically be subject to detailed approvals and consents, including environmental impact assessments and reporting requirements. Moreover, a number of chemicals other than hydrogen may be present during the production process, which may similarly be subject to detailed health, safety and reporting requirements. However, most regulatory frameworks do not contemplate the large-scale production of low carbon hydrogen.

If a project includes supply of low carbon hydrogen into the existing natural gas network, the rules around third party access (**TPA**) to the domestic gas market will need to be considered. While regulations around the gas networks are likely to be very detailed, including in relation to the TPA regime, and while some jurisdictions already have in place limits around blending and requirements in relation to materials and retrofitting, many do not have regulations specific to hydrogen. Adapting regulations which facilitate access and blending will provide regulators with another opportunity to support the low carbon sector.

Furthermore, for green hydrogen, sourcing of water is crucial and, again, many regulatory frameworks will simply not contemplate the large-scale use of electrolysers in green hydrogen production. For a green hydrogen project to be sustainable, developers will need to source a sufficient and sustainable volume of suitable quality water for use in the electrolysis process. The requirements around using such water will need to be fully understood, including permits for connecting to the local water network, permits for using river water, or, if seawater will be the source, the relevant approvals and consents required to construct and operate a desalination facility (including issues such as water temperature management and disposal of brine). Not all jurisdictions will have in place the regulations, or the regulations may not be tailored to green hydrogen production. An assessment of the environmental impact of any such water usage will also be essential, particularly in areas where there is water scarcity or there could be an impact on other sectors, such as agriculture and fisheries.

Another consideration is the need for regulators in different jurisdictions to co-operate: if regulations and standards are developed in isolation, this could impede the growth of the low carbon hydrogen sector. Notwithstanding increasing commitments by

states around the world to develop low carbon hydrogen and increase its production and/or its use, their policies and regulations differ substantially. If the benefits around the export of hydrogen are to be realised, common definitions and methodologies for defining emissions from each unit of hydrogen produced and transported, common standards and international sustainability criteria will need to be developed. Regulations around the export (and import) of hydrogen will need to be considered and, insofar as possible, aligned.

Incentives

In many countries, financial and/or tax incentives may be required in the short term to allow the low carbon hydrogen sector to scale-up at the pace required and recognise the role it plays in reducing carbon emissions. The EU is currently driving forward growth, representing the majority of the low carbon hydrogen pipeline, which is not surprising given the financial commitments and electrolyser capacity targets included in the EU's 2020 Green Recovery Package. Outside the EU, other leading jurisdictions include Australia, Canada, Chile, Japan and South Korea.

Globally, the solar and wind electricity generation sectors thrived off the back of government financial and regulatory incentives, which stimulated demand and led to the rapid scaling-up of projects, consequential reduced costs and more demand. Although there are differences between renewable electricity generation and low carbon hydrogen, governments and regulators can use the lessons learned – both good and bad – in developing and administering renewable electricity generation support incentives to consider what support mechanisms may facilitate not only the growth of low carbon hydrogen, but also ensuring that such growth can be sustained in the longer term.

As mentioned above, in most jurisdictions, regulations which are specific to the production, storage, transportation and use of low carbon hydrogen are generally lacking. Regulatory change will provide an opportunity for policy makers and regulators to address these issues and to put in place adequate support mechanisms, which recognise the low carbon nature of the projects and give transparent economic support (where applicable equivalent to similar projects in the relevant jurisdiction); for example, financial incentives, efficiency incentives, tax credits, offset credits and/or some form of tradable green certificates. As recognised by the European Commision (*ibid.*), incentives are likely to be required for some time given the need to scale-up low carbon hydrogen until it becomes cost-competitive. Any such support should not be considered in isolation and will need to take into account applicable state aid rules and restrictions; the importance of tailored regulatory regimes will be essential and will be significant in attracting commercial financing for projects.

Conclusions

Low carbon hydrogen has the ability to make a positive contribution towards states achieving their net zero objectives. For this to be realised, there are multiple and interlinked factors which will need to be considered. The scaling-up of technology will be fundamental to increasing efficiencies and reducing costs, in addition to encouraging developers and funders to invest in projects and persuading end users to switch technologies, with the ultimate goal of creating predictable demand and supply and an established hydrogen market. Significant investment in either developing new infrastructure or retrofitting existing infrastructure will be needed.

Low carbon hydrogen producers will need to mitigate the risks by taking various measures, including:

- considerations around security of renewable energy supply and long-term PPAs;
- understanding risks around proximity of power supply and end users, to mitigate transportation and storage risks and costs;
- using, where possible, existing natural gas pipeline networks but also understanding the TPA restrictions, limits in relation to blending and any requirements that may give rise to retrofitting obligations;
- contractual protection where counterparties suffer prolonged outages or elect to change technology;
- counterparty due diligence in terms of creditworthiness and contractual protection in relation to defaults and insolvency-related events; and
- long-term fixed-price sale and purchase agreements to give predictability of demand and return, and thereby facilitate financing.

Central to all of this will be the development of transparent and tailored regulatory regimes to support the low carbon hydrogen sector, coupled (at least initially) with financial and/or tax incentives. In order for the low carbon hydrogen sector to reach its full potential, regulators will need to make sure existing regulations are adequate and keep up with the scale and pace of technological advances. Tailored standards and regulations are needed to attract investors and developers and ensure the long-term success of the sector.

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Mhairi is a member of the Board and Vice-Chair of the Clean Energy Council, a non-profit organisation providing a forum for both private and public sector organisations participating in the clean energy sector across the Middle East and North Africa.

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1 Overview of the Renewable Energy Sector

1.1 What is the basis of renewable energy policy and regulation in your jurisdiction and is there a statutory definition of 'renewable energy', 'clean energy' or equivalent terminology?

At the federal level in Australia, the Mandatory Renewable Energy Target incentivises investment in 'small-scale' and 'large-scale' renewable facilities.

The Small-scale Renewable Energy Target Scheme (**SRET**) incentivises energy consumers to install:

- solar photovoltaic (**PV**) systems with a capacity of no more than 100kW and a total annual electricity output of less than 250MWh;
- wind turbines with a capacity of no more than 10kW and a total annual electricity output of less than 25MWh; and
- hydro systems with a capacity of no more than 6.4kW and a total annual electricity output of less than 25MWh.

The scheme legislates an annual target requiring a percentage of all power consumed on Australia's major grids to be met by small-scale renewable facilities. It does so by:

- permitting Small-scale Technology Certificates (**STCs**) to be created from eligible facilities upon installation for their deemed generation through to 2030; and
- obliging liable entities (e.g. retailers) to acquire and subsequently surrender STCs to the Clean Energy Regulator on a quarterly basis to progressively meet an annual target each year (through to 2030).

The small-scale renewable energy target for 2021 is 28.80%, which equates to approximately 50,600GWh *per annum* (i.e. 50.6 million small-scale technology certificates).

By contrast, the Large-scale Renewable Energy Target Scheme (**LRET**) incentivises investment in 'large-scale' renewable energy generation (including solar PV, wind and hydro facilities with capacities and annual outputs that exceed the kW or MWh ceilings under the SRET). It is enforced in a similar way to the SRET by imposing annual statutory targets on major wholesale purchasers of power (e.g. retailers). One Large-scale Generation Certificate (**LGC**) can be created for each MWh of electricity produced by accredited renewable facilities. Like the SRET, the LRET is legislated to remain in place until 2030.

There are 19 eligible categories of renewable energy sources under the LRET. They are hydro, wave, tide and ocean power, wind, solar, geothermal, hot dry rocks, energy crops, wood waste, agricultural waste, agricultural processing waste, food waste, food processing waste, bagasse (i.e. sugar cane waste), black liquor, municipal solid waste, landfill gas and gas & biomass from sewage.

The large-scale renewable energy target for 2021 and each year through to 2030 is 33,000GWh *per annum* which, in 2021, equates to approximately 18.54% of electricity consumed on Australia's major grids.

There is already more than enough accredited renewable capacity in Australia to meet this target through to expiry of the scheme. However, the scheme is also becoming a *de facto* carbon offset mechanism. This is because the voluntary surrender of LGCs by electricity consumers is recognised as an offset to their scope 2 emissions under Australia's National Greenhouse & Energy Reporting Scheme.

1.2 Describe the main participants in the renewable energy sector and the roles which they each perform.

The main participants in the renewable energy sector in Australia are:

- **Utility-scale renewable energy generators** which, as discussed above, are able to be accredited under the LRET to derive revenue through the sale of LGCs.
- **Small-scale and distributed energy resources (DER)** owners/installers who, as discussed above, are able to be accredited under the SRET to derive revenue through the sale of STCs.
- The economically regulated **transmission and distribution networks** in each State and Territory of Australia, which deliver power from renewable energy generators (and traditional thermal generators) to end-users.
- The **Australian Energy Market Operator (AEMO)** which:
  - operates the National Electricity Market (**NEM**) and an associated ancillary services market in the Australian Capital Territory (**ACT**), New South Wales (**NSW**), Queensland, South Australia, Tasmania and Victoria and also operates and manages the interconnected electricity system within those jurisdictions;
  - operates the Wholesale Electricity Market (**WEM**) across the South-West Interconnected System (**SWIS**) in Southern-Western Australia;
  - undertakes network planning for, and coordinates access to, the transmission network in Victoria; and
  - has recently been appointed to be the 'Consumer Trustee' in NSW to, amongst other things, have oversight over the coordinated planning and investment in electricity generation, storage and transmission in that jurisdiction.
- **Energy retailers** who have renewable energy targets imposed upon them under the LRET and SRET, with penalties applying if they do not meet those targets. Energy retailers are also increasingly offering products

that are linked (contractually) to the output of upstream renewable facilities to allow consumers to purchase 'green' energy (over and above the requirements under the LRET and SRET).

- **Commercial and industrial customers** who, in order to reduce their carbon footprint, are increasingly entering into power purchase agreements with large-scale utility renewable projects either directly or indirectly under 'look-through' arrangements with their energy retailers.

In the Northern Territory, the power systems in Alice Springs, Darwin-Katherine and Tennant Creek are operated by the Northern Territory Electricity System & Market Operator. It is a division of the Power and Water Corporation, which is a Northern Territory government-owned corporation.

There are also a number of smaller 'stand-alone' electricity grids in the major minerals provinces in Queensland and Western Australia, and in remote townships throughout remote Australia. The electricity infrastructure in these grids is commonly (but not always) operated on an integrated basis by a single entity (or single corporate group). However, there is a growing trend to introduce renewable generation into these grids to replace (at least in part) existing thermal generation (e.g. diesel or gas-fired generation). These developments are being undertaken by the grid operator itself or by outsourcing the development to an independent power producer.

1.3 Describe the government's role in the ownership and development of renewable energy and any policy commitments towards renewable energy, including applicable renewable energy targets.

In addition to the LRET and SRET, the Federal Government has funded an 'Underwriting New Generation Investment' programme to support the development of up to six new pumped hydro projects (in addition to up to six new gasfired power stations). Up to $1 billion of funding has been committed to this programme and the shortlisted pumped hydro projects have been announced by the Federal Government.

The Federal Government also has two agencies that provide grants or funding to the renewable energy sector:

- the Australian Renewable Energy Agency, which played a key role in the last decade in the development of the utility-scale renewable sector, but is now focusing more on adjacent industries (e.g. 'green' hydrogen); and
- the Clean Energy Finance Corporation (**CEFC**), which is a dedicated financier to renewable and 'green' projects.

At the State-level, NSW has a policy to achieve net zero emissions in that jurisdiction by 2050, and has introduced enabling legislation to progressively implement its $32 billion Electricity Infrastructure Roadmap.

The other Australian States and Territories have their own renewable energy targets. However, only the ACT (which has already achieved 100% renewable-sourced energy), Tasmania and Victoria have enshrined those targets in legislation.

In Victoria, the *Renewable Energy (Jobs and Investment) Act 2017* (Vic) legislates renewable energy targets of 25% by 2020, 40% by 2025 and 50% by 2030 for that State. This Act imposes no obligations on industry participants or consumers; instead, the targets are used to drive the State Government's investment and procurement policies in the renewable energy sector. To that end, the Victoria Government ran a reverse auction in 2017/18 to purchase 928MW of renewable energy under offtake contracts from three wind projects and three solar projects. It has now announced that it will run a second auction process this year (2021) for at least 600MW of new renewable energy capacity to be located in Victoria.

In Tasmania, the State Government has passed legislation to enshrine a target of renewable generation equal to 150% of current consumption by 2030, and 200% by 2040. The government expects to achieve 100% renewable generation for domestic consumption by 2022; thus, the higher targets are intended to support the installation of new renewable generation for export to the mainland Australian states.

Other Australian jurisdictions have also previously run reverse auctions or have provided funding to their government-owned entities to do so. For example, Queensland has committed $2 billion to fund renewable developments by its state-owned entities. Other governments (including local governments) have gone out to tender to procure renewable-sourced power for the electricity load of their departments and agencies.

In addition, NSW, Queensland and Victoria have committed funding for, and are consulting on, the development of Renewable Energy Zones (**REZ**) for the most prospective renewable regions in each of those jurisdictions. At a minimum, these developments involve the commitment of government funding for the extension or upgrade of the transmission network in the identified zones. In some cases, that funding may be recovered by auctioning off access rights to the new or upgraded sections of the networks. However, the structures under which that will occur are still being developed (as at the date of writing).

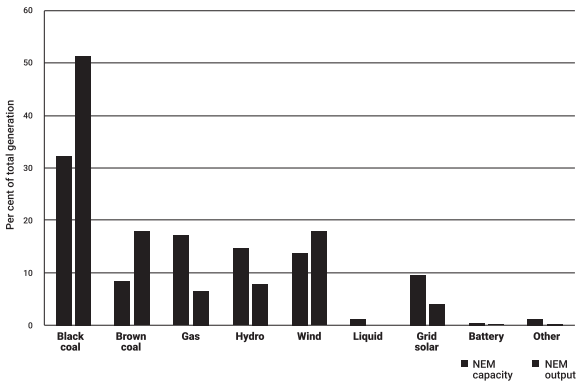
Lastly, there are battery and rooftop solar grants, loans or rebates in the ACT, Queensland, South Australia and Victoria.

2 Renewable Energy Market

2.1 Describe the market for renewable energy in your jurisdiction. What are the main types of renewable energy deployed and what are the trends in terms of technology preference and size of facility?

Australia saw a large wave of utility-scale renewable developments in the second half of the 2010s. This was driven (in the most part) by developers rushing to meet the annual targets under the LRET before those targets 'capped out' at the current level (i.e. 33,000GWh *per annum*). Attention is now increasingly turning to the incentives and targets of the States and Territories to drive further investment in utility-scale renewable energy.

According to the Australian Energy Regulator (**AER**), the utility-scale generation capacity in the NEM as at 30 June 2021 was:



At the other end of the market, Australia is a world leader in the installation of rooftop solar. In its '*State of the energy market 2021*', the AER reports that the total combined capacity of the rooftop solar fleet in the NEM in June 2021 was 11.4GW, which equated to around 17% of the NEM's total generation capacity.

However, the success of DER (particularly rooftop solar) has created its own challenges for AEMO (in its role as the system

operator for the NEM). This is because AEMO has little control over the dispatchability of exported power from the rooftop solar fleet. Instead, export from rooftop solar comes into the system (and the wholesale market) ahead of utility-scale generation, to meet system demand. This is proving to be unsustainable as the grid increasingly operates on a 'two-way' basis, and significant reforms are under development to give AEMO (and the distribution networks) greater oversight, insight and control of DER.

2.2 What role does the energy transition have in the level of commitment to, and investment in, renewables? What are the main drivers for change?

On 13 July 2021, AEMO's CEO & Managing Director announced in a public forum that:

> '*Under my leadership, AEMO will work closely and collaboratively with governments, industry and communities to design the affordable, reliable energy system that Australia needs … an energy system that's capable of handling 100% renewable energy, at any moment of the day, by 2025.*'

This marked a significant increase in planning by AEMO for the integration and penetration of renewable energy in the NEM.

However, this does not mean that the generation fleet in the NEM will be wholly renewable by 2025, or that renewable energy will dominate dispatch at all times in each day in 2025. Instead, it is a recognition that, like what actually occurred in South Australia in October 2020, by 2025 there will be increasing instances whereby some regions in the NEM will be wholly supplied by renewable energy.

This reflects the impact that the energy transition is having on investment in renewables in Australia. That transition is being driven by, amongst other things:

- sustained demand for the installation of rooftop solar/DER by consumers (in the residential, commercial and industrial sectors);
- the decreasing capital cost for renewable energy, batteries and associated technology;
- the progressive retirement of coal-fired power stations at the end of their technical or economic life; and
- jurisdictional policies supporting the development of renewable energy projects (see question 1.3, above).

2.3 What role, if any, has civil society played in the promotion of renewable energy?

Civil society in Australia has played a significant role in the promotion of renewable energy through:

- the very high popularity and take-up rate of DER (particularly rooftop solar) amongst households and the business community; and
- in the commercial and industrial sector, an increased appetite to reduce their carbon footprint. This is being achieved through, amongst other things, the acquisition of renewable energy under power purchase agreements or renewable-linked retail contracts.

2.4 What is the legal and regulatory framework for the generation, transmission and distribution of renewable energy?

Generation

In the NEM, generation facilities of 5MW or higher capacity are generally required to be registered with AEMO as a 'market generator' if they export power into the power system. Conversely, generation below 5MW capacity is exempt from registration. However, to derive spot market revenue, the small-scale facility must be exported into the NEM by a registered market customer (e.g. a retailer) or a registered small generation aggregator.

Generation (including renewable generation) at or above 30MW capacity must be registered with AEMO as either 'scheduled' (i.e. dispatchable) generation or as 'semischeduled' (i.e. semidispatchable) generation with AEMO. Scheduled generators compete on a lowest-price basis to be dispatched into the wholesale market. Similarly, semischeduled generation (which is the category that applies to variable renewable energy generation) also competes to be dispatched into the market. However, semi-scheduled generation is excused under the market rules if it does not meet its dispatch targets due to a lack of renewable resources (e.g. wind, solar, etc.).

In some jurisdictions in the NEM, additional State or Territory generation licences/authorities also need to be obtained from the jurisdictional energy regulator or government department.

Transmission and distribution

The major transmission and distribution networks in the NEM are regulated monopolies. They are economically regulated by the AER and their annual revenue entitlements are determined, in advance, in five-year cycles.

In addition, the owner, operator or controller of the transmission or distribution network must also be registered as a 'network service provider' with AEMO. Also, the operators of the major network businesses are usually required to hold a distribution authority or network licence from the energy regulator or government department in the jurisdiction (i.e. the State or Territory) in which they are located.

An open access policy applies to the interconnected grid that underpins the NEM. The process for renewable projects to obtain access to the network under that principle is set out in the National Electricity Rules.

The construction of connecting lines into the regulated network is not restricted to the regulated network entity. However, if the line is 30km or longer, it must be built to the design standard of the regulated network and, once built, must be handed over to be operated and maintained by the regulated network entity (under contract). The owner of these large connecting assets must also publish an access policy outlining the basis on which it will enable others to connect into the line.

As mentioned above, some jurisdictions in the NEM are developing their own frameworks for REZ, and the open access model might be disapplied to those zones. Instead, a finite amount of access to the REZ might be auctioned to renewable developers.

The above discussion relates only to the NEM. System-specific requirements apply to the other major transmission or distribution systems in Australia (e.g. the WEM in Western Australia and the power systems in the Northern Territory).

2.5 What are the main challenges that limit investment in, and development of, renewable energy projects?

Australia's transmission grids, particularly those in the NEM, were built on a 'hub and spoke' model to bring electricity from large-scale thermal generation into major cities and other demand centres. However, increasingly, generation in the NEM is becoming decentralised as thermal generation is being replaced or displaced by dispersed renewable generation across the grid.

This means that:

- the transmission networks are in need of substantial upgrades to accommodate new renewable generation; and

- the distribution networks are being called on to operate in a 'two-way' fashion, both to distribute powers to end-use consumers and take back and re-distribute power from their on-site generation and battery facilities.

At the utility-scale end of the sector, securing timely access to the grid is an ongoing challenge. Each connection is subject to detailed consideration by the regulated network entity and by AEMO, particularly in relation to the impact that new variable renewable generation will have on the dispatch of other generation facilities in the system, and more broadly on system security.

These impacts are difficult to assess and may result in:

- new projects having to commit additional capital to install equipment to alleviate any system security impacts arising from their project, or to ensure that they do not adversely impact the output of generators already connected to the system; and/or
- delays in achieving commissioning and energisation of a new project at its connection point into the power system.

Even once connection is achieved, the output from some utility-scale renewable plants has, at times, been partly constrained (i.e. reduced) by AEMO to allow it to manage system security requirements (e.g. voltage or frequency fluctuations, low inertia, low system strength, etc.) in the applicable section of the grid.

At the DER side of the sector, a number of pending reforms are proposed to:

- provide AEMO with the ability to disconnect and reconnect DER to better manage system stability and reliability in the power system. Initial reforms apply in South Australia but are under broader consideration for the rest of the NEM;
- permit distribution networks to price for the 'two-way' services they are increasingly providing to the market (i.e. 'import services' for power consumed by consumers and 'export services' for power exported by consumers back into the grid from DER); and
- permit distribution networks to create network pricing structures that reward customers for exporting energy at times of high demand and charge customers when the network is congested.

2.6 How are large utility-scale renewable power projects typically tendered?

Project proponents typically engage merchant banks to run an auction process for the sale of all or part of a renewable project (or equity in the project). This can occur at different points in the development of a project. However, at a minimum, projects commonly need to have agreed the generator performances standards for the project with AEMO, hold applicable development approvals and, ideally, have a power purchase agreement with a credible buyer for all or some of the projected output of the project.

If the project is fully financed or, even better, fully constructed and connected to the grid, this generally improves the chances of securing a buyer (or buyers). In addition, the further developed a project is, the higher the purchase price (on a $/MWh basis) is likely to be.

For most sale processes, the asset is initially widely marketed to receive indicative bids. Key financial information and an information memorandum is generally provided at this stage.

Once indicative offers are received, a smaller number of bidders are usually shortlisted to receive further information to undertake due diligence on the project and submit a final and best offer. After that, negotiations ideally are finalised quickly with a final preferred bidder through to signing of a sale and purchase agreement (and any related documentation). Completion of the transaction would occur sometime after signing, depending on the amount of time required for the parties to undertake pre-completion requirements.

2.7 To what extent is your jurisdiction's energy demand met through domestic renewable power generation?

As per question 2.1 above, in its '*State of the energy market 2021*', the AER reported that the total combined capacity of domestic renewable power generation in June 2021 was 11.4GW, which equated to around 17% of the NEM's total generation capacity.

In Western Australia, in October 2020, the Western Australian Minister for Energy noted that 300,000 households in the SWIS had rooftop solar, which accounted for over 20% of the annual electricity generated in that power system. A further 1MW of DER was continuing to be added to the system on a week-on-week basis.

3 Sale of Renewable Energy and Financial Incentives

3.1 What is the legal and regulatory framework for the sale of utility-scale renewable power?

The energy regulatory framework for the sale of utility-scale renewable power into the NEM (and major Australian power systems) on a merchant basis is described in question 2.4, above.

However, in order to secure the revenue streams for a new project, the developer will commonly look to enter into a power purchase agreement with one or more offtakers from the project. These contracts are commonly referred to as 'contracts for differences' (i.e. financial derivatives) and, before entering into such arrangements, the developer should consider whether they will need to hold an Australian financial services licence in order to lawfully do so.

The sale of utility-scale renewable power in off-grid scenarios, remote locations and isolated grids is subject to lower levels of regulation; however, the owner or operator of the facility may be required to hold a State- or Territory-specific generation or retail licence or authority.

3.2 Are there financial or regulatory incentives available to promote investment in/sale of utility-scale renewable power?

A number of financial or regulatory incentives have been offered by the Federal, State and Territory Governments. See question 1.3 above for more details.

3.3 What are the main sources of financing for the development of utility-scale renewable power projects?

Australia has a mature market for the financing of utility-scale renewable power projects. Participants in the market include the major Australian banks, as well as local branches of international financiers.

In addition, the CEFC (a Federal Government agency) has a specific mandate to finance renewable and 'green' projects.

3.4 What is the legal and regulatory framework applicable to distributed/C&I renewable energy?

In the NEM, the market rules permit retailers and small generation aggregators to:

- purchase 'excess' generation from DER facilities for a fixed price; and
- subsequently export (i.e. on-sell) that power into the NEM at the prevailing wholesale market spot price.

In addition, some energy retailers have developed offerings under trial conditions to centrally manage DER facilities to provide grid support and derive revenue in the ancillary services markets associated with the NEM. A significant reform package is under consideration by the Australian Energy Market Commission (**AEMC**) to streamline the participation of DER in these markets.

3.5 Are there financial or regulatory incentives available to promote investment in distributed/C&I renewable energy facilities?

There are battery and rooftop solar grants, loans or rebates available in the ACT, Queensland, South Australia and Victoria.

3.6 What are the main sources of financing for the development of distributed/C&I renewable energy facilities?

A number of equipment manufacturers, installers, retailers and third-party financiers provide finance (or deferred payment contracts) for the installation of distributed/C&I renewable energy facilities.

3.7 What is the legal and regulatory framework that applies for clean energy certificates/environmental attributes from renewable energy projects?

See the response to question 1.1 above.

3.8 Are there financial or regulatory incentives or mechanisms in place to promote the purchase of renewable energy by the private sector?

If private sector participants purchase LGCs and voluntarily surrender them to the Clean Energy Regulator, they can claim an offset to their carbon emissions under the National Greenhouse and Energy Reporting Scheme.

In addition, under the 'GreenPower' accreditation programme, consumers can elect to pay a premium to their retailer for 'green' power. The retailer must then acquire and surrender LGCs (in addition to their surrender requirements under the LRET to meet their annual targets) equal to the amount of 'green' power that their customers have paid a premium to acquire.

4 Consents and Permits

4.1 What are the primary consents and permits required to construct, commission and operate utility-scale renewable energy facilities?

The permissions that are required to construct, commission and operate utility-scale renewable energy facilities largely vary based upon the type, size and location of the facility.

Some forms of renewable energy generation are required to operate under specific legislative frameworks (such as geothermal generation sources in some States) which include titling requirements for both exploration and production phases of the project.

Other forms of renewable energy generation (such as utility-scale solar farms and wind farms) are typically regulated under general frameworks that control the use and development of land, as well as the environmental impacts of developments. In particular, a proponent of a utility-scale renewable energy facility will usually require a planning permit or development consent for the use and development of land for the purpose of the renewable energy facility. Such a permission may also cover associated infrastructure (such as a substation and power lines) and authorise ancillary matters (such as native vegetation removal). In some cases, proponents may be exempt from permit or consent requirements, or have access to alternative approval pathways (for instance, the facility may be specifically authorised and regulated under the relevant planning scheme).

Various studies and assessments are typically required to support the application for a planning permit or development consent for a utility-scale renewable energy facility. For example, for a wind farm, a proponent typically must provide expert reports that assess impacts such as noise, shadow flicker and electromagnetic interference. As part of the application process, notifications to adjacent owners and occupiers and referrals to relevant authorities, who can provide comments or objections in respect of the application, may also be required. In some jurisdictions, the application will be subject to review by independent assessment bodies, and a public inquiry or hearing process may be required as part of the decision-making process. Permits or approvals are typically granted subject to a range of conditions, relating to matters such as noise, blade glint, shadow flicker and electromagnetic impact.

In addition to the requirement for a planning permit or development consent, there may be a range of other permit or consent requirements under State laws. For example, a proponent may be required to obtain approvals from network operators for transmission lines, an environmental protection licence may be required for the construction and operation of the facility (addressing issues such as noise pollution), and approvals or consents may be required relating to matters such as aboriginal heritage, water, national parks and wildlife.

Where a proposed utility-scale renewable energy facility has, will have or is likely to have a significant impact on any of the matters of national environmental significance (such as threatened species or ecological communities), the project is required to be referred to the Commonwealth Minister for Environment to assess whether federal environmental approval is required under the *Environmental Protection and Biodiversity Conservation Act 1999* (Cth). If approval is required, the project must go through an assessment and approval process in accordance with said Act, which in many cases can be undertaken in parallel with State approval processes.

4.2 What are the primary consents and permits required to construct, commission and operate distributed/C&I renewable energy facilities?

Building and construction registration requirements, both for corporations and individuals, apply in all States and Territories of Australia. In addition, electrical safety licensing and compliance requirements apply on a per-jurisdiction basis.

The Clean Energy Council also operates and administers a well-regarded industry accreditation programme for solar and

battery installers, which has been approved by the Australian Competition and Consumer Commission (**ACCC**). DER facilities must be installed by accredited installers in order to qualify to generate STCs under the SRET.

All distributed/C&I renewable energy facilities must be approved by the applicable regulated distribution entity in order to connect to the distribution grid. See question 4.4 below for more details.

4.3 What are the requirements for renewable energy facilities to be connected to and access the transmission network(s)?

In the NEM, in order to be connected to and access the transmission network, renewable energy facilities must have:

- agreed the 'generator performance standards' for the facility with AEMO;
- negotiated a connection and access agreement with the regulated transmission entity; and
- completed a commissioning and energisation programme with AEMO and the regulated transmission entity.

These aspects of the 'open access' regime are outlined and regulated under the National Electricity Law and National Electricity Rules.

A slightly different process applies in Victoria due to AEMO having a greater role in planning and managing the augmentation of the transmission network than in other jurisdictions in the NEM.

Furthermore, going forward, the Renewable Energy Zone programmes being considered and implemented in Queensland, NSW and Victoria might see different rules being applied for renewable projects to connect to the transmission network via those zones. See question 2.4 for a further discussion of this.

4.4 What are the requirements for renewable energy facilities to be connected to and access the distribution network(s)?

In the NEM, a similar 'open access' process to that which currently applies to the transmission grid also generally applies for the connection of utility-scale renewable generation to the distribution network.

For DER, connection to the distribution grid in the NEM is, except in Victoria, mostly governed by the National Energy Retail Law, the National Energy Retail Rules and related provisions in the National Electricity Rules. In Victoria, State-specific requirements apply.

4.5 Are microgrids able to operate? If so, what is the legislative basis and are there any financial or regulatory incentives available to promote investment in microgrids?

In Australia, a microgrid is generally understood as being either:

- a stand-alone power system which generates, delivers and supplies electricity to multiple customers, and is not physically connected to the national grid/NEM; or
- an embedded network that is connected to the NEM through a single connection point, but which is capable of operating independently from the NEM. This type of microgrid arrangement can be distinguished from a regular embedded network by having generation and storage capabilities that enable it to operate autonomously (without having to import power from the NEM) under standard operation.

There are examples of both types of microgrids in the NEM; however, the regulatory framework is in need of clarification and refinement. A regulatory reform package is being considered by the AEMC and is expected to be rolled out in the next one to two years.

4.6 Are there health, safety and environment laws/regulations which should be considered in relation to specific types of renewable energy or which may limit the deployment of specific types of renewable energy?

Health and safety

Most States and Territories in Australia have implemented the model Commonwealth Work Health and Safety legislation. Although Victoria and Western Australia have a separate framework, similar health and safety duties apply in these jurisdictions.

Under these health and safety frameworks, persons conducting a business or undertaking, such as a business that is developing a renewable energy facility, are under a general duty to ensure the health and safety of workers so far as is reasonably practicable. In addition, specific duties apply to a development involving the design, installation, construction or commission of a plant or structures (such as a renewable energy facility) in order to minimise risks of health and safety at a workplace.

For example, a proponent designing a windfarm or installing a renewable energy facility may be required to identify, assess and reduce the risk of hazards as far as is reasonably practicable, as well as maintain records of relevant actions. This could include developing systems and activities for ignition source control, security requirements and implementing a safety management plan that includes safe work guidelines and processes such as permits to work, incident management and access to site.

In addition, specific regulatory framework relating to electrical safety may apply and regulate the safe development and operation of the facility.

Environment

The environmental protection regulatory framework similarly varies between Australian States and Territories. However, most States and Territories have adopted a similar duties-based framework, modelled on occupational health and safety legislation, that focuses on preventing impacts to the environment from pollution and waste.

In particular, individuals and organisations involved in the deployment of a renewable energy facility may be subject to the general environmental duty. At a high level, this typically requires a person who is engaging in an activity to eliminate or otherwise minimise risks of harm to human health and the environment from pollution and waste so far as is reasonably practicable.

In some jurisdictions, specific renewable energy generation types will require authorisation under environmental protection regulatory frameworks. For example, some jurisdictions require that a proponent also hold an environmental protection licence (or similar) for a wind farm or a 'green' hydrogen facility.

5 Storage

5.1 What is the legal and regulatory framework which applies to energy storage and specifically the storage of renewable energy?

At the date of writing, stand-alone (e.g. utility-scale) energy storage in the NEM is required to be registered with AEMO as both a market load (for power imported from the grid for

charging) and a market generator or equivalent (to allow wholesale market revenue to be derived from the sale of excess power exported into the NEM).

This has seen batteries incur:

- network, market and system security costs in their capacity as a load; and
- market and system security costs, but not network costs, in their capacity as a market generator,

whereas other generation facilities have been able to net-off their imports from, and exports to, the NEM to reduce their exposure to such costs.

A significant reform proposal has been released by the AEMC which proposes to, among other things:

- enable storage to participate in the NEM and related ancillary services/system security markets under a singled 'integrated resource provider' registration category; and
- ensure that all NEM market participants bear their share of system and network costs on gross rather than netted energy streams in the same way that batteries currently do.

5.2 Are there any financial or regulatory incentives available to promote the storage of renewable energy?

There are solar and battery grants, loans or rebates available in the ACT, Queensland, South Australia and Victoria.

6 Foreign Investment and International Obligations

6.1 Are there any special requirements or limitations on foreign investors investing in renewable energy projects?

Under Australia's foreign investment regime, 'foreign persons' are required to notify the Australian Treasurer, advised by the Foreign Investment and Review Board (**FIRB**), of certain transactions and obtain clearance before proceeding with the transaction. This includes investment in renewable energy projects and related acquisitions (such as any acquisition of interests in Australian land required for such projects).

Australia's foreign investment regime consists of the *Foreign Acquisitions and Takeovers Act 1975* (Cth) (**FATA**), associated legislation and various regulations. The regime is also supported by Australia's Foreign Investment Policy and guidance notes released by FIRB (**Guidance Notes**), which are updated from time to time. The Australian Treasurer administers the FATA with the advice and assistance of FIRB. The regime aims to ensure that foreign direct investment is not 'contrary to Australia's national interest'. The Treasurer can:

- provide unconditional clearance for the transaction, on the basis it is not contrary to Australia's national interest;
- prohibit the transaction from proceeding, on the basis it is contrary to Australia's national interest; or
- impose conditions on the transaction, so that the transaction will not be contrary to Australia's national interest.

The Australian energy sector is considered a sensitive sector for foreign investments. As renewable energy plays a greater role in Australia's energy mix, FIRB considers that investments in this sector may affect Australia's national interest (including with regard to national security). Accordingly, where mandatory FIRB clearance is not required, voluntary notification can be made and is recommended by FIRB to be made for certain investments relating to renewable energy projects. For example, under FIRB's Guidance Note 8 as last updated 9 July 2021, foreign investors are encouraged to seek voluntary FIRB clearance for a range of relevant transactions including:

- investments in businesses or entities with a contractual relationship with the Australian Department of Defence in the energy sector (including renewable energy);
- investments in a business or entity that owns or operates an electricity generation station (including storage) with a generation capacity (or proposed capacity) of at least 50MW (noting that mandatory filing requirements apply at certain levels higher than this); and
- investments in an energy retailer (gas or electricity) where the foreign person would subsequently hold interests in energy retailers with more than 100,000 customers (noting that mandatory filing requirements apply for networks, systems and interconnectors that ultimately service more than 100,000 customers).

Seeking and obtaining clearance on a voluntary basis precludes the Treasurer of Australia from calling in a transaction for review if there are national security concerns. Without a mandatory or voluntary notification and associated clearance, the Treasurer has the ability to call in a transaction for up to 10 years (with very limited exceptions). For completeness, please note that even with a mandatory or voluntary clearance in hand, the Treasurer retains a 'last resort' power to review the decision and make certain orders if there are national security risks.

6.2 Are there any currency exchange restrictions or restrictions on the transfer of funds derived from investment in renewable energy projects?

General laws, including banking, anti-money laundering and counter-terrorism financing and sanctions laws apply. As above, specific conditions may be imposed on any clearance issued under the FATA.

6.3 Are there any employment limitations or requirements which may impact on foreign investment in renewable energy projects?

General employment laws in Australia apply. As above, specific conditions may be imposed on any clearance issued under the FATA.

6.4 Are there any limitations or requirements related to equipment and materials which may impact on foreign investment in renewable energy projects?

There are customs rulings, including trade measures, that may apply for major projects, depending on the goods and their country of origin.

7 Competition and Antitrust

7.1 Which governmental authority or regulator is responsible for the regulation of competition and antitrust in the renewable energy sector?

The ACCC is responsible for the regulation of competition and antitrust in the renewable energy sector.

7.2 What power or authority does the relevant governmental authority or regulator have to prohibit or take action in relation to anti-competitive practices?

The ACCC does not have the power to prohibit anti-competitive practices without a court order.

It has broad powers to investigate and take action in relation to anti-competitive practices, including to require production of documents and information, to obtain a search warrant to enter premises, seize documents and items, and to undertake telephone surveillance.

7.3 What are the key criteria applied by the relevant governmental authority or regulator to determine whether a practice is anti-competitive?

The prohibitions on anti-competitive practices are set out in Part IV of the *Competition and Consumer Act 2010* (Cth).

The key criteria the ACCC has regard to when determining whether a practice is anti-competitive are the prohibitions themselves. In summary terms, the following is prohibited: (A) agreements between competitors or potential competitors with the purpose, effect or likely effect of fixing prices or with the purpose of sharing markets, preventing, restricting or limiting the volume or type of particular goods or services available or rigging bids (known as 'cartel conduct'); (B) agreements or cooperative behaviour between competitors with the purpose, effect or likely effect of substantially lessening competition; (C) unilateral conduct by a firm with a substantial degree of market power which has the purpose, effect or likely effect of substantially lessening competition; and (D) exclusive dealing with the purpose, effect or likely effect of substantially lessening competition.

The ACCC's focus is on maintaining and promoting competition and remedying market failure, as well as protecting the interests and safety of consumers and supporting fair trading in markets. It is more likely to investigate and take action in relation to conduct that is of significant public interest, results in substantial consumer or small business detriment, or involving significant new market issues.

8 Dispute Resolution

8.1 Provide a short summary of the dispute resolution framework (statutory or contractual) that typically applies in the renewable energy sector, including procedures applying in the context of disputes between any applicable government authority/regulator and the private sector.

Participants in the renewable energy sector are commonly parties to a variety of contracts under which disputes are determined pursuant to the relevant contractual terms.

There are also statutory dispute resolution procedures for participants in the energy market that may be of particular relevance to emerging renewable projects.

Chapter 8, Part B of the NER imposes a framework for disputes between registered participants (including AEMO and connection applicants), which applies to:

- the application or interpretation of the NER;
- failure to reach agreement or negotiate in good faith on certain required matters;
- access arrangements for an intending participant or connection applicant;
- payment of moneys and obligations under the NER; and
- where participants have agreed for the disputes framework to apply.

These provisions provide for a staged system which can lead to final resolution by a Dispute Resolution Panel, which is subject to certain procedural and review provisions of the uniform *Commercial Arbitration Acts*.

The NEL also provides for determination of access disputes by the AER between renewable projects and regulated network entities.

8.2 Are alternative dispute resolution or tiered dispute resolution clauses common in the renewable energy sector?

It is common for contracts in the renewable energy sector to use alternative dispute resolution mechanisms. Tiered dispute resolution provisions are also common.

These mechanisms can have particular advantages in the energy sector, including the renewable energy sector. Parties may prefer all disputes, or at least technical disputes, to be determined by an appropriate subject-matter expert, rather than in the courts. Similarly, there can be a perception that commercial arbitration provides for greater speed, flexibility and confidentiality for the resolution of a contractual dispute.

8.3 What interim or emergency relief can the courts grant?

Australian courts have broad and often discretionary powers to grant interlocutory and interim injunctions.

In order to obtain interim or emergency relief, a party typically needs to demonstrate to the court that they have a '*prima facie* case' or that there is a 'serious question to be tried', and that the balance of convenience favours granting the relief. A party applying for interim relief will usually be required to give an undertaking to pay any damages the other party suffers as a result of the interim relief if the other party is ultimately successful in the overarching dispute.

8.4 Is your jurisdiction a party to and has it ratified the New York Convention on the Recognition and Enforcement of Foreign Arbitral Awards and/or the Convention on the Settlement of Investment Disputes between States and Nationals of Other States and/or any significant regional treaty for the recognition and enforcement of judgments and/or arbitral awards?

Australia is a party to and has ratified both the New York Convention on the Recognition and Enforcement of Foreign Arbitral Awards and the Convention on the Settlement of Investment Disputes between States and Nationals of Other States, to which the *International Arbitration Act 1974* (Cth) gives effect.

Foreign judgments may be enforced in Australia under the *Foreign Judgements Act* (the **FJA**). The FJA is limited to 'final and conclusive' monetary judgments in certain jurisdictions (listed in the regulations to the FJA) determined on the basis of 'substantial reciprocity' for Australian judgments (usually on the basis of a bilateral or multilateral agreement, of which there are currently 35 listed in the regulations). Australia is also party to the *Agreement between the Government of Australia and the Government of New Zealand on Trans-Tasman Court Proceedings and Regulatory Enforcement*. Pursuant to the *Trans-Tasman Proceedings Act 2010* (Cth), this provides a separate regime for the enforcement of judgments of New Zealand courts.

8.5 Are there any specific difficulties (whether as a matter of law or practice) in litigating, or seeking to enforce judgments or awards, against government authorities or the state?

Although a doctrine of Crown (or State) immunity applies in Australia, government authorities and State bodies are usually not subject to sovereign immunity in Australia. Commercial parties regularly seek and obtain civil relief against State parties.

8.6 Are there examples where foreign investors in the renewable energy sector have successfully obtained domestic judgments or arbitral awards seated in your jurisdiction against government authorities or the state?

Foreign investors have access to the same dispute and enforcement mechanisms against government authorities as any commercial actor in Australia. Investor confidence in the Australian renewable energy sector indicates that there is no perception from the market that there is a risk that foreign investors will be unable to obtain domestic judgments or arbitral awards against Australian government authorities.

9 Updates and Recent Developments

9.1 Please provide a summary of any recent cases, new legislation and regulations, policy announcements, trends and developments in renewables in your jurisdiction.

The Australian Energy Security Board (**ESB**) has made a range of policy recommendations to the Federal Government to outline a major reform agenda for the NEM for the period of 2021–2025. Those recommendations are, in due course, proposed to be considered by the National Energy Cabinet comprising all of the Energy Ministers in the Australian jurisdictions.

At the date of writing, the details of those recommendations are not known, but are not expected to differ materially from a range of proposals opened to industry consultation by the ESB in April 2021.

This Consultation Paper outlined a shortlist of reform options for the re-design of the NEM. Specifically, the ESB has proposed the following four reform pathways to address Australia's energy transition needs beyond 2025 in relation to:

- resource adequacy mechanisms and ageing thermal retirement;
- essential system services and scheduling and ahead mechanisms;
- integration of DER and demand-side participation; and
- access to the transmission network, including the development of REZ.

Acknowledgment

The authors would like to thank Mellissa Lai and Evan Goldman for their contributions to this chapter.

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Egypt

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1 Overview of the Renewable Energy Sector

1.1 What is the basis of renewable energy policy and regulation in your jurisdiction and is there a statutory definition of 'renewable energy', 'clean energy' or equivalent terminology?

In Egypt, renewable energy policy and regulations are established by several pieces of legislation:

a. The Renewable Energy Law no. 203/2014 (published on 21 December 2014) identifies four main mechanisms for the development of renewable energy projects: (i) state-owned projects with competitive bidding for engineering, procurement and construction (EPC) contracts; (ii) competitive bidding for build-own-operate (BOO) contracts; (iii) feed-in tariffs; and (iv) a merchant scheme according to which independent power producers can enter into bilateral contracts to sell power directly to consumers using the national grid against wheeling and grid-access charges payable to the grid operator.

b. The Electricity Law no. 87/2015 (published on 8 July 2015), as amended by Law no. 70/2021 (published on 13 June 2021), and its Executive Regulations issued by Decree no. 230/2016 of the Minister of Electricity and Renewable Energy (published on 23 May 2016) encourage energy efficiency and the generation of electricity from renewable sources, and provide for the complete independence of the activities of generation, distribution and transmission of electricity to achieve a liberalised and competitive electricity market.

c. Prime Ministerial Decrees no. 1947/2014 (published on 27 October 2014) and 2532/2016 (published on 29 September 2016) established the offtake tariffs applicable to the first and second regulatory periods of the equally split 4 GW Egyptian solar and wind feed-in tariff programme, in addition to 300 MW of small-scale distributed solar projects.

d. Circular no. 2/2020 of the Egyptian Electric Utility and Consumer Protection Regulatory Agency (EgyptERA) (published on 19 May 2020) restructures the net-metering system for solar power generation.

e. Prime Ministerial Decree no. 183/2019 of October 2019 determined the feed-in tariff for electricity generated from biomass.

f. The Investment Law no. 72/2017 (published on 31 May 2017) and its Executive Regulations issued by Prime Ministerial Decree no. 2310/2017 (published on 28 October 2017) set out the legal framework for the establishment of renewable energy projects and provide incentives for investment in this sector.

'Renewable energy resources' are defined in the Renewable Energy Law as 'natural sources of energy, which are non-depletable, and which may be used to produce electricity'.

1.2 Describe the main participants in the renewable energy sector and the roles which they each perform.

Egypt has a single-buyer electricity market, with the Egyptian Electricity Holding Company (EEHC) being the main player and owner of almost all of the distribution assets. Under this model, the Egyptian Electricity Transmission Company (EETC), a state-owned company, purchases electricity from all public and private generation companies and sells it to nine main distribution companies and other private electricity distribution companies. It also directly sells electricity to a number of consumers connected to the extra-high-voltage and high-voltage networks. EETC is also responsible for power exchanges with neighbouring countries over the present interconnections.

The New and Renewable Energy Authority (NREA), established in 1986, is the arm of the Egyptian Ministry of Electricity and Renewable Energy (MOERE) tasked with developing renewable energy programmes in Egypt on a commercial scale, as well as implementing related energy conservation programmes.

EgyptERA, established in 2000, is the independent legal entity that grants licences for the generation, transmission and distribution of electricity, and is responsible for overseeing compliance with the existing rules and regulations in the electricity sector.

Egypt aims to gradually replace the current model with a competitive market, based on bilateral contracts, together with spot, balancing and ancillary services' markets. The Electricity Law and its Executive Regulations set the ground for this transformation, with EETC separating from EEHC and becoming independent from all electricity companies and electric utility parties within a 10-year transitional phase and establishing third-party access to its network.

1.3 Describe the government's role in the ownership and development of renewable energy and any policy commitments towards renewable energy, including applicable renewable energy targets.

The Egyptian government has a long-term plan for the diversification of the energy mix and the reduction of dependence on fossil fuels, which predates Zohr offshore gas discovery and

the nuclear electricity facility under development. The government typically develops renewable energy generation projects through NREA, although the authority has the right to establish subsidiaries either alone or in conjunction with private sector entities as of October 2014, by virtue of Presidential Decree no. 135/2014 (published on 22 October 2014). The targeted renewables capacity is 20 per cent of the energy mix by 2022 (12 per cent wind, six per cent hydro, and two per cent solar) and 42 per cent by 2035 (22 per cent solar photovoltaics (PV), 14 per cent wind, four per cent concentrated solar power (CSP), and two per cent hydro).

2 Renewable Energy Market

2.1 Describe the market for renewable energy in your jurisdiction. What are the main types of renewable energy deployed and what are the trends in terms of technology preference and size of facility?

Since the launch of its feed-in tariff programme in 2014, Egypt has seen a boost in its renewable generation capacity, especially with respect to solar PV and wind power generation. Hydro power holds the biggest share of renewables in Egypt, followed by solar PV power, wind power, CSP and finally biomass. The country is working on introducing green hydrogen to the electricity mix.

2.2 What role does the energy transition have in the level of commitment to, and investment in, renewables? What are the main drivers for change?

It is believed that the initial surge in the renewable energy capacities in Egypt was part of the response to the blackouts in the summers following the 2011 events. The developments which followed were part of the plan for the diversification of the energy mix adopted by the country, which has led to an expansion in the installed capacity from solar PV and wind in particular. It is currently expected that the next revolution in the power sector, which will substantially expand the use of renewable energy in Egypt, will be the wave of transformation to electric mobility and green hydrogen, as well as integrating renewable generation in water treatment and desalination plants, and the electricity export to neighbouring countries. Power-to-X, in general, has the potential of preventing potential setbacks due to the COVID-19 pandemic or the existence of unused capacity on the national grid.

2.3 What role, if any, has civil society played in the promotion of renewable energy?

Private businesses, especially small renewable energy developers, have played a bigger role than civil society in the promotion of renewable energy in Egypt. Their business development work has created an appetite for renewable energy in the market, particularly with commercial and industrial offtakers.

2.4 What is the legal and regulatory framework for the generation, transmission and distribution of renewable energy?

The Renewable Energy Law identifies the different mechanisms for the generation of renewable energy. The Electricity Law defines the legal framework for the generation, distribution or sale of electricity more explicitly, and requires any company set up to develop these activities to be incorporated in the form of an Egyptian joint stock company. Such a company must generally seek a preliminary and then a final licence from EgyptERA in order to be permitted to carry out its activities. Electricity transmission is exclusively controlled by EETC.

2.5 What are the main challenges that limit investment in, and development of, renewable energy projects?

The generation capacity achieved so far in Egypt is thought to be slowing down the development of new large-scale renewables projects. Furthermore, for in-front-of-the-meter projects, power banking on the national grid could be problematic.

2.6 How are large utility-scale renewable power projects typically tendered?

Utility-scale renewable power projects are typically tendered either by NREA on an EPC or EPC+ finance basis, or by EETC on a BOO or auction basis. The government has recently been shifting towards the latter model in order to drive offtake prices down.

2.7 To what extent is your jurisdiction's energy demand met through domestic renewable power generation?

According to the latest statistics published by EEHC, the installed electricity capacity in 2019 was 58,353 MW. The peak load was 31,400 MW, and the total power generated was 199,843 GWh. In 2020, the renewable energy figures published by NREA for installed capacities were testament to progress in the alternative energy sphere: 2,832 MW hydro power; 1,623 MW solar PV power; 1,375 MW wind power; 140 MW CSP; and 12 MW biomass. The actual power generated from renewable sources in December 2020 was: 718 GWh hydro power; 285 GWh solar PV power; 266 GWh wind power; 33 GWh CSP; and 3 GWh biomass.

3 Sale of Renewable Energy and Financial Incentives

3.1 What is the legal and regulatory framework for the sale of utility-scale renewable power?

Large-scale 20 MW to 50 MW renewable energy projects are found under the feed-in tariff programme. Furthermore, certain 100 MW to 600 MW projects are also found in the competitive bidding scheme in the wind and PV power sectors. Both types of projects, including auctions, find their basis in the Renewable Energy Law. It is worth noting that the sale of electricity activity is not subject to value-added tax in Egypt.

3.2 Are there financial or regulatory incentives available to promote investment in/sale of utility-scale renewable power?

The government of Egypt offers a number of incentives and is putting in place favourable policies in order to promote the development of renewable energy projects in the country. The Investment Law granted a special investment incentive to new projects generating renewable energy or depending on it, or expansions of projects by the addition of new assets increasing

the production capacity. The incentive consists of a deduction of 30 per cent of the net taxable profits for the first seven years of the life of the project, subject to certain conditions such as the incentive value not exceeding 80 per cent of the paid-in capital until the start of the project's operations. The Investment Law also creates a two per cent unified rate of customs duties for all equipment and machinery necessary for the establishment of the project (down from five per cent). Land may be allocated free of charge if the project company's activity is deemed to be of a strategic interest; otherwise, two per cent of the production is generally payable yearly for land lease (based on the Renewable Energy Law).

3.3 What are the main sources of financing for the development of utility-scale renewable power projects?

The construction of renewables projects is largely financed by international finance institutions (IFIs) for private sector projects, or through grants from international donors for NREA projects. Most utility-scale renewable energy projects in the country are funded mainly through non-recourse project finance and a smaller equity portion (in the range of 75:25 or 80:20). Loans are typically sourced from IFIs and development finance institutions (DFIs), such as the International Finance Corporation, European Bank for Reconstruction and Development, European Investment Bank, Japan Bank for International Cooperation, Japan International Cooperation Agency or the African Development Bank for 12- to 18-year tenures. Where EETC is the offtaker, senior lenders now generally require a sovereign guarantee from the Egyptian Ministry of Finance or Central Bank of Egypt for the payments by the transmission company to the seller, as well as a seat of arbitration outside Egypt for the power purchase agreement. A very limited portion of the funding and part of the bonding are sourced from local commercial banks, given that most of the project components are sourced from outside Egypt in foreign currency, and local banks are legally required to lend in foreign currency only where the projects' profits are generated in foreign currency (while most of the utility-scale projects in which EETC is the offtaker are paid in local currency, in the equivalent of the tariff price in USD).

3.4 What is the legal and regulatory framework applicable to distributed/C&I renewable energy?

In addition to the utility-scale solar projects, the feed-in tariff programme also proposed tariffs for distributed PV ranging from EGP 0.848/kWh for residential systems below 10 kW up to EGP 0.973/kWh for systems between 200 kW and 500 kW. Outside of the feed-in tariff programme, the number of distributed solar generation projects is growing in the C&I segment, especially in manufacturing facilities with self-consumption plans.

3.5 Are there financial or regulatory incentives available to promote investment in distributed/C&I renewable energy facilities?

In 2013, Egypt introduced a net-metering scheme to promote distributed solar power. The scheme allowed small-scale renewable energy projects in the residential and the industrial and commercial sectors (with a maximum capacity recently increased from 5 MW to 20 MW) to feed electricity into the low-voltage grid. Under the scheme, solar PV generation is credited against the user's bill for consumption from the grid using a calculation method that credits surplus electricity in the consumers' highest tariff bracket. In May 2020, EgyptERA revamped the net-metering scheme by virtue of Circular no. 2/2020, introducing a number of limitations for the projects established thereunder, including the following requirements: the generation facility must be located within the premises of the electricity consumer; the total capacity of net-metering solar power projects connected to any single distribution company must not exceed 1.5 per cent of the peak load of the distribution companies registered during the financial year preceding the contract; the total capacity generated from solar net-metering projects must not exceed 300 MW (125 MW for capacities up to 500 kW and 100 MW for capacities greater than 500 kW and up to 20 MW); the installed capacity of the met-metering facility must not exceed the maximum load of the consumer during the year preceding the commercial operation date of the facility; and a balancing charge must be payable, among other requirements.

3.6 What are the main sources of financing for the development of distributed/C&I renewable energy facilities?

Smaller renewable energy projects and distributed renewables facilities are typically financed through commercial loans. A few local banks have recently allocated specific funding for small green projects, which is facilitating distributed renewable generation. In addition, some DFIs are allocating grants and concessional financing for small- and medium-scale distributed generation in the Middle East and North Africa region.

3.7 What is the legal and regulatory framework that applies for clean energy certificates/environmental attributes from renewable energy projects?

An Egyptian Designated National Authority is subordinated to the Egyptian Environmental Affairs Agency, and includes two branches: an executive branch, consisting of the Egyptian Council for the Clean Development Mechanism (CDM) (comprising representatives of certain ministries); and a technical branch, the Egyptian Bureau for CDM (comprising experts providing technical recommendations to the Council), which plays a role in deciding on the issuance of certified emission reduction credits. The board of EgyptERA is ultimately responsible for ratifying the rules, conditions and processes related to the issuance and trading of all renewable energy certificates.

3.8 Are there financial or regulatory incentives or mechanisms in place to promote the purchase of renewable energy by the private sector?

The merchant or independent power producer model provided for in the Renewable Energy Law allows private offtakers to enter into agreements with private power generation companies to secure the purchase of electricity from renewable energy sources. This does not grant any special incentive other than the offtaker possibly securing a fixed price for electricity in the long term. On the other hand, net-metering provides for compensation in EGP against any excess electricity fed by the offtaker into the grid. The maximum capacity per net-metering facility is capped at 20 MW.

4 Consents and Permits

4.1 What are the primary consents and permits required to construct, commission and operate utility-scale renewable energy facilities?

Electricity generation projects, including from renewable sources, must be established in the form of an Egyptian joint stock company under the Investment Law. The companies must then obtain a licence from EgyptERA for power generation, as well as a building permit for the construction of any concrete or fixed installations. An environmental impact assessment, approved by the Egyptian Environmental Affairs Agency (EEAA), is also required. The generation licence and approval of the EEAA must be maintained as valid and effective for the entire duration of the project.

The EPC contractors of renewables plants are typically required to register with the Egyptian Federation for Construction and Building Contractors under the relevant work categories. Furthermore, the operation and maintenance (O&M) contractors of renewables plants are typically required to register with the Egyptian Federation for Construction and Building Contractors under the relevant work category.

4.2 What are the primary consents and permits required to construct, commission and operate distributed/C&I renewable energy facilities?

The same licences apply for distributed renewable energy facilities, excluding small-scale facilities owned and built directly by the offtaker for self-consumption and off-grid projects not exceeding 500 kWp, for which an exemption may be granted by EgyptERA from the issuance of the power generation licence.

4.3 What are the requirements for renewable energy facilities to be connected to and access the transmission network(s)?

A grid study must be carried out by EETC ahead of any renewables project being connected to the transmission network.

4.4 What are the requirements for renewable energy facilities to be connected to and access the distribution network(s)?

Similarly, a grid study must be carried out by the relevant distribution company ahead of any renewables project being connected to the distribution network, or an independent study approved by EgyptERA.

4.5 Are microgrids able to operate? If so, what is the legislative basis and are there any financial or regulatory incentives available to promote investment in microgrids?

Microgrids are able to operate in Egypt. They are essentially found in remote areas not connected to the grid, or in some tourist resorts, etc.

4.6 Are there health, safety and environment laws/regulations which should be considered in relation to specific types of renewable energy or which may limit the deployment of specific types of renewable energy?

Standard health, safety and environmental rules are found in Egypt and apply to renewable energy projects without distinction, and are not limiting to the deployment of projects.

5 Storage

5.1 What is the legal and regulatory framework which applies to energy storage and specifically the storage of renewable energy?

There is no dedicated legislation regulating energy storage or specifically renewable energy storage in Egypt.

5.2 Are there any financial or regulatory incentives available to promote the storage of renewable energy?

There are no financial or regulatory incentives available to promote the storage of renewable energy. However, tenders for CSP projects with storage are being launched by the Egyptian government for limited capacities, most recently for development in the West Nile area in Minya, southern Egypt. The process is currently pending. The installed CSP capacity in Egypt as of March 2020 was 140 MW.

6 Foreign Investment and International Obligations

6.1 Are there any special requirements or limitations on foreign investors investing in renewable energy projects?

Foreign investors are encouraged to invest in renewable energy projects in Egypt. They are required to set up a project company in Egypt to develop their projects, without any nationality requirements with respect to either shareholding or management. In effect, most private players in the Egyptian renewables market are ultimately foreign investors.

6.2 Are there any currency exchange restrictions or restrictions on the transfer of funds derived from investment in renewable energy projects?

There are no currency exchange restrictions or restrictions on the transfer of funds derived from investment in renewable energy projects in the country. On the contrary, both are protected under the Investment Law. In practice, however, investors may at times be challenged by short-term limitations related to liquidity shortages.

6.3 Are there any employment limitations or requirements which may impact on foreign investment in renewable energy projects?

Foreign nationals may only be employed in Egypt if they are issued a work and residence permit (article 28 Labour Law and article 1 Decree no. 146/2019). By way of exception, an employee

on short assignments in Egypt (one to a few days at most) may obtain a written permission for work from the Ministry of Manpower and Immigration (MOM) in consideration for a fee equivalent to 10 per cent of the remuneration received in exchange for the work performed (article 4 Decree no. 146/2019). The fee paid will increase depending on the number of assignments that the employee will be carrying out. In general, the number of foreign employees may not exceed 10 per cent of the total number of employees hired by an employer (article 5 Decree no. 146/2019). This threshold may only be increased by virtue of a discretionary decision of a special committee within the MOM upon a justified request of the employer. Additional criteria are taken into account by the MOM when requested to issue a work permit (article 6 Decree no. 146/2019), including, among others: (i) that the foreign employee must have at least three years of relevant experience; (ii) that the foreign employee must have all licences required under the applicable laws and regulations to undertake the intended scope of work (if any); (iii) the country's economic need for foreign expertise and the employer's actual need of such expertise; (iv) the non-competition of local labour with equivalent expertise; (v) the possibility of employing two local assistants with adequate qualifications for foreign technicians; and (vi) whether the foreign employee is a permanent resident or was born in Egypt, since priority is given to these individuals.

6.4 Are there any limitations or requirements related to equipment and materials which may impact on foreign investment in renewable energy projects?

With the exception of mounting structures and cables in the solar power plants field, and high-voltage electric equipment and switchgear, Egypt is not considered to be a producer of main electricity generation plant equipment. For this reason, the government encourages the import of renewable energy equipment at a discounted unified customs rate of two per cent (compared with the typical rate of five per cent) and a reduced value-added tax of five per cent (compared with the typical rate of 14 per cent) applied to all equipment and machinery required for setting up the plants. In addition, EUR1 certificates permit renewable energy generation companies to import certain equipment, such as solar panels, manufactured in the EU at nil rate of import duty. On the other hand, the country generally also requires a certain percentage of local components in the projects that it tenders (typically around 30 per cent).

7 Competition and Antitrust

7.1 Which governmental authority or regulator is responsible for the regulation of competition and antitrust in the renewable energy sector?

EgyptERA is the main authority responsible for the regulation of competition and antitrust in the renewable energy sector.

7.2 What power or authority does the relevant governmental authority or regulator have to prohibit or take action in relation to anti-competitive practices?

According to the Electricity Law, EgyptERA is tasked with laying down the rules to be followed by all electricity utility stakeholders which guarantee fair competition, the principles of the determination of electricity tariffs, and the rules protecting offtakers' rights. It also determines the tariffs applicable to unqualified offtakers and grid users to ensure free market access and fair competition. In the event of a violation of these principles and rules, EgyptERA may, pursuant to articles 4(10) and 23 of the Electricity Law, (i) issue written warnings to the violator for the suspension or cancellation of their licence, (ii) order the removal of the violation at the expense of the violator, (iii) suspend the licence for a maximum of one year, or (iv) cancel the licence and proceed with the operation of the facility at the expense of the violator.

7.3 What are the key criteria applied by the relevant governmental authority or regulator to determine whether a practice is anti-competitive?

EgyptERA's role is to encourage investment in electricity generation, distribution and transmission (including from renewable sources) within a framework characterised by fair competition, to safeguard the interests of the offtakers and the electricity utility stakeholders, as well as to make information about the sector available in a transparent and fair manner without any discrimination. Any act or omission violating these principles may be censored by the regulator.

8 Dispute Resolution

8.1 Provide a short summary of the dispute resolution framework (statutory or contractual) that typically applies in the renewable energy sector, including procedures applying in the context of disputes between any applicable government authority/regulator and the private sector.

The Executive Regulations of the Electricity Law provide for the establishment of a committee within EgyptERA for the settlement of disputes arising between the electric utility parties in relation to the utility's activities. The committee is chaired by a state councillor and comprises technical, financial, commercial and legal members, as nominated by Prime Ministerial Decree for a one-time renewable term of one year. The committee's decisions must be succinctly justified and issued within a period not exceeding 60 days from the date of the substantiated claim. The decision is then presented to the board of EgyptERA for ratification and notified to the parties.

Typical power purchase agreements entered into with EETC as offtaker would, however, provide for international arbitration clauses referring disputes to arbitral tribunals constituted in accordance with the Rules of the Cairo Regional Centre for International Commercial Arbitration and seated outside Egypt. According to the Egyptian Arbitration Law no. 27/1994 (published on 21 April 1994) applicable to most such agreements, the consent of the MOERE on the arbitration clause is required for it to be valid.

8.2 Are alternative dispute resolution or tiered dispute resolution clauses common in the renewable energy sector?

A form of amicable settlement would typically be provided for before arbitration proceedings could be initiated.

8.3 What interim or emergency relief can the courts grant?

The Egyptian Arbitration Law grants an arbitral tribunal the right to award interim relief or a provisional measure only if

the parties have agreed to confer such power upon the arbitral tribunal. The same power could also be conferred upon the arbitral tribunal by agreeing to the application of institutional rules that provide for such default power. However, the law does not list the types of relief available to arbitrators; nonetheless, subject to the parties' agreement, the arbitral tribunal will have the discretion to order any type of interim relief or provisional measures that are warranted under the applicable law. Alternatively, a party may seek to obtain such interim relief or provisional measure directly from the competent Egyptian court, without this being considered a waiver of the arbitration agreement.

8.4 Is your jurisdiction a party to and has it ratified the New York Convention on the Recognition and Enforcement of Foreign Arbitral Awards and/or the Convention on the Settlement of Investment Disputes between States and Nationals of Other States and/or any significant regional treaty for the recognition and enforcement of judgments and/or arbitral awards?

Egypt consented to joining the New York Convention on the Recognition and Enforcement of Foreign Arbitral Awards of 1958 on 2 February 1959, and ratified it on 9 March 1959, with the convention entering into force as part of the Egyptian legal system on 7 June 1959 without any reservation or declaration. Egypt also ratified the Washington Convention on the Settlement of Investment Disputes between States and Nationals of Other States of 1965 (the ICSID Convention) on 3 May 1972. Egypt is also a party to several multilateral and bilateral treaties on arbitration and investment.

8.5 Are there any specific difficulties (whether as a matter of law or practice) in litigating, or seeking to enforce judgments or awards, against government authorities or the state?

There is no difficulty in litigating or seeking to enforce judgments or awards against Egyptian governmental authorities or the state. It must be noted, however, that the arbitration clause in an administrative agreement involving public authorities must be specifically approved and signed by the competent Minister for the arbitration clause to be valid, and delegation in this regard is prohibited. This requirement is a matter of public policy.

8.6 Are there examples where foreign investors in the renewable energy sector have successfully obtained domestic judgments or arbitral awards seated in your jurisdiction against government authorities or the state?

There are no such examples in the renewable energy sector.

9 Updates and Recent Developments

9.1 Please provide a summary of any recent cases, new legislation and regulations, policy announcements, trends and developments in renewables in your jurisdiction.

Due to the existing renewables capacity and the recent reduction of electricity prices for the industrial sector, and as a result of the COVID-19 pandemic, it is expected that the development of the renewable energy generation process will continue to be slow. However, it is anticipated that new developments will continue to grow in diverse renewables applications, such as electric mobility, solar irrigation and renewable-powered water projects. We are currently awaiting the complete unbundling of the Egyptian electricity market and the full separation of EETC from EEHC. The revamp of the legislation governing small- and medium-scale renewable generation and the electricity pricing mechanism is also overdue.

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1 Overview of the Renewable Energy Sector

1.1 What is the basis of renewable energy policy and regulation in your jurisdiction and is there a statutory definition of 'renewable energy', 'clean energy' or equivalent terminology?

Renewable Energy is mainly regulated by the Energy Code, as well as by the Environmental Code, the Town Planning Code, the General Local Authorities Code, the Code of Public Procurement and the General Code on Public Property. France must comply with the "Clean energy for all Europeans" package, which consists of four directives and four regulations adopted in May 2018, December 2018 and June 2019.

The basis of the French renewable energy policy is the fulfilment of the Multiannual Energy Program (**PPE**), a binding operational tool for public authorities created by Law No. 2015-992 on energy transition and green growth (**LTECV**). This law sets out ambitious national energy objectives, which were adjusted by Law No. 2019-1147 on Energy and Climate.

The purpose of the PPE, which was last amended by Decree No. 2020-456 of 21 April 2020, is to map out the French Government's course of action with regard to energy in the next 10 years, with the objective of making France a carbon-neutral country by 2050. The PPE covers two five-year periods, 2019–2023 and 2024–2028, with a key target to attain 50% renewable energy by 2035.

The PPE applies to mainland France and the so-called non-interconnected zones (**ZNI**), which include Corsica and overseas territories.

Article L 211-2 of the Energy Code defines renewable energy as energy produced from renewable non-fossil sources, i.e. wind energy, solar thermal or photovoltaic (**PV**) energy, geothermal energy, ambient energy, tidal energy, wave and other marine energy, hydroelectric energy, biomass, landfill gas, gas from wastewater treatment plants and biogas.

1.2 Describe the main participants in the renewable energy sector and the roles which they each perform.

The key governmental institution is the Ministry for the Ecological Transition (**MTE**), supported by the Directorate General of Energy and Climate. The MTE is represented in each region by Regional Directorates for Environment, Planning and Housing, which aim to promote sustainable economic development at the regional level.

The local authorities are in charge of turning the national objectives into concrete action and taking various local actions. Through the regional schemes for spatial planning, sustainable and territorial balance and the Local Climate Air Energy Plans, regions and inter-municipal authorities are invited to define their energy mix evolution until 2050, taking into account the objectives of the PPE, and to commit to short-term actions to achieve it.

The implementation of the French renewable energy policy is also driven by the Environment and Energy Management Agency (**ADEME**), which is a public agency reporting to the MTE. ADEME acts both upstream of the value chain (support for research programmes) and downstream (support for the roll-out phase).

Regulatory bodies

The Energy Regulatory Commission (**CRE**) is an independent public body regulating French energy markets, including energy derived from renewable sources.

The French Competition Authority (**FCA**) is an independent public body in charge of supervising anti-competitive practices and controlling mergers in any economic sector, including energy.

Transmission and distribution

Transmission and distribution are public service activities supervised by the CRE.

Réseau de Transport d'Electricité (**RTE**), the only power transmission system operator in France, is responsible for transporting electricity to customers on behalf of suppliers and developing the networks.

Enedis is the main distribution network operator for France. Most of the renewable energy installations are connected to the Enedis network. The rest are managed by local distribution companies (**ELD**). The ZNIs, including overseas territories (except Mayotte) and Corsica, benefit from a special distribution network provided by EDF SEI. In Mayotte, Electricité de Mayotte controls energy production and distribution.

Developers and producers

The main green energy developers and producers in France and French overseas territories are EDF EN, Engie and TotalEnergies Renouvelables. Other key players are French and foreign companies such as Akuo Energy, Axpo, Baywa, Boralex, CNR, EDP Renovaveis, EnBW (Valeco), ENEL, FBJB, Iberdrola, NEOEN, RES, RWE, Sun'R, Valorem, Vattenfall or Voltalia.

Trading platforms and aggregators

With the introduction of the direct marketing scheme, EDF as well as actors of the wholesale market, namely trading platforms

(Epex Spot and Nord Pool for spot transactions and EEX for derivatives) and aggregators (Agregio, Engie, Gazel Energie (previously Uniper), Statkraft, Vattenfall, etc.), are the main participants in the purchase and sale market. The risk management is, in particular, delegated to aggregators.

Renewable energy suppliers
Apart from EDF, various alternative suppliers provide energy from renewable sources such as ekWateur, Enercoop, Engie, ilek, Planete Oui or TotalEnergies.

Other participants
Various non-profit associations are also playing a key role in the promotion of renewable energy, such as the Renewable Energy Association, the Wind Energy association, the Solar Association, the Network for Energy Transition and the French German Office for Energy Transition (**OFATE**).

1.3 Describe the government's role in the ownership and development of renewable energy and any policy commitments towards renewable energy, including applicable renewable energy targets.

The PPE plays a crucial role in the development of renewable energy. Its implementation decrees set objectives for the launching of calls for tenders to be achieved by 2023 and 2028:

- For solar energy: 20.1GW for 2023; and 35.1–44GW for 2028.
- For onshore wind energy: 24.1GW for 2023; and 33.2–34.7GW for 2028.
- For offshore wind energy (including floating offshore wind): 2.4GW for 2023; and 5.2–6.2GW for 2028.
- For hydroelectricity (including tidal energy): 25.7GW for 2023; and 26.4–26.7GW for 2028.
- For biomass: 145TWh for 2023; and 157–169TWh for 2028.
- For geothermal energy: 2.9TWh for 2023; and 4–5.2TWh for 2028.
- The PPE also aims to promote alternative sources, with a focus on hydrogen and power-to-gas, including a target of 660,000 electric cars by 2023 and 3,000,000 by 2028.

Most of the renewable energy facilities are owned by private developers. However, hydropower generation facilities greater than 4.5MW in capacity are operated under concessions awarded by the French State. Among these plants, more than 80% are operated by EDF and 15% by Engie. Around 150 concessions out of 400 will reach their term in 2023.

2 Renewable Energy Market

2.1 Describe the market for renewable energy in your jurisdiction. What are the main types of renewable energy deployed and what are the trends in terms of technology preference and size of facility?

With more than 25.7GW installed in France (46% of renewable energy production capacity), hydropower remains the leading renewable source of electricity, and production even increased by 9.3% in 2020 compared with 2019.

In 2020, 51.9% of renewable energy production capacity was of wind or solar origin (17.6GW from wind power and 10.3GW from solar power). The offshore deployment of wind projects, as well as repowering, will also contribute to increasing the installed capacity.

The bioenergy power generation fleet exceeds 2.1GW. All sectors combined, the growth in the renewable energy generation portfolio reached 55.9GW on 31 December 2020, which is 26.9% of the power production capacity in France.

2.2 What role does the energy transition have in the level of commitment to, and investment in, renewables? What are the main drivers for change?

The PPE aims to increase the share of renewable energy and to reduce nuclear power from 75% to 50% by 2035. Technological improvements have contributed to making solar and wind power installations more competitive compared to nuclear energy. The National Low-Carbon Strategy (**SNBC**) also aims at reducing greenhouse gas emissions and diversifying the energy mix in order to ensure security of supply and reduce dependence on imports.

2.3 What role, if any, has civil society played in the promotion of renewable energy?

The PPE and SNBC have been subject to a prior consultation process, including a public debate organised by the National Commission for Public Debate. Public debates are also launched for offshore wind projects.

The citizen involvement in the energy transition is encouraged by crowdfunding. Several platforms (such as Enerfip, Engie Green, Lendopolis, Lumo, etc.) are collecting funds for the financing of renewable energy projects.

Local renewable energy project initiatives are also promoted through "renewable energy communities", which is defined as the economic and operational participation and/or ownership by citizens or members of a defined community in a renewable energy project pursuant to Article L 211-3-2 of the Energy Code.

2.4 What is the legal and regulatory framework for the generation, transmission and distribution of renewable energy?

The generation, transmission and distribution of renewable energy are notably regulated by the Energy Code, the Environmental Code and the Town Planning Code (please see question 4.1).

2.5 What are the main challenges that limit investment in, and development of, renewable energy projects?

Supremacy of nuclear energy
The main obstacle to the development of renewable energy is the competitive price of electricity produced via nuclear plants.

Length of the administrative process
Another obstacle is the complexity and length of the administrative process to obtain the required construction and environmental permits. The new single Environmental Authorisation is intended to give more visibility to operators as to the upstream phase of the projects.

The scarcity of large-scale onshore wind projects is also due to regulatory barriers, and especially to the size constraints related to civil and military aviation and distance constraints related to military radar.

Grid connection
In order to facilitate the grid connection procedure, RTE has put in place the Regional Renewable Energy Grid Connection

Scheme which enables the connection of renewable energy to the grid in a coordinated and cost-effective way for each region.

Litigation and recourse

Compared to other forms of renewable energy, wind farms draw most of the criticism and opposition from the public. In case of litigation against an onshore wind project, in order to simplify and speed up the process, the Administrative Courts of Appeal rule at first and last instance. For offshore wind projects, the State Council has exclusive jurisdiction to settle litigations.

2.6 How are large utility-scale renewable power projects typically tendered?

Renewable energy tenders are used for wind, solar, biomass, biogas and hydropower projects, in compliance with Articles L 311-10 and R 311-13 of the Energy Code. The PPE foresees provisional timetables for calls for tenders. The CRE is in charge of drawing up the tendering documentation and organising the tender procedure. The specifications are published on the CRE website and a request for qualification is published in the *Official Journal of the European Union*. Candidates' questions and their related answers are available on the CRE website to ensure that all candidates are put on an equal footing in terms of available information. The CRE makes the first selection of candidates and the final selection is made by the Ministry of Energy. Candidates can request access to their instruction file and are informed of the reason of their rejection or acceptance.

Winning candidates receive their operation permit, but also must obtain the other required authorisations.

Depending on the technology and size of the installation, the tender procedure may be implemented in two different ways:

- The **classic tender** procedure: The tender specifications will include a description of the characteristics of the call for tender, the foreseen output, technical, economic and financial conditions, including, *inter alia*, the duration and financial terms of the Contract for Difference (**CfD**).
- The **competitive dialogue** procedure: The competitive dialogue procedure was used, for instance, in the context of the third offshore wind farm tender, for the selection of the Dunkirk offshore wind farm developer. By enabling discussion between the candidates and the administration, it has led to a better allocation of the risks and to lower prices. At the end of the dialogue phase, the MTE invites the pre-selected candidates to submit their best and final offers within the deadline set out in the tender specifications.

By way of examples, the following calls for tenders have been issued:

Onshore wind

The call for tender is mandatory for wind farms having at least seven wind turbines or one wind turbine exceeding 3MW.

The tender procedure launched in May 2017 was to run on six periods with a cumulative capacity of 3.382GW. Due to the COVID-19 crisis, a seventh and final period was set up and closed on 3 November 2020. Over the seven bidding periods, the CRE proposed a power-weighted average price of €63.1/MWh. Successful bidders will sign a CfD with EDF.

Offshore wind

A first call for tender was launched in 2011 on four areas:

- Fécamp (498MW), Courseulles-sur-Mer (450MW) and Saint-Nazaire (480MW), awarded to the consortium Eolien Maritime France, led by EDF Renouvelables.
- Saint-Brieuc (500MW), awarded to Ailes Marines consortium, comprising Iberdrola, Eole-RES and Caisse des dépôts et consignations (**CDC**).

Round 2 (2013) led to the award of two projects:

- Yeu and Noirmoutier (496MW) to the Eoliennes en Mer consortium, led by Engie, together with EDP Renewables and CDC.
- Treport (496MW), also awarded to the Eoliennes en Mer consortium.

Round 3 (2019) led to the award of the Dunkirk project (600 MW) to the Eoliennes en Mer de Dunkerque consortium, led by EDF Renouvelables together with Innogy SE and Enbridge.

Round 4 (2021) for the construction and operation of a wind farm (between 900 and 1,050MW) off the coast of Normandy is ongoing.

Floating wind

Regarding floating offshore wind, French key players and their partners are also active, with four 24MW projects already awarded, including those to consortiums led by:

- Engie, together with EDPR and CDC (Eolien Flottant Golfe du Lion).
- EDF Renouvelables (Provence Grand Large).

On 30 April 2021, the French Government launched a competitive tendering procedure for a 230–270MW floating wind farm project located in the South of Brittany. This will be the first of three 250MW projects to be auctioned over the next year. The next two will be located in the Mediterranean.

Solar energy

Tendering procedures are mandatory for PV installations on buildings with a peak power capacity greater than 100kW, as well as for all ground-mounted PV plants.

Special tenders with fixed tariffs are planned for innovative solar projects, for example agrophotovoltaics, carport schemes or building-integrated PV installations.

For the eighth period of the "CRE 4" call for tenders (11 rounds between February 2017 and June 2021), 45 projects were awarded (332MWp) at an average tariff of €57.4/MWh. Thirty-one self-consumption renewable production installations projects were awarded (9.8MWp) at an average premium paid of €13.8/MWh.

2.7 To what extent is your jurisdiction's energy demand met through domestic renewable power generation?

Renewable energy produced in France covers 25% of the electricity consumed year-to-year. This rate has reached 26.5% in the first quarter of 2020.

3 Sale of Renewable Energy and Financial Incentives

3.1 What is the legal and regulatory framework for the sale of utility-scale renewable power?

The French legal framework consists mainly in Articles L 314-1 to L 314-27 of the Energy Code. The sale of renewable energy was initially based on the power purchase obligation (**PPA**) mechanism with feed-in-tariff (**FIT**), by which the eligible producer concluded a PPA with EDF (or an ELD).

Since the LTECV law, the Energy Code sets forth a market-based premium mechanism whereby a CfD is signed with EDF, which includes a market-based premium that gradually replaced the FIT mechanism.

The premium mechanism is an *ex post* calculation equal to the difference between the target tariffs per kWh, and a reference tariff to which a management premium is added. The reference tariff is published by the CRE on a monthly basis.

Installations benefiting from an FIT PPA contract at the time of the entry into force of the premium mechanism will remain subject to the FIT PPA.

The sale of power is to be undertaken either on the EPEX Spot market through an aggregator, or under a sales contract entered into with an industrial purchaser for a pre-agreed period of time at a pre-agreed price, i.e. a Corporate PPA. In the first case, a contract is to be concluded with the aggregator, pursuant to which the aggregator purchases all kWh delivered at the delivery substation (**PDL**) as measured by a power meter controlled by Enedis. In the second case, all the power measured at the PDL by Enedis is to be acquired by the offtaker.

3.2 Are there financial or regulatory incentives available to promote investment in/sale of utility-scale renewable power?

There are no financial or regulatory incentives, other than through the above-mentioned support mechanisms. Since 2017, the main support mechanism is the market-based premium granted through an open window procedure or a competitive tender procedure. The open window market premium procedure is notably applicable to:

- Hydraulic plants with an installed capacity under 1MW.
- Biogas plants with an installed capacity between 500kW and 12MW.
- Wind power plants with a maximum of six wind turbine generators and an individual limit of 3MW per turbine.

For other types of plants, the signature of a CfD with EDF is only possible through the tender procedure, whereby the tariff for each winner results from the tender process.

The significant reduction in the production costs of wind and PV technologies will facilitate their development at a lower cost for the public budget. The results of recent tenders gave strike prices for guaranteed contracts close to €60/MWh for ground-based PV plants, €59.7/MWh for onshore wind power and the Dunkirk offshore wind tender reached a record level of €44/MWh.

3.3 What are the main sources of financing for the development of utility-scale renewable power projects?

The development of utility-scale renewable power projects is mainly financed by long-term bank debt granted notably by BNP Paribas, Crédit Agricole, Crédit Coopératif, Crédit Mutuel, BPCE Energeco, HSBC, Natixis, Société Générale, Unifergie, Nord LB, Saar LB, etc.

Specialised infrastructure funds are also key players in the financing of renewable energy projects such as Mirova or Omnes.

French public financial institutions Bpifrance (**BPI**), notably through its *France Investissement Energie Environnement* fund, and CDC, in particular through Banque des Territoires, are also highly involved in financing renewable power projects.

3.4 What is the legal and regulatory framework applicable to distributed/C&I renewable energy?

The Energy Code contains specific provisions for the construction of direct lines (Article L 343-1 *et seq.*), closed distribution networks (Article L 344-1) and building integrated networks (Article L 345-1). Those provisions are favourable to the development of local Corporate PPAs and self-consumption.

Articles L 315-1 *et seq.* of the Energy Code regulate individual self-consumption (electricity produced and consumed in a given location by one person) and collective self-consumption (electricity produced and consumed by several consumers and producers located on the same low voltage grid and linked through a legal entity).

Grid operators have the obligation to facilitate self-consumption subject to the payment of the Tariff for Use of Public Electricity Grid (**TURPE**), which is reduced for self-consumption with an installed capacity of less than 100kW per producer.

There is a distinction between partial self-consumption (the surplus output injected into the grid can be sold at a FIT) and total self-consumption (the surplus output injected into the grid cannot be valorised). There is no system of set-off against the power received from the grid (net metering).

3.5 Are there financial or regulatory incentives available to promote investment in distributed/C&I renewable energy facilities?

The development of distributed renewable facilities is largely based on public support mechanisms (FIT and calls for tender). Self-consumption projects of up to 100kW may also be eligible for an investment premium.

3.6 What are the main sources of financing for the development of distributed/C&I renewable energy facilities?

Renewable distributed energy facilities are mainly financed by commercial banks.

3.7 What is the legal and regulatory framework that applies for clean energy certificates/environmental attributes from renewable energy projects?

French Guarantees of Origin (**GO**) (Articles LL 314-14 *et seq.* of the Energy Code) are the only recognised system in France for the tracking of energy production from renewable sources. This system ensures that end consumers can verify the origin of the electricity they consume. Renewable energy with a production capacity of above 100kW must be registered on the French GO registry, which is managed by EEX upon appointment by the Minister in charge of Energy.

However, pursuant to Article L 314-14 of the Energy Code, GOs cannot be issued by a renewable energy producer having concluded an FIT or CfD with EDF.

3.8 Are there financial or regulatory incentives or mechanisms in place to promote the purchase of renewable energy by the private sector?

There is no specific incentive for private individuals to purchase electricity from renewable energy production.

4 Consents and Permits

4.1 What are the primary consents and permits required to construct, commission and operate utility-scale renewable energy facilities?

Operation permit

An operation permit issued by the MTE is required only for utility-scale renewable energy facilities above 50MW.

The operation permit is automatically granted to the successful bidder of a tender procedure.

Construction permit

Depending on the size and capacity of the project, the construction of renewable energy facilities may require a prior declaration (solar plants under 250kW) or a construction permit (ground-mounted PV plants above 250kWp) issued by the relevant public authorities.

When applicable, construction permits are merged into the Environmental Authorisation.

Environmental Authorisation

Since 1 March 2017, the Single Environmental Authorisation has merged a dozen authorisations governed by the Environmental Code (one authorisation for environmentally classified facilities and others for installations, plants, works and activities), the Forestry Code (land cleaning authorisation) and the Energy Code (operation permit).

For offshore wind farm projects, in addition to the Environmental Authorisation, a specific authorisation for the use of the maritime public domain must be obtained from the Prefect by means of the conclusion of a lease of the seabed with the State ("*concession d'utilisation du domaine public maritime*").

The envelop permit (as enacted in Article L 181-28-1 of the Environmental Code) eases the feasibility of fixed and floating offshore wind projects. The Environmental Authorisation and the authorisation for the use of the maritime public domain can define variable features for the concerned projects: number, size and installed capacity of wind turbines; or their organisation in the dedicated area. The operator may change a project within the limits set in advance to benefit from the latest technological developments; however, it must stay within the limits of the authorisations granted.

4.2 What are the primary consents and permits required to construct, commission and operate distributed/C&I renewable energy facilities?

The applicable laws and regulations are the same as those for utility-scale renewable energy facilities (please see question 4.1).

4.3 What are the requirements for renewable energy facilities to be connected to and access the transmission network(s)?

Access by private power production sites to the public transport and distribution grids is guaranteed by virtue of Article L 111-91 of the Energy Code.

Following the acceptance of the Technical and Financial Proposal issued by the grid operator, the parties sign the grid connection agreement setting out the technical conditions, final costs and timing for connection.

Thereafter, the producer and the grid operator enter into several agreements:

- A grid access agreement establishing the injection capacity and disconnection limitations, as well as the related liabilities of each of the parties.
- An operation agreement, which contains the operation rules of the power plant.
- An agreement for the identification of the balance responsible entity, which will aim at ensuring that the electricity injected into the public grid is balanced with the consumption of electricity consumers.

A simplified procedure is applicable to small projects under 36kVA, with the signature of a Connection, Access and Operation Contract with Enedis.

With respect to offshore wind, a set of agreements, including the connection agreement, must be executed between the producer and RTE: a grid access agreement; an operation agreement; a testing agreement; and a performance agreement (which determines the technical, legal and financial conditions relating to the technical performance of the installation).

4.4 What are the requirements for renewable energy facilities to be connected to and access the distribution network(s)?

The applicable laws and regulations are the same as those for utility-scale renewable energy facilities (please see question 4.3).

4.5 Are microgrids able to operate? If so, what is the legislative basis and are there any financial or regulatory incentives available to promote investment in microgrids?

A number of microgrids operate in France, particularly in overseas areas where connection to the main grid is not available. This type of technology enables the powering of isolated communities and the incorporation of renewable energy into the energy mix of ZNIs in a sustainable way. Given their special features, island energy systems are a good testing ground for smart grids.

The laureates (Flexgrid, Smile and You&Grid) of the 2015 call for tenders for the large-scale deployment of smart grids are implementing smart grids, particularly in the field of integrating renewable energy into transmission and grid management.

4.6 Are there health, safety and environment laws/regulations which should be considered in relation to specific types of renewable energy or which may limit the deployment of specific types of renewable energy?

There are no specific health, safety and environmental laws/regulations to consider for the deployment of specific types of renewable energy.

5 Storage

5.1 What is the legal and regulatory framework which applies to energy storage and specifically the storage of renewable energy?

According to Articles D 141-12-5, D 142-9-2, D 142-9-3 and D 142-9-5 of the Energy Code, an electrical energy storage facility is defined as "*a set of stationary electricity storage equipment enabling electrical energy to be stored in another form and then returned as electrical energy while being coupled to the public electricity grid. The technologies used in this equipment include pumped energy transfer stations, compressed air storage, storage by converting electricity into hydrogen, electrochemical batteries and flywheels*".

The operators of certain types of storage facilities are considered "dual users" of the grid with regard to the TURPE. Article D 315-5 of the Energy Code states that an electricity storage unit produced in the context of a self-consumption operation alternately qualifies the operator of the infrastructure as a producer and a consumer, which implies that he is twice subject to the TURPE.

For electricity storage facilities in ZNIs, the costs of storage facilities managed by the grid operator are compensated through the contribution to the public electricity service. The PPE has not set any targets for electric storage until 2023, except for hydroelectric storage.

With regard to hydroelectricity, the PPE only plans to take steps by 2023 to permit the development of electricity pumping stations (**STEPs**) for a potential of 1.5GW, identified with a view to commissioning the installations between 2030 and 2035. This would be in addition to the 4.3GW of STEPs already in operation and 13GW of existing hydraulic dams.

5.2 Are there any financial or regulatory incentives available to promote the storage of renewable energy?

The long-term call for tenders (**AOLT**), launched by the MTE on 12 June 2019, organised by the transmission system operator RTE with respect to the French capacity mechanism and open to all non-carbon technologies, is focused on storage.

The aim of this AOLT is to enable the development of capacities to secure electricity supply in the long term. The successful bidders will be ensured revenue stability over seven-year periods starting in 2020, 2021, 2022 and 2023, respectively, with guaranteed prices during such periods under the capacity mechanism.

Voltalis, BHC, CSE Volta and ADF7 are among the successful bidders of the 2021–2027 and 2022–2028 AOLT.

6 Foreign Investment and International Obligations

6.1 Are there any special requirements or limitations on foreign investors investing in renewable energy projects?

The French Monetary and Financial Code (Article L 151-3) has established a foreign direct investment screening regime under which any foreign investor who wants to invest in sensitive business sectors in France must obtain prior approval from the French Ministry of Economy and Finance. The list of sensitive business sectors includes, *inter alia*, the integrity, security or continuity of the supply of energy.

Renewable energy is, therefore, among the sectors in which investors need a government approval to reach a specific threshold: a majority stake for EU investors; and one-third of the equity for non-EU investors.

Due to COVID-19, the threshold triggering the screening for sensitive listed companies (except for intra-EU/EEA takeovers) has been lowered from 25% to 10% until at least 31 December 2021.

6.2 Are there any currency exchange restrictions or restrictions on the transfer of funds derived from investment in renewable energy projects?

There are no currency exchange restrictions or restrictions on the transfer of funds derived from investment in renewable energy projects.

6.3 Are there any employment limitations or requirements which may impact on foreign investment in renewable energy projects?

There are no employment limitations or requirements which may impact foreign investment in renewable energy projects.

6.4 Are there any limitations or requirements related to equipment and materials which may impact on foreign investment in renewable energy projects?

There are no limitations or requirements related to equipment and materials which may impact foreign investment in renewable energy projects.

7 Competition and Antitrust

7.1 Which governmental authority or regulator is responsible for the regulation of competition and antitrust in the renewable energy sector?

The CRE has a market regulation mission, facilitating the development of free and fair competition for the benefit of the final consumer.

The FCA is in charge of supervising anti-competitive practices.

The General Directorate for Competition Policy, Consumer Affairs and Fraud Control is a department of the Ministry of Economy which investigates anti-competitive practices. Among other duties, it ensures that electricity and gas suppliers comply with the requirements regarding contractual terms.

7.2 What power or authority does the relevant governmental authority or regulator have to prohibit or take action in relation to anti-competitive practices?

In case of infringements, the FCA may impose sanctions and issue injunctions. Each financial penalty imposed by the FCA shall be determined on the basis of the particulars of the case and the individual circumstances of each offender.

The law on restrictive competitive practices enables the Minister of Economy to act in defence of public economic policy and have practices or contractual clauses affecting the fairness of commercial relations punished by the courts.

7.3 What are the key criteria applied by the relevant governmental authority or regulator to determine whether a practice is anti-competitive?

Anti-competitive practices can be classified into two main categories:

- Cartels, when their purpose is to freeze the market, raise prices or share customers, in particular practices consisting of fixing prices with competitors or imposing a resale price on distributors.
- Abuses of dominant position, with three criteria to determine whether the practice is anti-competitive: (i) the existence of a dominant position; (ii) the abusive use of this position; and (iii) a restrictive object or effect on competition on the market.

8 Dispute Resolution

8.1 Provide a short summary of the dispute resolution framework (statutory or contractual) that typically applies in the renewable energy sector, including procedures applying in the context of disputes between any applicable government authority/regulator and the private sector.

The Community Research and Development Information Service committee is an independent body of the CRE. It has

the power to impose sanctions on those in breach of the Energy Code provisions and to settle disputes related to the access and use of public electricity grids and natural gas networks.

The National Energy Mediator is an independent public body which offers resolutions to conflicts between energy companies and consumers.

The Administrative Courts of Appeal are competent for disputes relating to authorisations or refusals applying to onshore wind facilities. The decisions of these courts can be appealed before the State Council.

The State Council settles disputes in relation to offshore renewable energy facilities.

8.2 Are alternative dispute resolution or tiered dispute resolution clauses common in the renewable energy sector?

For disputes between operators, depending on the nationality, either the Commercial Courts will be competent, or an arbitration clause may be inserted in the contract. Arbitration clauses are frequent in contracts where a party is not French. Alternative dispute resolution clauses are common in the context of Corporate PPA.

8.3 What interim or emergency relief can the courts grant?

The Administrative Court may grant interim injunction and suspensions as an accelerated procedure which results in a rapid but provisional decision pending a judgment.

8.4 Is your jurisdiction a party to and has it ratified the New York Convention on the Recognition and Enforcement of Foreign Arbitral Awards and/or the Convention on the Settlement of Investment Disputes between States and Nationals of Other States and/or any significant regional treaty for the recognition and enforcement of judgments and/or arbitral awards?

Yes, France has ratified the New York Convention and the ICSID Convention.

8.5 Are there any specific difficulties (whether as a matter of law or practice) in litigating, or seeking to enforce judgments or awards, against government authorities or the state?

There are no specific difficulties in litigating or seeking to enforce judgments or awards against government authorities or the State.

8.6 Are there examples where foreign investors in the renewable energy sector have successfully obtained domestic judgments or arbitral awards seated in your jurisdiction against government authorities or the state?

We are unaware of any instances where a foreign investor was able to successfully obtain domestic judgments or arbitral awards against government authorities or the State in the context of renewable energy projects; however, there are prominent examples in the infrastructure sector.

9 Updates and Recent Developments

9.1 Please provide a summary of any recent cases, new legislation and regulations, policy announcements, trends and developments in renewables in your jurisdiction.

COVID-19 undoubtedly affected renewable energy investment levels in 2020. However, large energy utility companies have continued to secure their position on the French market.

French retroactive solar tariff cuts

France's 2021 Finance Act will impose tariff cuts on 800 PV PPA granted under the former Tariff Order of 2006 and 2010. The new tariff will be applicable to the ongoing PPA unless the producer files with the CRE an application to benefit from the safeguard clause against excessively low FITs to preserve the position of existing projects. The producer may also apply for a modulated tariff or an extension of the term of the PPA.

French offshore wind market growing

France is positioning itself in a growing European offshore wind market. Three projects awarded in 2011 are now under construction (Saint-Nazaire, Fécamp and Saint-Brieuc) and will be operational between 2022 and 2027.

Corporate PPA

The trend for Corporate PPA is visible with several deals signed such as: PPA between the airport group ADP and Urbasolar; PPA between Voltalia and Auchan Retail; PPA between SNCF and RES; PPA between Orange and Boralex; and PPA between Solvay and Fnac Darty distribution group in France relating to the production of a wind farm operated by Valeco in Occitania.

New legal framework for hydrogen

France develops hydrogen as a power source. Ordinance n° 2021-167 (17 February 2021), as enacted in Book VIII of the Energy Code, defines three types of hydrogen that are subject to specific regulations (renewable, low-carbon and carbonaceous) and the associated guarantees of traceability. This new regulation leads the way to public funding for renewable and low-carbon hydrogen production. It contains a support mechanism for hydrogen production by water electrolysis.

ADEME has launched a call for tenders "*Ecosystèmes territoriaux hydrogène*" over the period 2021–2023, to support investments in hydrogen production/distribution infrastructures. A second call for tenders "*Briques technologiques et démonstrateurs hydrogène*" supports innovation works on hydrogen production and transport.

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Stéphane is the Head of the Export Finance Working Group of the French Renewable Energy Federation (*Syndicat des énergies renouvelables*). This official role leads him to deliver notes, views and analysis to the renewable energy community in France, including developers, financiers and industrial equipment producers. He is currently designing new support schemes with the French Treasury, export credit agency (BPI) and development banks (AFD and Proparco).
The Legal 500 ranks Stéphane in Project Finance, Construction and Energy, and has also singled him out as a leading individual in Energy.

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Founded in 1972 in Paris, DS Avocats has 22 offices across four continents. Our 400 legal professionals provide legal and tax advice, as well as litigation services, in key areas of business law, including, in particular, projects development, corporate, finance, construction, competition and regulatory expertise in the energy sector.
We have a long track-record advising on innovative conventional, nuclear and renewable energy projects. The size of our energy team, with 15 experts in Paris alone, allows us to cover the full range of expertise needed for energy projects development, finance, acquisition and disposal. Thanks to our long-standing market presence and breadth of knowledge, we are active on most of the key transactions in France.
Beyond France, our teams regularly advise leading French and international utilities, developers, investors and State entities on their energy projects in Africa, Asia, Europe and Latin America, where DS offices are active in the energy sector.

We also participate in the renewable energy business development through active membership in professional renewable energy organisations, both in France and internationally.

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POSSER SPIETH WOLFERS & PARTNERS

1 Overview of the Renewable Energy Sector

1.1 What is the basis of renewable energy policy and regulation in your jurisdiction and is there a statutory definition of 'renewable energy', 'clean energy' or equivalent terminology?

Renewable energy policy and regulation in Germany is primarily governed by federal law and defined by the Federal Government. The term "renewable energy" covers hydropower (including wave, tidal, salinity gradient and marine current energy), wind energy, solar energy, geothermal energy as well as energy from biomass (including biogas, biomethane, landfill and sewage treatment gas and gas from biologically degradable waste), pursuant to the German Renewable Energy Act (*Erneuerbare-Energien-Gesetz*, EEG).

1.2 Describe the main participants in the renewable energy sector and the roles which they each perform.

The main participants in the renewable energy sector are private entities, i.e. the operators of renewable energy facilities (*Anlagenbetreiber*) – both utility-scale and distribution-scale – electricity network operators (*Netzbetreiber*) and electricity suppliers (*Elektrizitätsversorgungsunternehmen*).

The regulatory framework for the renewable energy sector is mainly determined on the federal level, especially by the Federal Ministry for Economic Affairs and Energy (*Bundesministerium für Wirtschaft und Energie*) which defines the political agenda and drafts the relevant legislation in the field of renewables. The main regulatory actors in the sector of renewable energy are the federal authorities.

The Federal Network Agency (*Bundesnetzagentur*, BNetzA) is the primary authority responsible for the regulation of the electricity (and gas) networks in Germany. Its main tasks regarding renewable energy projects include the monitoring of the development of renewable energy in Germany, conducting tendering procedures for new renewable energy projects (please see question 2.6) as well as guaranteeing non-discriminatory connection and access to the electricity networks (please see questions 4.3 and 4.4).

Regarding the planning, permitting and operation of offshore wind facilities in the Exclusive Economic Zone, the responsible authority is the Federal Maritime and Hydrographic Agency (*Bundesamt für Seeschifffahrt und Hydrographie*, BSH). Regarding consents and permits for renewable energy facilities, please see questions 4.1 and 4.2.

1.3 Describe the government's role in the ownership and development of renewable energy and any policy commitments towards renewable energy, including applicable renewable energy targets.

The Federal Government plays an active role in the development of renewable energy projects in Germany and seeks to provide incentives for the generation of electricity from renewable energy sources (please see question 3.2). With the withdrawal from nuclear energy already well underway, Germany has also decided to phase out coal plant capacities and to end coal-fired power generation completely by 2038. It is, therefore, a fundamental political aim to increase the amount of renewable energy.

In 2021, the Federal Government further increased the Germany-wide renewable energy targets for the development of renewable energy. According to the EEG, the amount of electricity generated from renewable energy sources in the gross electricity consumption shall increase to 65% by 2030. By 2050, all energy generated and consumed in Germany shall be greenhouse gas neutral. Under the revised EEG, until 2030, Germany shall achieve a generation capacity of 71 GW onshore wind, 100 GW solar power and 8.4 GW biomass. The Offshore Wind Energy Act (*Windenergie-auf-See-Gesetz*, WindSeeG) was also amended in 2021 and provides for more ambitious targets for offshore wind generation capacity of 20 GW by 2020 and 40 GW by 2040.

Further energy targets are defined by the Federal Climate Action Plan 2050 (*Klimaschutzplan* 2050), which aims to reduce greenhouse gas emissions and seeks to fully decarbonise the energy supply in Germany by 2050. In early 2021, the Federal Climate Protection Act (*Bundes-Klimaschutzgesetz*) was amended to enshrine a greenhouse gas reduction of 65% by 2030 compared to 1990 and 88% by 2040, and to reach carbon neutrality by 2045 (see question 2.3).

Energy targets for Germany are also defined by the EU; the EU target for Germany 2020 of 18% of renewables in its annual gross energy consumption was achieved (19.6% by 2020). The current EU target for 2030 for Germany amounts to 30%. The Federal Government adopted the Integrated National Energy and Climate Plan 2021 (*Nationaler Energie- und Klima-Plan*) to comply with the 30% target.

2 Renewable Energy Market

2.1 Describe the market for renewable energy in your jurisdiction. What are the main types of renewable energy deployed and what are the trends in terms of technology preference and size of facility?

Renewable energy is at the core of the German energy transition (*Energiewende*). The share of renewables in the gross electric

power generation in 2020 was 44.4%: onshore wind accounted for 18.7%; solar power for 8.9%; biomass for 7.7%; offshore wind for 4.8%; and hydropower for 3.3%. In recent years, wind power has become the dominant source of growth in renewable energy production in Germany. In 2020, onshore and offshore wind power together contributed more than 50% of Germany's electricity production from renewables.

Trends in terms of technology can be identified regarding the development of offshore wind, which in 2020 saw an increase of the expansion target by 5 GW to 20 GW until 2030 (and to 40 GW by 2040). Moreover, further steps can be expected to facilitate the development of onshore wind facilities as well as the usage of decentralised solar power facilities.

2.2 What role does the energy transition have in the level of commitment to, and investment in, renewables? What are the main drivers for change?

Germany has been an "early starter" in the adoption of renewable energy sources ever since the adoption of the EEG in 2000. Today, the main drivers for renewables are political climate targets, public opinion and the need to close the electricity supply gap, which stems from the nuclear phase-out by 2022 and the coal phase-out by 2038.

2.3 What role, if any, has civil society played in the promotion of renewable energy?

Civil society and public environmental awareness have played a major role in shaping German energy policy, from the protests against the use of nuclear energy in the 1980s to the recent Friday for Future rallies, thus maintaining high pressure on the government.

A relatively new phenomenon in the German jurisdiction is strategic climate change litigation by individuals and non-governmental organisations (NGOs) before German courts. In 2021, in a widely recognised landmark judgment, the Federal Constitutional Court (*Bundesverfassungsgericht*) held that the governing national emission reduction targets (a reduction of at least 55% by 2030 compared to 1990 levels) provided for in the Federal Climate Protection Act were not sufficient and required the federal legislator to set ambitious reduction targets beyond 2030. To comply with the judgment, the federal legislator has so far amended the emission reduction targets under the Federal Climate Protection Act, which may also accelerate the shift towards renewable energy.

2.4 What is the legal and regulatory framework for the generation, transmission and distribution of renewable energy?

The EEG defines specific national policy targets for the share of electricity from renewable energy sources in annual gross electricity consumption (please see question 1.3). It also provides specific regulation regarding the remuneration of electricity from renewable energy sources, as well as the connection of renewable energy facilities to the electricity network. Further, it stipulates the integration of renewable energy into the electricity supply system, the direct selling (*Direktvermarktung*) of electricity from renewable energy sources by the producers and the tendering procedures (*Ausschreibungen*) by which funding for electricity from renewable energy sources is determined.

The general regulatory framework for the energy sector, including electricity from renewable sources, is set out in the Energy Industry Act (*Energiewirtschaftsgesetz*). This covers access and connection to the electricity networks, network charges and rules for the operation, planning and expansion of the electricity network. For offshore wind facilities in the Exclusive Economic Zone of Germany, the planning, construction, operation and remuneration of, and tendering procedure for, offshore projects is set out in the WindSeeG. Further regulation covers specific aspects of the renewable energy sector, e.g. generation, transmission and remuneration of electricity from renewable energy sources.

2.5 What are the main challenges that limit investment in, and development of, renewable energy projects?

A major challenge for the development of renewable energy projects is the fact that the expansion of the transmission network capacity required to accommodate the feed-in of increasing amounts of renewable energy does not currently keep up with the realisation of renewable energy facilities. This applies most notably regarding the transportation of electricity generated in the north to the industrial consumption centres in the south of Germany. Accordingly, this increases the need for costly network management measures by the network operators, e.g. to avoid congestion.

The realisation of renewable energy facilities and the required network can also be hampered by lawsuits from affected residents, municipalities or environmental associations, which can hinder or prolong the permit and construction process.

2.6 How are large utility-scale renewable power projects typically tendered?

Tendering procedures apply regarding the remuneration of electricity generated from renewable energy sources. Annually, a pre-determined amount of new generation capacity is put out to tender pursuant to the EEG, in order to determine the size of the subsidies which are granted in ct/KWh for the feed-in of electricity into the network. The tender is awarded to the party who submits a bid for the lowest amount of subsidy.

Additional requirements apply to the right to construct and operate offshore wind projects in the Exclusive Economic Zone. The WindSeeG provides for a mandatory tendering system for the right to develop and realise an offshore wind project which simultaneously regulates the eligibility for remuneration for electricity generated in this facility. The award in the tender procedure entails the exclusive right to construct and operate an offshore wind facility in the tendered area of the Exclusive Economic Zone. Only operators who have been awarded the contract in the tender procedure may implement their project. In the past, this has led to fierce competition with regard to the areas and generation capacities put out to tender, resulting in zero-cent bids in which operators waived any kind of additional state subsidies in order to obtain the right to realise their project.

2.7 To what extent is your jurisdiction's energy demand met through domestic renewable power generation?

In 2020, 19.3% of gross energy consumption in Germany was fuelled by renewable sources. The main energy sources in 2020 were mineral oil (33.9%) and natural gas (26.6%). Further sources included lignite (8.1%), hard coal (7.6%) and nuclear power (6.0%). 72.0% of Germany's gross energy demand in 2019 was met through imports, mostly of mineral oil, natural gas and hard coal.

3 Sale of Renewable Energy and Financial Incentives

3.1 What is the legal and regulatory framework for the sale of utility-scale renewable power?

The sale of utility-scale renewable power is subject to the regulatory framework under the Energy Industry Act, which governs the rules for the use of the electricity network as well as network access. The sale of electricity is subject to agreements under private law. Generally, electricity from renewable energy sources is sold directly to a consumer or an electricity supplier, or at the electricity exchange.

The sale and purchase of electricity is subject to certain levies, such as the electricity tax based on the Electricity Tax Act (*Stromsteuergesetz*). If electricity is transported through the energy network, additional statutory charges and levies apply which are generally payable by the end-consumer.

3.2 Are there financial or regulatory incentives available to promote investment in/sale of utility-scale renewable power?

The EEG is the main instrument to promote the investment in and sale of electricity from renewable sources. In particular, it provides for a remuneration system for electricity generated from renewable energy. Further regulatory incentives apply regarding network connection and access (please see questions 4.3 and 4.4).

Renewable energy systems can be remunerated by a so-called market premium (*Marktprämie*) for electricity fed into the grid. The operators of the plants must continue to sell the electricity directly on the electricity market; however, the market premium will compensate the operator for the difference between the market price of electricity and the nominal value of the market premium. Both the nominal value of the market premium and the renewable energy eligible for remuneration are determined by tendering procedures (please see question 2.6). The market premium will be paid for a period of 20 years, starting at the date of the commissioning of the individual facility. Only in exceptional circumstances, i.e. for small or older facilities, can statutory fixed feed-in tariffs (*Einspeisevergütung*) apply. Operators may decide to forego subsidies and sell electricity exclusively by means of direct selling.

The remuneration of renewable energy facilities is financed by the so-called Renewable Energy Surcharge (*EEG-Umlage*), which is levied on every KW/h of electricity taken out of the electricity network and which is usually paid by the end-consumer. In 2021, the Federal Government took measures to reduce electricity costs for consumers by lowering the EEG levy using public funds.

3.3 What are the main sources of financing for the development of utility-scale renewable power projects?

The main sources of financing for renewable energy projects are private funds, as well as remuneration for electricity generation (please see question 3.2).

3.4 What is the legal and regulatory framework applicable to distributed/C&I renewable energy?

In principle, distributed/Commercial & Industrial (C&I) renewable energy projects are subject to the same legal and regulatory framework as utility-scale renewable power (please see question 3.1). However, exceptions apply for decentralised generation facilities and self supply facilities which can benefit from a reduction of statutory charges.

3.5 Are there financial or regulatory incentives available to promote investment in distributed/C&I renewable energy facilities?

Generally, the incentives for renewable energy facilities apply to distributed/C&I renewable energy facilities and utility facilities indiscriminately (please see question 3.2).

3.6 What are the main sources of financing for the development of distributed/C&I renewable energy facilities?

The sources of financing for distributed/C&I renewable energy facilities are generally the same as for utility facilities (please see question 3.3).

3.7 What is the legal and regulatory framework that applies for clean energy certificates/environmental attributes from renewable energy projects?

Energy suppliers are required to disclose (to the end-consumer) the composition of the electricity mix, in particular the use of "green energy" (*Stromkennzeichnung*).

Facility operators which sell electricity directly and without relying on remuneration under the Renewable Energy Act are also entitled to Guarantees of Origin certificates (*Herkunftsnachweise*) for the electricity which they feed into the grid. These certificates can be sold freely, e.g. for the purpose of an energy supplier to re-label the electricity purchased on the electricity exchange as "green energy".

3.8 Are there financial or regulatory incentives or mechanisms in place to promote the purchase of renewable energy by the private sector?

Generally, the Federal Government undertook steps to promote the usage of renewable energy in the sectors energy generation, industry, mobility, buildings and agriculture. In particular, incentives apply in the transport sector, which sets a binding minimum quota regarding the consumption of fuel from renewable energy sources. Furthermore, the usage of renewable energy for the production of so-called "green" hydrogen allows for an exemption of the hydrogen facility from state-induced charges and levies under the Renewable Energy Act as amended in 2021. Additional incentives are contained in the Renewable Heat Act (*Erneuerbare-Energien-Wärmegesetz*), which provides subsidies for heating systems using renewable energy, e.g. heat pumps for buildings.

4 Consents and Permits

4.1 What are the primary consents and permits required to construct, commission and operate utility-scale renewable energy facilities?

The requirements for the construction, commission and operation of utility-scale renewable energy facilities vary based on the generation technology and the renewable energy source.

The construction and operation of onshore wind facilities primarily require a permit pursuant to the Federal Immission Control Act (*Bundesimmissionsschutzgesetz*, *BImSchG*). An extensive

environmental impact assessment (*Umweltverträglichkeitsprüfung*), as well as a public participation procedure, are generally required for projects of 20 or more wind turbines.

Offshore wind facilities are subject to a plan approval (*Planfeststellungsbeschluss*) pursuant to the Offshore Wind Energy Act. Only projects granted a tender in the tendering procedures for offshore wind projects (please see question 2.6) are eligible for the plan approval procedure (*Planfeststellungsverfahren*), which requires documentation regarding construction planning, safety measures and environmental studies.

Solar power facilities require a construction permit (*Baugenehmigung*) pursuant to the Federal Building Code (*Baugesetzbuch*, *BauGB*) and the Building Codes of the Federal States (*Bauordnungen*). In particular, they must comply with regional planning and land-use planning (*Bebauungsplan*).

The construction and operation of hydropower facilities require a construction permit and are subject to a permit pursuant to the Federal Water Act (*Wasserhaushaltsgesetz*), which relates to the impounding of the respective waterbody as well as the discharge and then re-introduction of water used for energy generation. The permit usually requires an environmental impact assessment as well as a public participation procedure.

Geothermal facilities require a construction permit and a water law permit, as well as a permit under the Federal Mining Act (*Bundesberggesetz*); the permit procedure can necessitate a formal plan approval procedure including public participation and an environmental impact assessment.

Utility-scale biomass facilities require a permit pursuant to the Federal Immission Control Act, and can also necessitate an environmental impact assessment.

4.2 What are the primary consents and permits required to construct, commission and operate distributed/C&I renewable energy facilities?

Generally, the same permitting requirements that apply to utility facilities also apply to distributed/C&I renewable energy facilities (please see question 4.1).

4.3 What are the requirements for renewable energy facilities to be connected to and access the transmission network(s)?

Electricity network operators are obliged to connect renewable energy facilities to their network with priority; the facility operator bears the cost for the grid connection. Should network capacity be insufficient, the network operator must expand capacity to allow for feed-in by the renewable energy facility. A network operator must further grant priority access to the network regarding the take-in, transmission and distribution of electricity from a renewable energy facility.

Specific regulation applies regarding offshore wind facilities; such facilities are connected to the network according to the binding schedule set out in the Network Development Plan (*Offshore-Netzentwicklungsplan*) of the electricity network operators, which specifies the timeline for the network connection of the respective offshore wind projects. If the network operator fails to provide the grid connection as specified, the facility operator is entitled to compensation.

The further requirements of network connection and access are governed by the general provisions of the Energy Industry Act and are subject to compulsory agreements between the facility operator and the network operator.

4.4 What are the requirements for renewable energy facilities to be connected to and access the distribution network(s)?

The general requirements for the connection and access of renewable energy facilities to the distribution network conform with the requirements regarding transmission networks (please see question 4.3).

4.5 Are microgrids able to operate? If so, what is the legislative basis and are there any financial or regulatory incentives available to promote investment in microgrids?

Generally, all energy networks are subject to the requirements of the Energy Industry Act. Federal legislation does not provide for particular incentives for microgrids; only specific types of microgrids are available, such as self-supplying facilities, closed distribution systems or customer facilities which must comply with additional specific regulation.

4.6 Are there health, safety and environment laws/regulations which should be considered in relation to specific types of renewable energy or which may limit the deployment of specific types of renewable energy?

In general, all renewable energy facilities are subject to a permitting procedure based on the potential impact of the installation on the health and safety of persons as well as on potential impacts on the environment (please see question 4.1).

5 Storage

5.1 What is the legal and regulatory framework which applies to energy storage and specifically the storage of renewable energy?

The operation of an energy storage facility is governed by energy regulation, most notably the Energy Industry Act. The regulatory framework varies depending on the storage technology used, e.g. battery storage, power-to-gas storage, compressed air storage and pumped storage.

Generally, the construction of a battery storage facility requires a construction permit, while a power-to-gas storage facility or hydrogen plant requires a permit under the Federal Immission Control Act. Compressed air storage facilities can require a permit pursuant to the Federal Mining Act, and pumped storage facilities usually require a plan approval procedure under the Water Act, including an environmental impact assessment.

Another way to store electricity from renewable energies is to convert it into gas (power-to-gas), in particular hydrogen, which is flexible in its use in terms of time and location. Following the German National Hydrogen Strategy (*Nationale Wasserstoff Strategie*) from 2020, a specific regulatory framework for the generation, transportation and storage of hydrogen from renewable energy, so-called "green hydrogen" was created in 2021. The Renewable Energy Act provides for a reduction of charges and levies for the production of green hydrogen to provide for a level playing-field compared to regular "grey hydrogen". The amended Energy Industry Act for the first time governs the creation of hydrogen infrastructure, including pipelines and storage facilities as well as the non-discriminatory access to such facilities.

5.2 Are there any financial or regulatory incentives available to promote the storage of renewable energy?

Operators of storage facilities, including power-to-gas storage facilities that produce hydrogen or biogas, can be exempted from grid access fees if they feed stored electricity into the grid. Power-to-gas facilities are also exempt from fees for feeding power into the gas grid. In addition, operators of energy storage facilities are eligible for a reduction of the Renewable Energy Surcharge.

Following the National Hydrogen Strategy, regulatory changes to the Renewable Energy Act were introduced to promote the utility-scale roll-out of hydrogen facilities by 2030 (please see question 5.1).

6 Foreign Investment and International Obligations

6.1 Are there any special requirements or limitations on foreign investors investing in renewable energy projects?

No particular requirements or limitations on foreign investments in renewable energy projects apply. However, the acquisition by non-EU entities of companies or assets that are considered "critical infrastructure", such as facilities for the generation, transmission or storage of electricity, can generally be subject to a federal audit procedure under the Foreign Trade Regulation (*Außenwirtschaftsverordnung*). If certain thresholds are reached, the Federal Ministry for Economic Affairs and Energy may consider that national security interests are concerned and prohibit the transaction.

6.2 Are there any currency exchange restrictions or restrictions on the transfer of funds derived from investment in renewable energy projects?

Apart from tax provisions that apply indiscriminately, there is no specific regulation concerning funds derived from renewable energy projects.

6.3 Are there any employment limitations or requirements which may impact on foreign investment in renewable energy projects?

No specific employment limitations or requirements apply regarding foreign investment in renewable energy projects. Germany and the EU common market generally provide for a sufficient and skilled work force; however, shortages cannot fully be ruled out due to an increase of demand for workers in the renewable sector. Non-EU citizens require a work permit/visa to work in Germany. No specific quota requirements apply regarding workers from Germany.

6.4 Are there any limitations or requirements related to equipment and materials which may impact on foreign investment in renewable energy projects?

Equipment and materials used in renewable energy projects must comply indiscriminately with general safety requirements as well as additional project-related requirements under German and EU law. Non-compliance with such standards can hinder the use of specific products or equipment.

7 Competition and Antitrust

7.1 Which governmental authority or regulator is responsible for the regulation of competition and antitrust in the renewable energy sector?

The primary authority regarding competition, antitrust and merger control is the Federal Cartel Office (*Bundeskartellamt*). This applies equally for the renewable energy sector. Regarding merger control with EU-wide implications, the European Commission is directly responsible. Under the Energy Industry Act, specific regulation applies regarding the unbundling of the activities of energy transmission on the one hand, and energy generation or supply on the other hand. Further, network operators are regulated to prevent an abuse of their monopolies. The responsible authority is the Federal Network Agency.

7.2 What power or authority does the relevant governmental authority or regulator have to prohibit or take action in relation to anti-competitive practices?

In the field of merger control, the Federal Cartel Office may prohibit a transaction if the concerned companies exceed certain revenue thresholds and if the transaction is expected to create or perpetuate a market-dominating position. The European Commission may impose conditions or prohibit transactions that might restrain competition in the EU.

Concerning an abuse of market power, the Federal Cartel Office Act may prohibit any abusive behaviour and take corrective measures to ensure compliance.

BNetzA possesses specific competences to ensure network access, e.g. by imposing revenue caps for network tariffs or by specifying cost components.

7.3 What are the key criteria applied by the relevant governmental authority or regulator to determine whether a practice is anti-competitive?

If a company holds a dominant market position (e.g. no competitor, paramount market position of 40% of market shares), its practices are considered abusive if they deny access to facilities essential for competition, seek to squeeze a competitor out of the market, or demand unreasonable prices or conditions.

Under the Energy Industry Act, there is deemed to be an abuse of market power if network connection and access are denied or in the case of discrimination against certain companies compared to their competitors.

8 Dispute Resolution

8.1 Provide a short summary of the dispute resolution framework (statutory or contractual) that typically applies in the renewable energy sector, including procedures applying in the context of disputes between any applicable government authority/regulator and the private sector.

Disputes between participants in the energy market are regarded as civil law matters. This includes disputes regarding remuneration under the Renewable Energy Act. Disputes regarding decisions by regulatory agencies in energy-related matters under the Energy Industry Act are heard by the cartel senates of the higher regional courts.

8.2 Are alternative dispute resolution or tiered dispute resolution clauses common in the renewable energy sector?

The Renewable Energy Act provides for an alternative dispute resolution mechanism (*Clearingstelle*), which is responsible, for example, for disputes between network operators and facility operators. The *Clearingstelle* also provides general advice on the application of the Renewable Energy Act.

8.3 What interim or emergency relief can the courts grant?

German Civil or Administrative Courts can provide interim relief or grant pre-judgment seizures and interim injunctions. Similar provisions also exist with regard to decisions by regulatory agencies under the Energy Industry Act.

Under the Renewable Energy Act, courts can issue mandatory injunctive relief, e.g. requiring the grid operator to connect a facility to the network or to provide remuneration.

8.4 Is your jurisdiction a party to and has it ratified the New York Convention on the Recognition and Enforcement of Foreign Arbitral Awards and/or the Convention on the Settlement of Investment Disputes between States and Nationals of Other States and/or any significant regional treaty for the recognition and enforcement of judgments and/or arbitral awards?

Germany has signed and ratified both the New York Convention on the Recognition and Enforcement of Foreign Arbitral Awards (New York Convention) and the Convention on the Settlement of Investment Disputes between States and Nationals of Other States (ICSID Convention).

Moreover, Germany also applies the European Union's system on the mutual recognition and enforcement of foreign judgments. Under this regime, a judgment handed down in any Member State shall, subject to certain conditions, be recognised and enforceable in all other Member States without any special procedure of recognition or declaration of enforceability being required.

Germany is also a party to the Energy Charter Treaty, which provides for the protection of foreign investments in the energy sector, based on the extension of national treatment, or most-favoured-nation treatment and protection against key non-commercial risks such as expropriation, unreasonable and discriminatory measures or measures that infringe the principle of fair and equitable treatment. The Energy Charter Treaty also provides for Investor-State Dispute Settlement under the arbitral rules of ICSID, United Nations Commission on International Trade Law (UNCITRAL) or the Stockholm Chamber of Commerce.

8.5 Are there any specific difficulties (whether as a matter of law or practice) in litigating, or seeking to enforce judgments or awards, against government authorities or the state?

In principle, actions against decisions by governmental agencies or regulators may only be brought by persons who can claim to be "injured", i.e. where they can demonstrate that they have suffered a legal detriment from the allegedly unlawful act. Third parties must demonstrate that the legal provisions which are alleged to have been breached by the act (also) serve the purpose of protecting their legal interests. Exceptions exist, for instance, with respect to certain authorisations alleged to violate provisions relating to the environment; in this regard, environmental organisations can bring cases without having to demonstrate their own legal interest in the decision. This is based on legislation implementing the Aarhus Convention, which applies throughout the European Union.

8.6 Are there examples where foreign investors in the renewable energy sector have successfully obtained domestic judgments or arbitral awards seated in your jurisdiction against government authorities or the state?

Based on the Energy Charter Treaty, the Swedish state-owned power company Vattenfall AB filed two cases against Germany under the ICSID rules. The first case (ICSID Case No. ARB/09/6) concerned the imposition of environmental restrictions on the construction of a coal-fired power plant. Vattenfall initiated an investor-state dispute settlement, pleading violations of the principle of fair and equitable treatment and the prohibition of indirect expropriation. The case was resolved through a settlement in which the government of Hamburg agreed to waive certain restrictions.

The second case was filed by Vattenfall against Germany in May 2012 before an ICSID arbitral tribunal (ICSID Case No. ARB/12/12) on the basis of the Energy Charter Treaty concerning the re-accelerated phase-out of commercial nuclear power which was implemented by the German Federal Government following the Fukushima disaster in 2011. This case is still pending.

In 2019, Strabag (ICSID Case No. ARB/19/29) filed a case against Germany under the ICSID rules, regarding investments in offshore wind energy projects in the German North Sea and legislative changes by Germany to its renewable energy regime, which caused the claimants to abandon their offshore wind projects.

9 Updates and Recent Developments

9.1 Please provide a summary of any recent cases, new legislation and regulations, policy announcements, trends and developments in renewables in your jurisdiction.

In the recent past, the Federal Government has undertaken ambitious steps to promote the development of renewables in Germany. The 2019 climate package with the Climate Action Programme 2030 and the Federal Climate Protection Act enshrines the target to decarbonise the economy. In June 2020, the National Hydrogen Strategy was published, which establishes hydrogen produced from renewable sources as a significant factor in Germany's decarbonisation strategy and aims at industrial scale generation capacities for green hydrogen with 5 GW to be installed by 2030 and 10 GW by 2035. In July 2020, the Coal Phase-out Act was passed, which will end energy generation from coal by 2038. In 2021, the German Federal Constitutional Court issued a landmark judgment on the federal legislator's constitutional obligations to address climate change (please see question 2.3), which led to an amendment of the Federal Climate Protection Act and stricter emission targets (please see question 1.3). Further impulses in Germany can be expected from the EU "Fit for 55" package for 2021, which aims to achieve an EU-wide emission reduction of 55% compared to 1990 levels (compared to a mere 40% planned today).

These drivers, in particular decarbonisation of sectors including industry, mobility and transportation as well as the building and agriculture sector, will require an ever increasing share of renewable energy. To that end, the Renewable Energy Act was amended in 2021 to provide for additional generation capacities, notably for offshore wind.

However, it is clear that more electricity from renewable energy will be needed when millions of new electric vehicles and heat pumps enter the market and if more and more green hydrogen is produced. This will not only increase the demand for renewable energy facilities but also for energy transmission systems and energy storage facilities in Germany for the foreseeable future. To transpose these political aims into action, further amendments to the regulatory framework will be required by the new Federal Government following the general elections in September 2021.

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Pswp was founded in 2018 by leading members of the Environment Planning and Regulatory Group of Freshfields, a team of highly experienced partners and lawyers.
Our team of five Partners and 16 Associates with offices in Berlin and Düsseldorf has more than 20 years' exceptional experience and knowledge of regulatory and environmental law projects that have broken new ground in the legal and economic development of Germany and Europe.
We advise in a number of sectors, particularly in the sectors of energy and climate regulation, industry and environment, mining, water and raw materials. Our firm has already shaped the national nuclear phase-out and we are now at the forefront of the coal phase-out, as well as the energy transition to renewable energy, green hydrogen, and a low-carbon economy.

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1 Overview of the Renewable Energy Sector

1.1 What is the basis of renewable energy policy and regulation in your jurisdiction and is there a statutory definition of 'renewable energy', 'clean energy' or equivalent terminology?

The policy pursued in the energy sector aims firstly at finding, securing and managing energy resources, in such a way as to ensure the safe, smooth, and constant coverage of energy needs in the best possible terms, and secondly to create energy reserves, alliances and alternative ways of meeting the needs of the domestic energy market in times of energy crises and to protect consumers through mechanisms for the normalisation of external, extraordinary destabilising phenomena and trends.

Energy from renewable sources refers to energy from renewable non-fossil sources, namely wind, solar, aerothermal, geothermal, hydrothermal and marine energy, hydropower, biomass, landfill gas, sewage treatment plant gas and biogases (Law 3468/2006, article 2 par.2 as amended and in force by article 15 of Law 4062/2012).

1.2 Describe the main participants in the renewable energy sector and the roles which they each perform.

The main participants in the renewable energy sector are the Ministry of Environment and Energy (Ministry) and the Regulatory Authority for Energy (RAE). The Ministry determines the country's energy policy and set outs the strategy to meet the energy needs and the resolution of the energy issue in Greece. RAE is an independent administrative authority, established by Law 2773/1999, which transposed Directive 96/92/EC into the Greek legal system. RAE is authorised to control, regulate and supervise the operations of all sectors of the energy market. It must be noted that RAE's role as the national energy regulator was upgraded after 2011, based on the provisions of the 3rd European Energy Package. In particular, Law 4001/2011 states that RAE "…*constitutes the national regulatory authority in electricity and natural gas sectors*" and, pursuant to article 5 and 6 of this law, it has a separate legal personality and enjoys financial and administrative autonomy. Chapter C of the above-mentioned law includes RAE's main responsibilities, namely: monitoring and surveillance of the energy market, the country's energy security of supply and Independent Transmission System Operators; granting, amending and revoking all certificates/licences required for carrying out energy-related activities; approving tariffs for non-competitive activities; granting exemption from third-party access obligations; monitoring access to energy interconnections; and taking regulatory measures for the effective functioning of energy markets. In addition, RAE may collect any form of data, conduct investigations, and examine complaints.

1.3 Describe the government's role in the ownership and development of renewable energy and any policy commitments towards renewable energy, including applicable renewable energy targets.

The National Energy and Climate Plan is the strategic plan of the Greek Government on climate and energy matters. It includes specific policy measures, which take into account the potential, technical specifics and quality characteristics of the Greek energy system in the fields of energy production, distribution and consumption. Among the other climate and energy targets set by the year 2030, those related to renewable energy sources (RES) are:

- for the share of RES to reach at least 35% of final energy consumption;
- for the share of RES in the final consumption of electricity to reach at least 60%;
- for the share of RES for heating and cooling needs to exceed 40%; and
- for the share of RES in the transport sector to exceed 14%.

Furthermore, the launch on November 2020 of the so-called "target model" marked the beginning of a new era for the Greek energy market. The target model is the single wholesale market model applied in all countries of the European Union (EU). Greece has thus complied with a fundamental obligation towards the EU, as the Member States are committed to creating a single European electricity market that will remove trade restrictions, facilitate connections between national markets and provide access to all on equal terms, in order to strengthen competition and ultimately benefit the consumer.

2 Renewable Energy Market

2.1 Describe the market for renewable energy in your jurisdiction. What are the main types of renewable energy deployed and what are the trends in terms of technology preference and size of facility?

The types of renewable energy in Greece are wind and solar energy, hydropower and biomass. Wind energy takes the lead. According to the last report of the Administrator of Renewable Energy Sources and Guarantees of Origin, the installed power

capacity (MW) for April 2021 amounted to: wind farms at 4,009.22; photovoltaic (PV) modules at 2,902.94; micro-hydroelectrical plants at 245.25; and biomass at 102.52.

2.2 What role does the energy transition have in the level of commitment to, and investment in, renewables? What are the main drivers for change?

The energy transition implies a great revolution in the energy market and all players are moving dynamically to increase their competitiveness and strengthen their presence for the "next day". An increase of RES penetration is the big issue. The main drivers for change are the strengthening of the economy, security of supply and climate targets in the context of the environment's protection.

2.3 What role, if any, has civil society played in the promotion of renewable energy?

Public awareness about environmental benefits, costs and the importance of RES in general has been an obstacle in RES development, as it has resulted in caution of the competent bodies towards RES facilities and reactions of several environmental organisations. However, green certificates and energy communities are expected to play a significant role in the social acceptance of energy production methods from RES, particularly from wind turbines.

2.4 What is the legal and regulatory framework for the generation, transmission and distribution of renewable energy?

The initial prerequisite for the generation is the producer's certificate (formerly, the production licence) issued by RAE pursuant to Law 4685/2020, which aims at the simplification of the first stage of licensing. The process and requirements for granting this certificate primarily depend on the type of the power plant and take into account a number of different parameters included in the Producer's Certificate Regulation. This regulation also applies to the modification, extension, renewal, transfer, revocation and termination of producer's certificates. This certificate has a specific renewable term and can be revoked for, among other things, a breach of obligations or insolvency of the certificate holder. It must be noted, however, that specific categories of RES facilities are exempt from the obligation to hold a producer's certificate. The issuance of a producer's certificate is followed by an environmental approval process and the installation licensing, which permits the construction of the project's facilities. After the relevant conditions are met, the final step is the issuance of the operation licence.

As far as the transmission is concerned, pursuant to Law 4001/2011, the ownership and management of the Hellenic Electricity Transmission System (HETS) belong to the Independent Power Transmission Operator S.A. (IPTO), which operates as an Independent Transmission Operator pursuant to the provisions set out by Directive 2009/72/EC and operates, maintains and develops the HETS. The basic regulatory framework is the HETS Grid Code, which defines the terms, procedures and requirements, and regulates every necessary issue and detail in relation to the activity and management of the transmission system, as well as the certification decision of IPTO as an independent ownership unbundling. The implementation of the basic regulatory framework is regulated by RAE Decisions, which are provided in the HETS Grid Code and concern parameters, calculations and special approvals, decided by RAE, upon the recommendation of the IPTO and published in the Government Gazette.

Pursuant to Law 4001/2011, the competent bodies regarding the activity of electricity distribution are the operators and owners of the distribution networks. The licences which define the terms and conditions for the exercise of the activity by the competent distribution operators, as well as the operation codes of the distribution networks, constitute the basic regulatory framework.

The operation of the Hellenic Electricity Distribution Network (HEDN) and the distribution of electricity is carried out by the Hellenic Electricity Distribution Network Operator S.A. (HEDNO), as established by virtue of Law 4001/2011, which integrated the provisions of Directive 2009/72/EC into Greek legislation. This directive imposes the legal and operational separation of transmission and distribution from vertically integrated electricity companies. HEDNO is responsible for the development, operation and maintenance of the HEDN under economically advantageous terms.

The operation of distribution network management is a natural monopoly. As a result, these operations are supervised and regulated by RAE. Regulating is achieved by approving the revenue that is permitted from such operation, while objectives are set for the improvement of both customer service and the efficiency of the company's operation, providing incentives for their achievement. In addition to Law 4001/2011, which outlines the operation, development, maintenance and access of users to HEDN, the main regulatory text which defines the above is the Hellenic Electricity Distribution Network Code (Code), which was approved by virtue of Decision 395/2016 reached by RAE. The Code regulates the rights and obligations of HEDNO, as well as the rights and obligations of network users and providers in addition to issues related to the development, operation, network access and services provided by the Network Operator and financial reward thereof. The details of the implementation of the provisions of the Code, as well as the necessary procedures and calculation methodologies required, are set out in the Application Manuals which are an integral part of the Code. The basic regulatory framework and the details of its implementation are established by RAE Decisions, following the opinions of the competent distribution bodies. The main decisions concern the Methodology for the Calculation of HEDNO's Required Revenue, the Distribution Regulation Decisions and the determination of network access charges (network connection and use charges), as well as charges for other services provided by the Network Operator following network users and suppliers' request. Some other important regulatory texts issued by RAE are the Management License of the HEDNO and the Terms and Limitations of the Exclusive Ownership License of the Electricity Distribution Network of Public Power Corporation (PPC) S.A. Further implementation details of the Code and the Application Manuals, which do not have a financial impact on network users, are determined by Implementation Guidelines which can be issued by the Network Operator. RAE may impose amendments of the content of the Implementation Guidelines.

2.5 What are the main challenges that limit investment in, and development of, renewable energy projects?

A long-standing obstacle to investing in RES is bureaucracy and legislative complexity, which have made licensing a complex and overly time-consuming process. This delay entails great costs for the investors, who are forced to employ staff for years,

without collecting revenue during this period. Consequently, investors are discouraged as the return on their investments will only be seen after many years.

In addition, residents, municipalities and environmental associations may hinder or prolong the licensing process and the operation of RES facilities. This possibility, combined with the long-term procedure before the courts in case of an appeal, acts as a disincentive for investments.

Strict spatial planning rules, funding difficulties and network saturation or a lack of available networks are also barriers to RES investments.

2.6 How are large utility-scale renewable power projects typically tendered?

There are no mandatory tenders for the construction of large utility-scale renewable power projects. However, the remuneration for the electricity produced results from tendering procedure.

2.7 To what extent is your jurisdiction's energy demand met through domestic renewable power generation?

Both the climate of Greece and its geographical location favour the development of RES, which is on an upward trajectory. For the first time in Greece, RES were the first energy source in the first quarter of 2021, surpassing mineral gas and lignite. In particular, green energy from wind farm and PV plants with hydropower plants managed to dominate the country's electricity generation mix with a rate of 49.13%. It is also worth mentioning that Greece set a record for clean energy on 9 May 2021 as RES covered 63% of the total demand (65.9 GWh/104.1 GWh). The data concerning the period 19–25 April 2021 are also interesting, when a rare phenomenon with zero net energy imports was recorded. According to the above, green energy, along with the strengthening of energy storage infrastructure as a counterweight to the variability of RES, could support the country's energy system.

3 Sale of Renewable Energy and Financial Incentives

3.1 What is the legal and regulatory framework for the sale of utility-scale renewable power?

Initially, the sale of renewable energy was based on a fixed price guarantee system known as Feed in Tariff (FIT) provided through long-term Power Purchase Agreements (PPAs). The Greek market is now in the process of reorganisation and transition from the model known as mandatory pool, that was applied until recently, to the new "target model" derived from the EU's Third Energy Package. For this purpose, the Hellenic Energy Exchange (HEnEx) was established. The planning of electricity markets in Greece is provided mainly in Chapter C of Law 4425/2016 as amended by Law 4512/2018 and in force. More specifically, the wholesale energy markets are: the day-ahead market; the Intra-Day Market; and the Balancing Market.

Pursuant to the above-mentioned law, Greece adopted a support system based on the sliding Feed in Premium (FiP) mechanism. Producers will receive differential state aid support in addition to their renumeration from their participation in the market up to the Reference Price, which will be determined through tenders. However, wind farms up to 3 MW and other RES up to 500 kW are excluded, as they will receive state aid support under the fixed price system. Finally, it should be noted that RES producers receiving FiP are required to participate in market mechanisms either autonomously or through the RES Aggregator.

Furthermore, the Energy Forward Market was established in 2020, in which electricity contracts are traded, with the aim of electricity delivery at a future time at pre-agreed prices.

3.2 Are there financial or regulatory incentives available to promote investment in/sale of utility-scale renewable power?

Incentives able to promote investments are mainly: the FiP regime; an increase on the power that will be auctioned in the RES tenders; tax exemptions; simplification of the licensing procedure; modifications in the environmental licensing such as extension of validity of ETA; shortening of procedural deadlines; and simplification of the process of amending or renewing environmental terms.

3.3 What are the main sources of financing for the development of utility-scale renewable power projects?

The standard financing scheme includes 20–30% equity and 70–80% bank financing as well as state aid for the produced electricity based on the FiP system. In addition, there are the "green bonds" and green financing in general. It is worth noting that New Energy Capital (NEC), the first Greek Mutual Fund in Energy Transition Infrastructure, has recently started activity. This is a financing alternative as NEC will seek to fill the equity gap observed in energy transition projects. The main investor in NEC is the Hellenic Development Bank of Investments. In addition, NEC's involvement as an institutional investor in an energy project significantly enhances the credibility of bank lending. Moreover, there are European and national funding programmes.

3.4 What is the legal and regulatory framework applicable to distributed/C&I renewable energy?

Generally, the legal and regulatory framework for the distributed/C&I renewable energy projects is the same as the one mentioned above for utility-scale projects. However, a new model for Greece is corporate PPAs, which are already a global trend (please see question 3.5 below for further information).

3.5 Are there financial or regulatory incentives available to promote investment in distributed/C&I renewable energy facilities?

Corporate or otherwise "green" PPAs, which are those between RES producers and industries, as well as energy-intensive companies from retail, tourism and catering, may resolve the heavy bond of ensuring lower electricity costs, one of the main disincentives for Greek production. This type of PPA is governed by the basic principle that RES producers will be able to enter into contracts through tenders with industries, as well as with companies, whose energy costs exceed 20% of their total production costs. The benefit of these for a producer is that he ensures, on a long-term basis and at a predetermined price, a buyer for the energy produced by his facilities, while the industry and any other energy-intensive company acquires stable and competitive supply prices.

The prices, in combination with the incentives that will be provided as state aid, are able to a) ensure sufficient profit margins for producers, and b) meet the needs of industry and other energy-intensive companies at competitive levels in the long run. Consequently, PPAs firstly will enhance the predictability of both the seller's revenue and the buyer's energy costs by limiting their exposure to energy market price fluctuations, secondly will ensure affordable prices, as they take advantage of the strong drop in costs in RES and thirdly, they will enable contracting companies to meet their environmental commitments for climate-neutral activities, with implications for the general public and institutional investors, as well as the funds that invest in them.

3.6 What are the main sources of financing for the development of distributed/C&I renewable energy facilities?

The sources of financing for the development of distributed/C&I renewable energy facilities are the same as those for utility facilities. In addition, net metering is also a financing scheme which favours distributed/C&I renewable energy facilities.

3.7 What is the legal and regulatory framework that applies for clean energy certificates/environmental attributes from renewable energy projects?

In the context of the liberalisation of the electricity market and in order to promote the use of RES, Guarantees of Origin (GOs) were introduced in Greek legislation. GOs are the electronic certificates issued by the competent authority and certify the origin of electricity equal to 1 MWh produced by RES or combined heat and power (CHP) in a facility for a certain period of time. The purpose of this certificate, which is also known as the green certificate, is to prove to the end consumer the percentage or quantity of electricity produced by RES or CHP and included in the energy mix of its supplier. The competent authority for the issuance of GOs for the interconnected system and network is the Administrator of Renewable Energy Sources and Guarantees of Origin, which also manages the Unified Information System in which the Registry of the GOs is kept under the control of RAE. With regard to Non-Interconnected Islands, HEDNO is responsible for the issuance of the above-mentioned certificates. GOs can be transferred, resulting in the development of a secondary certification market in which RES electricity producers compete to sell green certificates. It must be noted that the Administrator of Renewable Energy Sources and Guarantees of Origin is a full member of the Association of Issuing Bodies and is in the process of upgrading the Information System of GOs and its connection to the Association of Issuing Bodies (AIB) Hub, which will facilitate the electronic transfer of GOs to the European Registers.

3.8 Are there financial or regulatory incentives or mechanisms in place to promote the purchase of renewable energy by the private sector?

All incentives are listed above (please see question 3.2).

4 Consents and Permits

4.1 What are the primary consents and permits required to construct, commission and operate utility-scale renewable energy facilities?

The RES licensing process, in its most common form, includes a series of licences, approvals and opinions from a variety of authorities. More specifically, these are the following:

1. Producer's certificate granted by RAE for an initial term of 25 years, following the evaluation of zoning, technical and financial capability criteria.
2. Grid Connection issued by the competent grid operator, which sets out the technical terms, budget estimation and conditions for the grid connection of the facility.
3. Environmental Terms Approval granted by the regional state authorities or the Ministry as per project specifications, for an initial term of 15 years, following review of the project's Environmental Impact Assessment study.
4. Installation License for an initial term of two years.
5. PPA.
6. Building Permit granted by the local town planning authorities following a standard application.
7. Operation License.

Furthermore, for hydroelectric power plants, a water use permit is required.

However, there are specific categories of RES and CHP which are exempted from the obligation to obtain a producer's certificate, Installation License and Operation License. These are geothermal plants with an installed electrical capacity of less than or equal to 0.5 MW, PV or solar thermal stations with an installed electrical power of less than or equal to 1 MWp, CHP stations with an installed electrical power of less than or equal to 1 MWe, wind installations with an installed electrical power of less than or equal to 60 kW, stations from RES or CHP with an installed capacity of up to 5 MWe, installed by educational or research bodies of the public or private sector, plants installed by the Center for Renewable Energy Sources and Saving (CRES), autonomous stations from RES or CHP which are not connected to the system or the network, with an installed capacity of less than or equal to 5 MWe, and small hydroelectric power plants with installed electrical power less than or equal to 0.5 MW.

4.2 What are the primary consents and permits required to construct, commission and operate distributed/C&I renewable energy facilities?

The applicable laws and regulations are generally the same as those for utility-scale renewable energy facilities. It must be specified, however, that the installation of RES and CHP stations as well as storage systems of the energy produced by self-generators to cover their own needs, with "net metering", is permitted. These stations are exempted from the obligation to obtain a producer's certificate for electricity generation, installation permit and operation permit. Instead, they are required to comply with the environmental licensing process.

4.3 What are the requirements for renewable energy facilities to be connected to and access the transmission network(s)?

Energy producers usually follow a grid connection procedure which consists of specific steps:

1. Submission of a grid connection request by the producer to the competent operator, i.e. regarding the interconnected system and the network of the mainland to a) HEDNO for RES plants of power up to 8 MW, or b) IPTO for RES plants of power over 8 MW.
2. Grid connection offer by the competent operator.
3. Acceptance or not by the producer.
4. Finalisation of the grid connection offer.
5. Conclusion of the grid connection agreement.
6. Implementation of the grid connection agreement and electrification of user facilities.

4.4 What are the requirements for renewable energy facilities to be connected to and access the distribution network(s)?

The general requirements for RES facilities to access the transmission network also applies to those concerning access to the distribution network.

4.5 Are microgrids able to operate? If so, what is the legislative basis and are there any financial or regulatory incentives available to promote investment in microgrids?

One of the peculiarities of the Greek electrical system is that it includes many small or medium islands which cannot or do not benefit from being interconnected with the mainland system. As a result, several Greek islands are relatively remote and rely heavily on fossil fuels to power their electric grid. Therefore, the development of autonomous energy systems on the islands, and more specifically the prospects of smart microgrids in non-interconnected islands, has gathered great research and investment interest.

The most well-known example of an energy autonomous island remains Tilos, which started the procedure for its transition to green energy many years ago. The Tilos project, which comprised the development of a smart microgrid, was awarded in the context of the "European Research Innovation Days", as it developed an innovative energy model based on solar and wind energy as well as energy storage in batteries. In addition, another relevant innovative project was the operation of a microgrid providing electricity to 12 houses with intelligent autonomous load control in Kythnos.

4.6 Are there health, safety and environment laws/regulations which should be considered in relation to specific types of renewable energy or which may limit the deployment of specific types of renewable energy?

RES development in Greece has encountered significant obstacles, mainly concerning environmental licensing, the location of plants, and their installation in forest areas. Therefore, there is case law regarding the protection of the environment by the Council of State, regarding, in particular, wind farms and hydroelectric power plants. Among the environmental permits, there are also the environmental impact assessment, permits related to the location of the facility (as there is concern for the visual disturbance caused by the wind turbines), as well as permits related to the installation in forests.

5 Storage

5.1 What is the legal and regulatory framework which applies to energy storage and specifically the storage of renewable energy?

The regulatory framework that will permit the development of electricity storage facilities and their effective participation in the electricity markets is yet to be completed. In Greece, significant penetration of electricity storage systems is expected over the next decade. After 2025, new storage systems of installed power 0.7 GW are included. It is noteworthy that the current level of RES penetration (with the introduction of approximately 5.5 GW of wind and PV stations in the interconnected system gradually in previous years) has been achieved without new storage facilities. Nevertheless, in order to achieve higher levels of RES penetration in a financially rational way, energy storage needs arise.

5.2 Are there any financial or regulatory incentives available to promote the storage of renewable energy?

All incentives are listed above (please see question 3.2).

6 Foreign Investment and International Obligations

6.1 Are there any special requirements or limitations on foreign investors investing in renewable energy projects?

There are no such special requirements.

6.2 Are there any currency exchange restrictions or restrictions on the transfer of funds derived from investment in renewable energy projects?

There are no such restrictions.

6.3 Are there any employment limitations or requirements which may impact on foreign investment in renewable energy projects?

There are no such limitations, except for the work permit.

6.4 Are there any limitations or requirements related to equipment and materials which may impact on foreign investment in renewable energy projects?

There are no such limitations, apart from the general safety provisions.

7 Competition and Antitrust

7.1 Which governmental authority or regulator is responsible for the regulation of competition and antitrust in the renewable energy sector?

The renewable energy sector is a regulated market, where the state intervenes by regulating either prices or terms of access to infrastructure, without, however, circumventing competition rules. This state supervision in the case of RES is exercised by RAE. RAE, as the national energy regulator, *inter alia*, is empowered to monitor the operation of all sectors of the energy market and to ensure the protection of the consumer and the environment. Therefore, this sectoral state authority operates *ex ante*. However, there is also the Hellenic Competition Commission (HCC), which is the primary competition body in Greece, exclusively responsible for the enforcement of national (Law 3959/2011) and EU competition rules (articles 101 and 102 of the Treaty on the Functioning of the European Union (TFEU)). In particular, HCC promotes and defends competition in all markets, serving the consumer as well as businesses. HCC operates in parallel with RAE, additionally and *ex post*. Pursuant to article 26 of Law 4001/2011, RAE cooperates with

the HCC to deal with infringements of competition law, which fall within the responsibilities of the latter. In this context, RAE may suggest to HCC the initiation, as a matter of priority, of a relevant investigation in order to determine whether there is an infringement of general competition law if, during the RAE investigations, pursuant to article 28, there are indications that an issue regarding application of the provisions of general competition law is raised.

7.2 What power or authority does the relevant governmental authority or regulator have to prohibit or take action in relation to anti-competitive practices?

Pursuant to article 23 of Law 4001/2011, RAE may impose on companies that carry out energy activities regulatory measures and terms, in order to ensure the implementation of the provisions of domestic and EU legislation, the existence of conditions of healthy competition and, in general, the smooth operation of the market. In this context, RAE shall conduct investigations and cooperate in particular with HCC in cases of infringements of competition law. Furthermore, it recommends to the competent authorities the necessary measures, including the adoption of regulatory and individual acts, for the compliance with competition rules.

As far as HCC is concerned, it has been provided by law with the power to oblige the undertakings or associations of undertakings concerned, to terminate the infringements and to omit them in the future. Furthermore, HCC may impose conduct or structural measures, which must be necessary and appropriate for the cessation of the infringement, depending on its type and importance. It is noted that structural measures may be imposed only if either equally effective measures of conduct do not exist or all equally effective measures of conduct are more onerous than structural measures. HCC may also impose a fine for the infringement of competition law and/or warn for its imposition in the event of a continuation or recurrence of the infringement. Moreover, it may impose a fine on companies in case of non-fulfilment of a commitment made by them, which has become mandatory, in accordance with a decision by HCC.

In addition, HCC has the sole competence to take interim measures *ex officio* or at the request of the Minister of Economy, Competitiveness and Shipping when a violation of the competition rules is suspected and there is an urgent case to prevent an imminent irreparable danger.

7.3 What are the key criteria applied by the relevant governmental authority or regulator to determine whether a practice is anti-competitive?

The Greek energy market has specific structural characteristics which determine the conditions under which competition can develop. Its limited size and the asymmetry between the players increase the possibility of anti-competitive practices, particularly the abusive behaviour by companies that hold a dominant position. In this view, any abuse by one or more undertakings of a dominant position within the internal market or in a substantial part of it shall be prohibited as incompatible with the internal market. Such abuse may, in particular, consist of: (a) directly or indirectly imposing unfair purchase or selling prices or other unfair trading conditions; (b) limiting production, markets or technical development to the prejudice of consumers; (c) applying dissimilar conditions to equivalent transactions with other trading parties, thereby placing them at a competitive disadvantage; and/or (d) making the conclusion of contracts subject to acceptance by the other parties of supplementary obligations which, by their nature or according to commercial usage, have no connection with the subject of such contracts. Therefore, the three conditions that must be met are: the existence of a dominant position; the abusive use of this position; and the restrictive object or effect on competition.

However, it is crucial to determine whether an undertaking operating in a regulated market such as that of energy had a margin of discretion or if its act was enforceable by the state without even a minimum margin of autonomy.

Another anti-competitive practice is cartels; however, in the national energy market, which is regulated, this practice is less likely to be found than the above-mentioned.

8 Dispute Resolution

8.1 Provide a short summary of the dispute resolution framework (statutory or contractual) that typically applies in the renewable energy sector, including procedures applying in the context of disputes between any applicable government authority/regulator and the private sector.

Disputes in the private sector can be resolved either by the courts according to civil procedure, through mediation or through an arbitration mechanism.

Disputes with public authorities can be resolved a) through administrative procedures – usually these disputes concern the licensing process such as the refusal of granting a licence, or b) by courts – the judicial procedure may be the continuation of the administrative proceedings.

8.2 Are alternative dispute resolution or tiered dispute resolution clauses common in the renewable energy sector?

Pursuant to Law 4001/2011, there is a permanent arbitration mechanism of RAE, which is optional.

The majority of cross-border contracts contain an arbitration clause for dispute resolution.

8.3 What interim or emergency relief can the courts grant?

As an interim measure, the execution or abstention of an action may be ordered, provided that such a measure is temporary and limited to the needs of the specific situation, such as the cessation of construction of a RES facility. Such measures aim at avoiding any damage which would be difficult to repair.

8.4 Is your jurisdiction a party to and has it ratified the New York Convention on the Recognition and Enforcement of Foreign Arbitral Awards and/or the Convention on the Settlement of Investment Disputes between States and Nationals of Other States and/or any significant regional treaty for the recognition and enforcement of judgments and/or arbitral awards?

Greece ratified the New York Convention on 16 July 1962 and has transposed it into its national legislation by virtue of the Legislative Decree 4220/1962. Greece has also been a party to the Convention on the Settlement of Investment Disputes between States and Nationals of Other States since 1966.

8.5 Are there any specific difficulties (whether as a matter of law or practice) in litigating, or seeking to enforce judgments or awards, against government authorities or the state?

There are no such difficulties.

8.6 Are there examples where foreign investors in the renewable energy sector have successfully obtained domestic judgments or arbitral awards seated in your jurisdiction against government authorities or the state?

No such case has been reported so far.

9 Updates and Recent Developments

9.1 Please provide a summary of any recent cases, new legislation and regulations, policy announcements, trends and developments in renewables in your jurisdiction.

The past decade has been crucial to the consolidation of a global perception of the need for energy transition to a world with cleaner energy and with a smaller environmental footprint. Positive development in the field of energy policy was the completion and updating of the country's energy planning until 2030, and long-term energy planning until 2050, with the ultimate goal as the transition into climate neutrality. Greece is ranked in the top 15 progressive EU countries, which have already decided their complete detoxification from carbon/lignite, and at the same time is the first lignite-producing country in the EU setting a de-lignification date before 2030.

The adopted "target model", the establishment of HenEx and the corporate PPAs are significant developments in the promotion of RES for consumers' benefit after all. Also crucial is the promotion of regulation for offshore wind farms, which are a new technology and considered the future of wind energy.

The spread of COVID-19 greatly affected the energy sector in all forms of energy. The most apparent effect was the sudden and sharp decline in demand, causing a significant decline in prices. Among other things, the pandemic has had a negative effect on hydrocarbon exploration, on the construction of energy and industrial units, and for electricity producers and manufacturers of PV panels and wind turbines.

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1 Overview of the Renewable Energy Sector

1.1 What is the basis of renewable energy policy and regulation in your jurisdiction and is there a statutory definition of 'renewable energy', 'clean energy' or equivalent terminology?

There are several key regulations governing renewable energy policy in Indonesia:

(a) The main regulations on energy in general:
  (i) Law No. 30 of 2007 on Energy (**Energy Law**); and
  (ii) Government Regulation No. 79 of 2014 on National Energy Policy.

(b) Regulations which are specific to a certain type of renewable energy such as:
  (i) Law No. 17 of 2019 on Water Resources; and
  (ii) Law No. 21 of 2014 on Geothermal Energy.

Pursuant to the Energy Law, renewable energy is defined as the energy that comes from renewable energy sources. Renewable energy sources are subsequently defined as sources of energy produced from sustainable energy resources, if managed properly, including geothermal, wind, bioenergy, solar, hydropower, tidal and ocean thermal.

1.2 Describe the main participants in the renewable energy sector and the roles which they each perform.

The main participants in Indonesia's renewable energy sector include:

(a) Government institutions and National Utility

(1) Ministry of Energy and Mineral Resources (**MEMR**): the primary government institution in charge of policy and decision-making to supervise Indonesia's energy sources and assets. It is responsible for preparing the National Energy Policy (**NEP**) and, through the Directorate General of New and Renewable Energy and Energy Conservation, and the Directorate General of Electricity (**DGE**), regulates the renewable energy sector.

(2) PT PLN (Persero) (**PLN**): the Indonesian state-owned enterprise in charge of the electricity sector which by law is granted a priority to provide electricity for public interests and has a *de facto* monopoly on transmission and the sale and distribution of electricity to end consumers. It also owns the majority of the power generation capacity. As of December 2020, PLN's generation capacity amounted to 44,174 MW or 69.75% of the total installed power generation capacity in Indonesia (PLN's 2020 statistics).

(3) Ministry of Finance: the government institution responsible for determining the state budget, including administering subsidies, fiscal incentives and government guarantees for energy-related products, infrastructure and operations.

(4) Ministry of Environment and Forestry (**MEF**): has the authority to formulate and implement policies relating to the environmental and forestry sectors. This includes authorising the utilisation of forest areas for the development of electricity transmission lines, as well as for geothermal and hydropower projects which are generally located in remote and protected areas.

(5) Ministry of Public Works and Housing: has the authority to formulate and implement policies relating to, among others, the management of certain types of renewable energy (such as water resources and waste).

(6) Ministry of Industry: has the authority to formulate and implement industrial policies, including with regard to minimum local content requirements for the development of renewable energy.

(b) Private parties

(1) Independent Power Producers (**IPP**): private power generators established by sponsors/developers as a special purpose company to develop, own and operate power plants and sell power to PLN under a power purchase agreement (**PPA**).

(2) Financiers/lenders: provide financing to renewable energy projects. This includes commercial banks, development finance organisations (such as ADB, World Bank Group, etc.), export credit agencies (**ECAs**), and local financing institutions such as PT Indonesia Infrastructure Finance).

1.3 Describe the government's role in the ownership and development of renewable energy and any policy commitments towards renewable energy, including applicable renewable energy targets.

Based on the Indonesian constitution, natural resources (including renewable energy) are controlled by the state and shall be utilised for the optimal welfare of the people. Therefore, the Government of Indonesia (**GoI**) has the full power and authority to govern the development of renewable energy in Indonesia.

One of the main policies of the NEP is the utilisation of renewable energy sources for national electricity purposes. The GoI has set targets for renewable energy to represent at least 23% of the energy mix by 2025, and at least 31% by 2050.

2 Renewable Energy Market

2.1 Describe the market for renewable energy in your jurisdiction. What are the main types of renewable energy deployed and what are the trends in terms of technology preference and size of facility?

PLN has the priority to provide electricity for public interests. Private electricity generation by IPPs is permitted; however, PLN is the sole offtaker and party that has the right to sell electricity to end consumers with the exception of limited "**Business Areas**" (*Wilayah Usaha*), where private participants can sell electricity (see question 3.1).

Based on PLN's latest Electricity Supply Business Plan (**RUPTL**) issued in 2019, as of October 2018, PLN owned and operated 5,921 power plants (including 371 renewable plants) and purchased electricity from 313 IPPs (including 191 renewable plants).

The main types of renewable energy deployed for power generation in Indonesia are (in a decreasing order of installed capacity) hydropower, geothermal, biomass and biogas, solar and wind.

There have been recent trends towards an increase of the deployment of solar and wind; however, the size of these projects and total installed capacity remains modest compared to other similar economies in the region and globally.

2.2 What role does the energy transition have in the level of commitment to, and investment in, renewables? What are the main drivers for change?

The current global energy transition, which involves moving away from the use of depletable sources of energy to renewable energy and a reduction of carbon emissions, is clearly also having an impact on policy in Indonesia.

Indonesia's commitments to energy transition are embodied through its ratification of the Paris Agreement under the United Nations Framework Convention on Climate Change through Law No. 16 of 2016. In its First Nationally Determined Contribution, in an effort to reduce its carbon footprint, Indonesia has set an unconditional reduction target of 29% and, with international assistance, a conditional reduction target of up to 41% against the business-as-usual scenario by 2030. Consequently, the development and utilisation of renewable energy is essential to fulfil these commitments and will undoubtedly gain momentum over the next few years.

2.3 What role, if any, has civil society played in the promotion of renewable energy?

For the past decade, a number of environmental groups and civil societal groups, such as the Indonesian Renewable Energy Society and the Institute for Essential Services Reform, have advocated for the promotion of renewable energy in Indonesia, but with a relatively limited success given the current modest share of renewables in the national energy mix.

More recently, there has been an uptick in public awareness and pressure, largely driven by the deterioration of air quality in urban centres such as Jakarta. As an example of the mounting pressure to address these issues, in June 2021, 32 plaintiffs (grouped under the Clean Air Initiative Coalition) filed a citizen lawsuit against the GoI on the grounds of failure to fulfil the Indonesian peoples' right to clean air. Pursuant to IQAir's 2019 world air quality report, Jakarta ranked as the fifth most polluted city out of 85 contenders worldwide, with an average PM2.5 concentration of 49.4 μg/m3, which is almost five times above the World Health Organization's exposure recommendation with daytime concentrations regularly above 130 μg/m3.

2.4 What is the legal and regulatory framework for the generation, transmission and distribution of renewable energy?

The main legal basis for the utilisation of renewable energy for electricity production are:

(a) Law No. 30 of 2009 on Electricity (**Electricity Law**) and some of its implementing regulations such as Government Regulation No. 14 of 2012 on Electricity Supply Business Activities; and

(b) MEMR Regulation No. 50 of 2017 on the Utilisation of Renewable Energy Resources for the Production of Electricity (**MEMR 50/2017**), as lastly amended by MEMR Regulation No. 4 of 2020 (**MEMR 4/2020**).

Additionally, two main master plans are regularly issued to detail national objectives in terms of development of generation, transmission and distribution infrastructure:

(a) The National Electricity General Plan, as lastly issued through MEMR Decree No. 143K/20/MEM/2019 on the National General Plan of Electricity from 2019 until 2038; and

(b) The RUPTL, which is PLN's 10-year development plan of electricity generation, transmission and distribution assets nationwide. It is an essential guide for business participants (including developers and contractors) to understand the current situation of the national electricity network as well as future prospects and trends for new projects including IPPs and PLN's own infrastructure development plans.

2.5 What are the main challenges that limit investment in, and development of, renewable energy projects?

The main challenges to investments in, and development of, renewable projects in Indonesia currently lie in:

(a) The lack of clarity and stability of the regulatory framework

The regulatory regime applicable to renewable energy projects has been marred by frequent changes over the past five years with key regulations (such as MEMR 50/2017) being perceived by private investors and financiers as lacking clarity and attractiveness, especially in terms of the applicable tariffs for renewables IPPs (which use the national and regional average cost of generation as reference points) and the tendering regime to award such projects. A new overarching Presidential regulation on renewable energy supposed to bring renewed clarity on these issues, and potentially reintroducing a feed-in-tariff (**FIT**) regime, has been in the works for the past two years

but is yet to be issued. In the meantime, a bill on renewable energy is also going through Parliament but without much clarity as to the timeline and its coordination with lower-rank regulations.

(b) Difficulties faced by PLN

In its capacity of state utility companies, PLN has public service obligations across Indonesia's vast and complex national territory. A substantial part of the electricity sold to end consumers is subsidised and, as a result, PLN is structurally in a loss-making position and relies on government subsidies. This arguably places it in a difficult situation to engage in substantial new investments or take on liabilities in support of renewable projects, either by way of incurring the necessary capital expenditures to develop the infrastructure required for such new projects (especially intermittent projects), or through FITs payable to renewable IPPs.

(c) Uncertainties in relation to available projects and general project size

The two factors above have in turn an impact on the level of support and ambition of the transition to renewables which has been observed over the recent past in Indonesia comparatively to other countries in the Asia-Pacific region. For an economy of its size, the project/deal flow of the past three to five years has been relatively modest and slow, as well as involving projects of a limited size (generally below the 50–75 MW mark depending on the technology). COVID-19 has also presented a major challenge as the attention of the authorities has had to partly shift to managing the economic and societal effects of the pandemic, and that electricity demand has also been impacted as a result.

Recent statements from the GoI and PLN, as well as the impending issuance of a new RUPTL, do, however, seem to indicate a (potential) shift of direction and focus towards more action and support for the energy transition across the archipelago.

2.6 How are large utility-scale renewable power projects typically tendered?

Pursuant to MEMR 50/2017, the default procurement method for most types of renewable energy projects (i.e. solar photovoltaic, wind, hydropower, biomass, biogas, wave and tidal, biofuel but not waste-to-energy (**WTE**) and geothermal) is the "**direct selection**". This typically involves a tender process in which only limited (pre-selected) developers can participate. In practice, PLN has established a number of lists of providers depending on the type of renewable technology which are updated from time to time and contain a large number of selected suppliers/developers which have fulfilled certain pre-qualification criteria and permits them to participate in relevant renewable IPP tenders across the country.

MEMR 4/2020 has also reintroduced the "**direct appointment**" method in the following limited circumstances:

(a) where there is a shortage of electricity in the local system, excess power, plant expansions, or if there is only one suitable provider;

(b) where there is an assignment by MEMR for: (i) hydropower projects (built by the selected business entity using state-owned water resources); (ii) other renewable projects (whether partly or fully developed by the GoI, including those funded with a grant); and (iii) WTE projects; and

(c) for hydropower projects with an existing location permit from the regional government, agencies or institutions prior to the entry into force of MEMR 4/2020.

Finally, it should also be noted that in recent renewable IPP tenders, PLN has imposed the "**mandatory partnership**" with one of its subsidiaries (generally Pembangkitan Jawa Bali or Indonesia Power) to hold 51% of the shares in the relevant IPP company to be established by the winning bidder. In spite of the 51:49 shareholding, the practical arrangements under this scheme generally involve the private IPP partner having joint control over the IPP company and project as well as being responsible for financing the project.

2.7 To what extent is your jurisdiction's energy demand met through domestic renewable power generation?

As of April 2021, the share of renewable energy in Indonesia's energy mix is 13.83%, with hydropower contributing to 7.9%, geothermal 5.6%, and other forms of renewable energy 0.33% of the energy mix (source: DGE).

3 Sale of Renewable Energy and Financial Incentives

3.1 What is the legal and regulatory framework for the sale of utility-scale renewable power?

Besides utility-scale projects which may be developed directly by PLN and injecting into the national grid, there are two basic schemes through which utility-scale renewable energy can be sold:

(a) IPPs

The most common scheme involves IPPs selling power to PLN as sole offtaker from such projects. PLN will then sell the electricity to end consumers through its national grid.

(b) Business Areas

An alternative scheme involves privately owned Business Areas which are carved out from PLN's national Business Area and in which the licensed holder is permitted to generate and sell electricity to end consumers within its boundaries. There are currently approximately 40 Business Areas across Indonesia and these generally consist of integrated industrial estates and large industrial plants (such as smelters, processing plants, etc.) and PLN has a *de facto* right of first refusal for such rights to be awarded, which has its challenges and limits the expansion of the scheme.

3.2 Are there financial or regulatory incentives available to promote investment in/sale of utility-scale renewable power?

Yes. The GoI enacted Presidential Regulation No. 10 of 2021 on Investment Business Activities on 4 March 2021 (the **Positive List**) to complement the recent changes to Law No. 25 of 2007 on Investment (the **Investment Law**). The Positive List introduces a list of prioritised lines of businesses that are entitled to certain fiscal incentives. This includes renewable energy electricity generation which is eligible for corporate income tax reduction facility.

Further, pursuant to Presidential Regulation No. 4 of 2016, renewable power projects may obtain incentives from the central and/or regional government in the form of, among others: (i) fiscal incentives; (ii) facilities for licensing and non-licensing; and (iii) subsidies. As at the time of writing, the following main financial or regulatory incentives are available:

(a) Income tax facility in the form of a 30% deduction of net income of investment value, accelerated depreciation of tangible assets and accelerated amortisation of intangible

assets, a 10% dividend withholding tax concession, and compensation for losses (for micro and mini power plants with an investment value of less than IDR 100 billion).

(b) Exemption of import duties for geothermal activities.

(c) Facilities for income tax, VAT and import duty.

3.3 What are the main sources of financing for the development of utility-scale renewable power projects?

This depends on the type of projects:

(a) Projects developed directly by the GoI or PLN

The main source of financing for such projects is the government's development budget. Besides that, grants, technical assistance and soft loans from bilateral and multilateral agencies are also used as well as other commercial sources which PLN relies on (such as loans from relationship banks and bond issuances).

(b) Projects developed by IPPs

The main sources of financing are (i) capital contributions by the sponsors, and (ii) loan facilities with banks or other financial institutions (such as development finance institutions and ECAs).

3.4 What is the legal and regulatory framework applicable to distributed/C&I renewable energy?

There is no specific regulatory framework applicable to distributed/C&I renewable energy. The Electricity Law enables the integration of electricity generation, transmission, distribution and sales activities into one business carried out by a business entity. This is the case of PLN and certain holders of Business Areas which can develop distributed/C&I assets and networks within their respective Business Areas.

Due to the restrictions on the granting of private Business Areas and the restrictions on the sale of electricity to end consumers, alternative business models and structures are implemented in practice for the development of renewable C&I assets and solutions, such as long-term leases and operation and maintenance arrangements.

3.5 Are there financial or regulatory incentives available to promote investment in distributed/C&I renewable energy facilities?

Please refer to question 3.2 as these incentives are also applicable to distributed/C&I renewable energy facilities.

In addition, the government can also directly fund the development of microgrids through the line ministry and regional infrastructure budgets. For example, a direct fund may be granted for the development of off-grid renewable energy projects (Ministry of Villages, Disadvantaged Regions, and Transmigration Regulation No. 11 of 2019).

3.6 What are the main sources of financing for the development of distributed/C&I renewable energy facilities?

Please refer to question 3.3.

3.7 What is the legal and regulatory framework that applies for clean energy certificates/environmental attributes from renewable energy projects?

There is currently no specific legal and regulatory framework that applies for clean energy certificates from renewable energy projects in Indonesia. However, in November 2020, PLN launched renewable energy certificates in order to promote the use of electricity from renewable energy sources (https://layanan.pln.co.id/renewable-energy-certificate/informasi).

Hence, private consumers or companies wanting to demonstrate their commitment to use renewable energy can participate directly in the purchase of renewable energy through these certificates.

In addition, a draft Presidential regulation on greenhouse gas (**GHG**) obligations is currently under preparation and will provide for GHG emissions reporting obligations and the implementation of a carbon economic value mechanism (including carbon trading) in order to achieve Indonesia's objectives under the Paris Agreement.

3.8 Are there financial or regulatory incentives or mechanisms in place to promote the purchase of renewable energy by the private sector?

There are currently no financial or regulatory incentives or mechanisms in place to promote the purchase of renewable energy by the private sector.

4 Consents and Permits

4.1 What are the primary consents and permits required to construct, commission and operate utility-scale renewable energy facilities?

Business entities supplying electricity for public use, which covers the generation, transmission, distribution and/or sale of electricity, are required to hold an Electricity Supply Business Licence which is granted for up to 30 years (extendable).

Upon the completion of construction of the facilities, owners must obtain an Operation Worthiness Certificate (*Sertifikat Laik Operasi*) as proof that the electricity facilities have passed the required commissioning tests in order to ensure compliance with the applicable technical requirements.

In addition, there may also be other permits required in relation to specific types of renewable energy projects (such as for geothermal or hydropower projects). Please also refer to question 4.6.

4.2 What are the primary consents and permits required to construct, commission and operate distributed/C&I renewable energy facilities?

Please refer to question 4.1.

4.3 What are the requirements for renewable energy facilities to be connected to and access the transmission network(s)?

Please refer to question 4.1.

In addition, upon connecting to and accessing the grid, the facilities must comply with the requirements under the applicable grid code.

There are several grid codes in Indonesia based on the location of the relevant grids in light of the scattered and archipelagic nature of Indonesia's geography.

4.4 What are the requirements for renewable energy facilities to be connected to and access the distribution network(s)?

Please refer to question 4.3.

4.5 Are microgrids able to operate? If so, what is the legislative basis and are there any financial or regulatory incentives available to promote investment in microgrids?

Yes. However, there are certain requirements that need to be fulfilled in order to operate microgrids.

The main applicable legal basis is MEMR Regulation No. 38 of 2016, which strives to provide electricity access to rural or remote areas by permitting entities to operate small-scale electricity businesses of up to 50 MW. However, the relevant business entities must obtain a stipulation of Business Area in order to be able to supply electricity to end consumers. Please refer to question 3.1 and the related challenges.

The implementation of small-scale electricity business is categorised based on the source of fund (i.e. with or without subsidy). If with subsidy, MEMR will stipulate the Business Area to be tendered with a selection process by the governor of the relevant area. The winner of the selection process must then optimise the utilisation of renewable energy sources and may be granted certain fiscal incentives as mentioned in question 3.2. Where a subsidy is not called for, the relevant business entity shall apply for the Business Area in accordance with relevant regulations.

Please also refer to question 3.5 on the direct funding available from the government.

4.6 Are there health, safety and environment laws/regulations which should be considered in relation to specific types of renewable energy or which may limit the deployment of specific types of renewable energy?

Health and Safety

Generally, health and safety requirements apply to all types of renewable energy projects. These are mainly regulated under the Minister of Manpower (**MOM**) Regulation No. 12 of 2015.

Environment

Environmental matters are regulated under Law No. 32 of 2009 on Environmental Protection and Management and Government Regulation No. 22 of 2021 on the Implementation of Environmental Protection and Management. Based on the foregoing, business entities are required to prepare a certain environmental commitment document depending on the impact their activities will have on the environment. In the renewable energy sector, the type of document is determined under MEF Regulation No. 4 of 2021 and different requirements may apply depending on the type and capacity of the renewable energy project.

To utilise certain types of renewable energy for electricity generation, there are also certain specific permits of environmental nature that need to be obtained. These include: (i) the Water Resource Utilisation Permit for hydropower projects; (ii) the Geothermal Permit for geothermal power projects; and (iii) the Waste Management Permit for WTE projects. Where the project is fully or partly located in a forestry area, a Forestry Use Approval must also be obtained.

5 Storage

5.1 What is the legal and regulatory framework which applies to energy storage and specifically the storage of renewable energy?

There are currently no specific regulations in Indonesia that apply to the storage of renewable energy.

5.2 Are there any financial or regulatory incentives available to promote the storage of renewable energy?

There are currently no specific financial or regulatory incentives available in Indonesia to promote the storage of renewable energy.

6 Foreign Investment and International Obligations

6.1 Are there any special requirements or limitations on foreign investors investing in renewable energy projects?

Yes, please see below.

Minimum Capital requirement

Pursuant to the Head of Ministry of Investment (*Badan Koordinasi Penanaman Modal*, **BKPM**) Regulation No. 4 of 2021, foreign investment companies in Indonesia are subject to a minimum capital requirement of at least IDR 10 billion in paid-up capital.

Foreign ownership requirement

Pursuant to the recent Positive List, foreign investment limitations no longer apply for electricity generation activities of a capacity of 1 MW and above; however, generation below 1 MW remains reserved for domestic cooperatives and micro-, small- and medium-scale businesses.

6.2 Are there any currency exchange restrictions or restrictions on the transfer of funds derived from investment in renewable energy projects?

Pursuant to Law No. 24 of 1999 on the Flow of Foreign Exchange and Exchange Rate System, the transfer of foreign exchange from Indonesia to overseas (and *vice versa*) is subject to reporting obligations to Bank Indonesia.

Further, Law No. 7 of 2011 on Currency provides that, among others, payment transactions, settlement obligations which use money and other transactions that take place within Indonesia, are required to use IDR subject to certain exemptions which include, amongst others, international commercial transactions and international financing transactions.

In this respect, the Investment Law provides that investors may transfer and repatriate in foreign exchange for, among others, capital, profits, bank interest, dividends, other income or funds required to purchase raw and auxiliary materials or replacing capital goods in order to protect the viability of the investment.

6.3 Are there any employment limitations or requirements which may impact on foreign investment in renewable energy projects?

Yes. Law No. 13 of 2003 on Manpower (as amended by Law No. 11 of 2020 – the **Job Creation Law**) suggests that the

employment expatriates need to be based on an expatriate utilisation plan (*Rencana Penggunaan Tenaga Kerja Asing*) which is approved by MOM.

Further, some areas of work, such as positions relating to personnel hire and human resources, are closed for expatriates, and employers are required to appoint Indonesian citizens as the expatriates' understudy for the purpose of transfer of technology and expertise, as well as the conduct of education and job training in accordance with the qualifications of the position occupied by the expatriate.

6.4 Are there any limitations or requirements related to equipment and materials which may impact on foreign investment in renewable energy projects?

Yes, there are certain local content requirements that must be complied with in relation to the equipment and materials used in renewable energy projects. These are mainly regulated in Ministry of Industry Regulation No. 54/M-IND/PER/03/2012 on the Guidelines for the Utilisation of Local Products for the Development of Electricity Infrastructure.

7 Competition and Antitrust

7.1 Which governmental authority or regulator is responsible for the regulation of competition and antitrust in the renewable energy sector?

Pursuant to Law No. 5 of 1999 on the Prohibition of Monopolies and Unfair Business Competition Practices (**Competition Law**), the Indonesian Competition Commission (*Komisi Pengawas Persaingan Usaha*, **KPPU**) is the governmental authority and regulator that is responsible for all competition and antitrust matters in Indonesia (including for the renewable energy sector).

7.2 What power or authority does the relevant governmental authority or regulator have to prohibit or take action in relation to anti-competitive practices?

The KPPU acts as regulator, investigator and decision maker, with the authority to:

(a) launch investigations on its own initiative or following complaints by consumers, companies or government agencies (however, this does not extend to search-and-seizure dawn raids or other commanding investigative powers);
(b) issue internal guidelines, summon and subpoena witnesses and experts, request information from parties and the GoI; and
(c) impose penalties and sanctions to business actors who conduct anti-competitive practices.

7.3 What are the key criteria applied by the relevant governmental authority or regulator to determine whether a practice is anti-competitive?

The Competition Law applies a number of criteria to determine whether a practice is anti-competitive, namely:

(a) Monopoly: business actors may be reasonably suspected or deemed to control the production or marketing of certain goods and/or services.
(b) Monopsony: business actors may be reasonably suspected or deemed to control the acquisition of supplies or to act as a sole buyer where one business actor or a group of business actors controls more than 50% of the market of a certain type of goods or services.
(c) Dominant position: (i) where a business actor or group of business actors controls ≥ 50% of the market share; or (ii) where two or three business actors or groups hold ≥ 75%. Other relevant factors include financial capacity, access to supplies or sales, and capability to adjust supply or demand.

The Competition Law also provides additional prohibitions on anti-competitive practices, namely price-fixing, market allocation, trusts, oligopoly, oligopsony and bid- or tender-rigging.

8 Dispute Resolution

8.1 Provide a short summary of the dispute resolution framework (statutory or contractual) that typically applies in the renewable energy sector, including procedures applying in the context of disputes between any applicable government authority/regulator and the private sector.

As a general proposition, Indonesian law recognises the settlement of disputes by way of litigation, arbitration and alternative dispute resolution (which includes consultation, negotiation, mediation, conciliation and expert evaluation).

Typically, the choice of dispute resolution method in the renewable energy sector in Indonesia will depend on the nature of the parties involved. If the relevant relationship and/or contract involves private parties (especially foreign parties), the preferred and most common type of dispute resolution framework will involve international arbitration seated outside Indonesia (with Singapore having become the most popular seat for arbitrations involving Indonesian renewable energy projects). This is, for example, the case under PPAs with PLN for any type of IPP project (other than mini or micro projects) and large-scale EPC projects for its own developments and needs.

If the relationship or contract only involves domestic parties and public sector participants, the parties may have a tendency to opt for domestic arbitration or even litigation.

8.2 Are alternative dispute resolution or tiered dispute resolution clauses common in the renewable energy sector?

Yes. As an example, MEMR Regulation No. 10 of 2017 provides that PPAs between PLN and IPPs must include tiered dispute resolution provisions.

8.3 What interim or emergency relief can the courts grant?

In a court proceeding, parties can request provisional measures to be issued for the purpose of preserving the *status quo* or preventing the disappearance of assets, the taking of evidence of witnesses or the preservation of property or evidence. These are granted to protect the claimant's interest and may include measures pertaining to the jurisdiction of the court in adjudicating the case, the intervention of third parties, or the seizure of assets as a means to ensure the payment of an award.

In general, there are strict requirements in order for the court to grant provisional measures and these are intensified even more so when the purpose of issuance is in support of an arbitral process.

8.4 Is your jurisdiction a party to and has it ratified the New York Convention on the Recognition and Enforcement of Foreign Arbitral Awards and/or the Convention on the Settlement of Investment Disputes between States and Nationals of Other States and/or any significant regional treaty for the recognition and enforcement of judgments and/or arbitral awards?

Yes. Indonesia is a signatory to:

(a) the New York Convention – ratified through Presidential Decree No. 34 of 1981 with reservations on reciprocity and commerciality; and

(b) the Convention on the Settlement of Disputes between States and Nationals of Other States – ratified through Law No. 5 of 1968.

Currently, Indonesia is not a party to any international convention on the recognition and enforcement of foreign judgments. Furthermore, the *Reglement op de Burgerlijke rechtvordering* stipulates that foreign judgments cannot be enforced in Indonesia. As a result, the Indonesian courts will not be bound to enforce foreign judgments.

In order to enforce the disputed matters in Indonesia, it will be necessary to obtain a judgment from a competent court in Indonesia. Foreign court judgments are consequently only admissible as non-conclusive evidence.

8.5 Are there any specific difficulties (whether as a matter of law or practice) in litigating, or seeking to enforce judgments or awards, against government authorities or the state?

Litigation

There are no difficulties as a matter of law in litigating against government authorities or the state. In practice, government authorities or state institutions rarely appear before the court and the decision will therefore be rendered *in absentia* (*verstek*). The difficulties arise on the enforcement process of such decisions as the government authorities or state institutions will typically challenge the application of such enforcement, consequently prolonging the process.

As a note, the typical litigation process before Indonesian courts lasts between two to three years until a final and binding decision is issued by the Supreme Court. Challenges also typically arise during the enforcement process, resulting in additional delays before the seizure of assets can be granted.

Arbitration

The general hurdle lies with the fact that arbitration awards are subject to an enforcement order to be issued by a local court (the District Court of Central Jakarta). Law No. 30 of 1999 on Arbitration and Alternative Dispute Resolution provides a public policy exception to grant an enforcement order which gives the courts a wide discretion to determine whether an arbitral award is enforceable in Indonesia.

When the state or state entities are involved, an enforcement order must be obtained through the Supreme Court. In order to preserve the state's assets, there is a likelihood that an enforcement order against such assets will be denied.

In addition, there is a tendency for lower courts in Indonesia to assume jurisdiction over the matters being disputed despite the existence of a valid arbitration clause in the underlying agreement. There are cases in point where the Supreme Court overruled the preceding judgments on the basis of an unfounded exercise of jurisdiction.

8.6 Are there examples where foreign investors in the renewable energy sector have successfully obtained domestic judgments or arbitral awards seated in your jurisdiction against government authorities or the state?

Yes. For example: *Case No. 250 K/PDT.SUS/2009, PT Bumigas Energi v. BANI.*

9 Updates and Recent Developments

9.1 Please provide a summary of any recent cases, new legislation and regulations, policy announcements, trends and developments in renewables in your jurisdiction.

Job Creation Law

The long-awaited Job Creation Law (often also referred to as the Omnibus Law) – designed to promote investment and the creation of jobs through economic growth in Indonesia – came into force on 2 November 2020. It contains the most significant legislative reforms to the Indonesian investment landscape in a generation as it seeks to amend, supplement and/or revoke numerous existing laws with the aim of easing investment and licensing restrictions. In relation to the power sector (including from renewable sources), the Job Creation Law and Government Regulation No. 25 of 2021 on the Implementation of the Energy and Mineral Resources Sector have introduced a number of changes, including:

(a) Expansion of the central government's role: the central government has become the sole issuing authority for all licences and permits in the electricity sector and has been granted the authority to stipulate norms, standards, procedures and criteria to be followed by regional governments when exercising their authorities.

(b) Clarification on the location of electricity generation within a Business Area: the location of electricity generation assets to supply end consumers within Business Areas can now be located outside such Business Areas.

(c) Reserve fund for electricity in rural areas: MEMR and the relevant provincial government must allocate reserve funds for the development of electricity supply infrastructure in rural and remote areas.

Positive List

The enactment of the Positive List has opened up a number of business sectors in Indonesia, including electricity generation from renewable energy sources, by lifting the maximum foreign ownership restrictions. Please refer to question 6.1.

Draft Bill and Presidential Regulation on Renewable Energy

Please refer to question 2.5.

Announcement of carbon neutrality by 2060

Recent news has seen the GoI announcing its ambitions to reach carbon neutrality by 2060.

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1 Overview of the Renewable Energy Sector

1.1 What is the basis of renewable energy policy and regulation in your jurisdiction and is there a statutory definition of 'renewable energy', 'clean energy' or equivalent terminology?

Under the Renewable Energy Act (Act on Special Measures Concerning the Procurement of Renewable Electric Energy by Operators of Electric Utilities), the definition of 'renewable energy' includes solar, wind, hydro, geothermal, biomass, and any other resource which may be designated by a cabinet order in the future.

Under the Act on Sophisticated Methods of Energy Supply Structures, the renewable energy resources include solar, wind, hydro, geothermal, heat from nature (including solar heat) and biomass.

1.2 Describe the main participants in the renewable energy sector and the roles which they each perform.

Since the introduction of the Feed-in Tariff (FIT) under the Renewable Energy Act in 2012, a variety of newcomers have participated in the renewable energy sector, such as trading companies, financial companies, real estate companies, venture companies specialised in renewable power, and their affiliates. Moreover, a significant number of foreign investors and developers who have experience in developing renewable power projects in other countries have participated in the Japanese renewable power market. In addition, recently, the traditional electricity utilities and their affiliates have also been participating enthusiastically in the renewable energy sector, especially since 2016, when the retail of electricity was fully deregulated, and the electricity retail market became competitive. Japanese banks are proactively providing finance to those projects, through both project finance schemes and corporate finance schemes.

1.3 Describe the government's role in the ownership and development of renewable energy and any policy commitments towards renewable energy, including applicable renewable energy targets.

Japan ratified the Paris Agreement in 2017, and the target is to reduce carbon emissions by 26.3% by 2030 in comparison with 2013, and by 80% by 2050. In addition, the Prime Minister Yoshihide Suga announced in October 2020 the new target to achieve carbon neutrality by 2050, and also announced in April 2021 a new, ambitious target to reduce carbon emissions by 46% by 2030 in comparison with 2013. The draft amended the fundamental energy plan of the Japanese government which was made public in July 2021 set a plan to procure 36% to 38% of the total electricity generation from renewable resources as of 2030.

In addition to the FIT under the Renewable Energy Act introduced in 2012, through which renewable power producers are entitled to sell electricity to the transmission and distribution utilities at a fixed price for a fixed term, there has been some further legislation for the development of renewable energy. For example, the Act on the Rational Use of Energy requires power generators to satisfy certain energy efficiency requirements. The Act on Sophisticated Methods of Energy Supply Structures requires all electricity retailers to procure at least 44% of their electricity from non-carbon power generation by 2030. The Act on Promotion of Global Warming Countermeasures requires large-scale electricity consumers to report the volume of their carbon emissions to the government annually. The amendment of the Act will enable local governments to set "promotion areas" regarding which the administrative procedures for the introduction of renewable energy projects will become simpler.

2 Renewable Energy Market

2.1 Describe the market for renewable energy in your jurisdiction. What are the main types of renewable energy deployed and what are the trends in terms of technology preference and size of facility?

Since the introduction of the FIT in 2012, solar photovoltaic (PV) projects (both utility-scale and households) have developed significantly. Onshore wind projects and biomass projects have also developed. While offshore wind projects have not yet developed due to the absence of a legal framework, the Japanese government has enacted a new law to entitle a selected developer to occupy a certain ocean area for 30 years. Thus, offshore wind projects are expected to develop in the future.

2.2 What role does the energy transition have in the level of commitment to, and investment in, renewables? What are the main drivers for change?

Under the Paris Agreement, Japan has announced its target to reduce carbon emissions by 26.3% by 2030 in comparison with 2013, and by 80% by 2050. To achieve this, the Japanese government has introduced and/or enhanced the FIT mechanism, a new law to make offshore wind projects feasible, as well as regulations requiring electricity retail companies to procure electricity from non-carbon resources. In addition, the government

has made efforts for the restarting and new development of nuclear power plants, as well as for the reduction of energy use on the consumers' side. Recently, the Japanese government has also started the discussion to prohibit old and inefficient coal power plants from operating by 2030. As such, the energy transition is one of the largest drivers for change.

2.3 What role, if any, has civil society played in the promotion of renewable energy?

Except for some industries (such as manufacturing industries consuming a lot of electricity) and local communities which suffer the nuisance arising from renewable energy projects (such as changes in the landscape, noise from wind projects, etc.), civil society is generally supportive of the development of the renewable energy sector. The introduction of the FIT in 2012 was carried out by the Japanese Democratic Party (left wing) soon after the huge earthquake in the north-west of Japan and the Fukushima nuclear accident. Even after the change of cabinet to the Liberal Democratic Party (right wing), the FIT has continued and new policies to further develop the sector (such as the introduction of a new law to promote offshore wind projects) have been adopted.

2.4 What is the legal and regulatory framework for the generation, transmission and distribution of renewable energy?

The Electricity Business Act provides the regulatory framework for the generation, transmission and distribution of electricity, including renewable energy electricity. A renewable power producer, of which the total generation capacity exceeds 10MW, is required to make a notification as a power generator to the Ministry of Economy, Industry and Trade (METI), and to comply with certain rules to make the grid stable. The transmission and distribution of renewable power projects are generally carried out by 10 large transmission and distribution utilities. These utilities are required to provide the grid service to renewable power producers, provided they satisfy certain requirements to maintain grid stability. Recently, local grid providers have been emerging, and they provide the grid service to renewable power producers by obtaining a transmission licence under the Act.

2.5 What are the main challenges that limit investment in, and development of, renewable energy projects?

There are a number of challenges. The first challenge is the frequent changes of policy and the difficulty of predicting future policy. One example is the introduction of a deadline on the commercial operation date (COD) for certain types of renewable power projects (including utility-scale solar PV projects) which had already obtained certification from METI without any requirement regarding a deadline on COD. The relevant project developers faced a situation where they would lose the high FIT purchase price unless they reached commercial operation by a certain deadline. The second challenge is grid connection issues. In particular, large-scale wind power projects have difficulty with grid connection, due to scarce grid capacity in rural areas in Japan. The enhanced curtailment risk in certain areas in Japan is a further challenge.

2.6 How are large utility-scale renewable power projects typically tendered?

A tender process is applicable to mega solar PV projects (2MW or larger), certain biomass power projects and offshore wind projects. For mega solar PV projects and certain biomass power projects, the tender process is generally held twice per year. The government decides the maximum capacity to be certified for each category and the maximum purchase price. The applicants who propose the lower purchase prices are selected until the total generation capacity of the selected applicants reaches the maximum capacity in the tender process. For offshore wind projects, the tender process is held for a project site in a certain ocean area designated by the government, and while the purchase price proposed by the applicants is an important factor in the selection, other factors such as the experience of the developer, the development plan and the contribution to the local community are also evaluated in the process.

2.7 To what extent is your jurisdiction's energy demand met through domestic renewable power generation?

In 2019, renewable energy accounted for only approximately 19.2% of the total electricity demand in Japan. Approximately 7.7% was from hydro projects, and approximately 7.6% was from solar PV, approximately 2.8% was from biomass projects, and approximately 1.1% was from other renewable projects. In the same year, approximately 35.1% of energy was from gas thermal power, approximately 28.2% was from coal thermal power, approximately 11.5% was from oil and other thermal power, and approximately 6.0% was from nuclear power.

3 Sale of Renewable Energy and Financial Incentives

3.1 What is the legal and regulatory framework for the sale of utility-scale renewable power?

Under the FIT, renewable power producers are entitled to sell the electricity generated from renewable power generators (certified by METI) to local general transmission and distribution utilities at a fixed price for a fixed term (generally 20 years).

In April 2022, the amendment of the Renewable Energy Act will become effective, and not FIT but Feed-in-Premium (FIP) will apply on 50kW or larger biomass (liquid fuel) projects, 1MW or larger solar PV, geothermal and small/medium hydro projects, and 10MW or larger biomass (other than liquid fuel) projects. Under the FIP, power producers will be entitled to receive a certain premium (of which amount equals to the difference between a certain standard price for the category and a certain reference price) in addition to the wholesale price or the agreed purchase price under the power purchase agreement (PPA) for a fixed term (generally 20 years).

3.2 Are there financial or regulatory incentives available to promote investment in/sale of utility-scale renewable power?

As mentioned in question 3.1 above, under the FIT, renewable power producers are entitled to sell the electricity generated from certified renewable power projects at a fixed price for a fixed period; this is the largest financial incentive available to promote investment. As mentioned above, from April 2022, the FIP will apply for certain renewable powers.

3.3 What are the main sources of financing for the development of utility-scale renewable power projects?

Japanese banks (in particular the four major Japanese banks, MUFG, SMBC, Mizuho and DBJ) are the main sources of

project financing for utility-scale renewable power projects. Other financial institutions such as trust banks, lease companies and securities companies are also sources of finance for utility-scale renewable projects. Foreign financial institutions also provide financing for such projects, particularly when the sponsors are foreign companies.

3.4 What is the legal and regulatory framework applicable to distributed/C&I renewable energy?

Distributed renewable power projects are also entitled to enjoy the FIT (or the FIP after April 2022). An electricity retail licence is not required if the power generator supplies electricity within a certain site or neighbouring sites without using the transmission line.

3.5 Are there financial or regulatory incentives available to promote investment in distributed/C&I renewable energy facilities?

In addition to the FIT (or the FIP after April 2022), which facilitates the development of renewable power projects, the wheeling service fee mechanism also provides incentives to promote investment in distributed renewable energy facilities. If a power project is developed on a particular site, and the generated electricity is supplied to a consumer on the same site or a neighbouring site without using the transmission line operated by a transmission utility, it will not be subject to the wheeling service fee. Furthermore, there have been discussions regarding introducing a mechanism under which if the generated electricity is supplied to a consumer within a local distribution line and without using a high voltage transmission line, a lower wheeling service fee will apply.

3.6 What are the main sources of financing for the development of distributed/C&I renewable energy facilities?

Equity investments by the developers as well as financing by banks (including local banks) and other financial institutions are the main sources of financing.

3.7 What is the legal and regulatory framework that applies for clean energy certificates/environmental attributes from renewable energy projects?

Non-fossil fuel value certificates can be issued for the generation of electricity from renewable power projects. Under the FIT, the Green Investment Promotion Organization (GIO), which provides funds for transmission utilities to pay the purchase price to renewable power generators, issues and sells the certificates to the market through the Japan Electric Power Exchange (JEPX). Renewable power projects which do not enjoy the FIT can issue the certificates by obtaining confirmation of the organisation designated by the Japanese government. These certificates can be traded on the market (through JEPX) and individually (outside the market).

3.8 Are there financial or regulatory incentives or mechanisms in place to promote the purchase of renewable energy by the private sector?

Electricity retail companies are obligated to procure at least 44% of their total procurement from non-fossil fuel sources by 2030, which means that it is necessary for these companies to procure non-fossil fuel value certificates from the market or individually of an amount corresponding to 44% of their total electricity procurement. Certain large electricity consumers are obligated to report the volume of carbon emissions annually to the government, and this information subsequently becomes publicly available. In order to enhance their reputation, large consumers are incentivised to procure electricity with a lower figure of carbon emissions.

4 Consents and Permits

4.1 What are the primary consents and permits required to construct, commission and operate utility-scale renewable energy facilities?

Depending on the area where the facility will be developed, the permissions of the local governor and/or other governmental authority will be necessary under the Agricultural Act, the Forest Act, the Natural Parks Act, the Landscape Act, and/or the City Planning Act, etc. In addition, an environmental impact assessment is required for certain large-scale hydro, wind, biomass and solar projects. Smaller projects might be subject to an environmental impact assessment under the local law. Recently, more local rules have been enacted due to criticisms regarding the disordered development of solar projects, etc.

4.2 What are the primary consents and permits required to construct, commission and operate distributed/C&I renewable energy facilities?

Depending on the area where the facility will be developed, the permission of the local governor will be necessary under the Agricultural Act, the Forest Act, etc. Recently, more local rules have been enacted due to criticisms regarding solar projects, etc.

4.3 What are the requirements for renewable energy facilities to be connected to and access the transmission network(s)?

The payment of a certain portion of the construction fees has recently become a necessary requirement for grid connection. In addition, certain requirements for maintaining grid stability must be satisfied, including a project entity's consent to curtailment without compensation. The maximum hours of curtailment without compensation differ depending on the area and the timing of the development.

4.4 What are the requirements for renewable energy facilities to be connected to and access the distribution network(s)?

The requirements for distribution networks are the same as those for transmission networks. Please refer to question 4.3 above.

4.5 Are microgrids able to operate? If so, what is the legislative basis and are there any financial or regulatory incentives available to promote investment in microgrids?

The Japanese government enacted an amendment to the Electricity Business Act in 2020. According to this amendment,

after 2022, distribution licences will be separate from transmission licences, and by obtaining a distribution licence from METI, microgrid business will be possible.

4.6 Are there health, safety and environment laws/regulations which should be considered in relation to specific types of renewable energy or which may limit the deployment of specific types of renewable energy?

There are multiple laws which should be considered in the development of renewable energy projects. Those laws include the following:

- The Forest Act regulates development works in the conservation forest areas and the forest areas included in the local forest plan. The Forest Act requires the developers to obtain the prior approval of the prefecture governor in order to conduct any development work in such areas.
- The Law on Prevention of Disasters Caused by Collapse of Steep Slopes regulates development works in the designated steep slopes areas.
- The Natural Parks Act regulates the development works in national park areas. The prior approval of or filing to the Ministry of Environment or the prefecture governor is required in order to carry out development work in such areas, depending on the area in a national park.
- The Environmental Impact Assessment Act requires certain industry-scale renewable projects to conduct an environmental impact assessment prior to starting the development.

5 Storage

5.1 What is the legal and regulatory framework which applies to energy storage and specifically the storage of renewable energy?

There is no clear legal framework which applies to energy storage. However, recently, based on a request from general transmission and distribution utilities, and in order to facilitate grid connection, some utility-scale renewable power projects have introduced behind-the-meter storage facilities.

5.2 Are there any financial or regulatory incentives available to promote the storage of renewable energy?

There are subsidy programmes for storage facilities, to be provided by the central government and certain local governments.

6 Foreign Investment and International Obligations

6.1 Are there any special requirements or limitations on foreign investors investing in renewable energy projects?

Under the inbound investment regulation, a prior notification to the Ministry of Finance and METI regarding the inbound investment in a renewable energy project is required. The waiting period for clearance is typically 30 days.

A foreign entity cannot be an applicant for a bid process for offshore wind projects. Therefore, foreign investors must set up a subsidiary in Japan or otherwise invest in a Japanese entity in order to participate in offshore wind projects in Japan.

6.2 Are there any currency exchange restrictions or restrictions on the transfer of funds derived from investment in renewable energy projects?

No; please note that for certain renewable power projects such as solar projects, project companies are required to pool a certain percentage of the sales amount for decommissioning, and the companies are not permitted to distribute that amount.

6.3 Are there any employment limitations or requirements which may impact on foreign investment in renewable energy projects?

Generally, no. For offshore wind projects, however, the number of local employees who would be employed by a project is one of the items to be evaluated in the bid process.

6.4 Are there any limitations or requirements related to equipment and materials which may impact on foreign investment in renewable energy projects?

Generally, no. For offshore wind projects, however, the extent to which a project will contribute to the creation of business and employment in Japan is one of the items to be evaluated in the bid process.

7 Competition and Antitrust

7.1 Which governmental authority or regulator is responsible for the regulation of competition and antitrust in the renewable energy sector?

In addition to the Fair Trade Commission, which is the regulatory body on general antitrust matters, METI and its Agency for Natural Resources and Energy, as well as the Electricity and Gas Market Surveillance Commission, are responsible for the regulation of competition and antitrust in the renewable energy sector.

7.2 What power or authority does the relevant governmental authority or regulator have to prohibit or take action in relation to anti-competitive practices?

The relevant governmental authorities have the authority to issue a correction order or to impose an administrative monetary penalty.

7.3 What are the key criteria applied by the relevant governmental authority or regulator to determine whether a practice is anti-competitive?

Grid connection is a typical anti-competitive issue for renewable projects. If a general transmission and distribution utility prioritises a renewable power producer in its group over a renewable power producer outside its group without any justifiable reason regarding grid connection, the Fair Trade Commission and METI will decide that such utility violates the antitrust regulation and the Electricity Business Act, and will issue a correction order or other administrative order.

8 Dispute Resolution

8.1 Provide a short summary of the dispute resolution framework (statutory or contractual) that typically applies in the renewable energy sector, including procedures applying in the context of disputes between any applicable government authority/regulator and the private sector.

Typically, the first instance of dispute resolution in the renewable energy sector is a district court, as in other sectors.

For certain disputes related to grid connection, arbitration and mediation led by the Electricity and Gas Market Surveillance Commission can be used under the Electricity Business Act.

For foreign investors, it may be possible to use international arbitration under the Energy Charter Treaty to protect their investment in Japan, by claiming a breach of the Treaty by the Japanese government.

8.2 Are alternative dispute resolution or tiered dispute resolution clauses common in the renewable energy sector?

In many agreements in renewable power projects, the first instance of dispute resolution is a district court, as in other sectors. In relation to biofuel supply agreements for biomass projects, it is sometimes seen that the dispute resolution mechanism is arbitration.

8.3 What interim or emergency relief can the courts grant?

A preliminary injunction might be available at a court if a court determines that damages (which will not be recovered easily) will occur on a plaintiff without a preliminary injunction.

8.4 Is your jurisdiction a party to and has it ratified the New York Convention on the Recognition and Enforcement of Foreign Arbitral Awards and/or the Convention on the Settlement of Investment Disputes between States and Nationals of Other States and/or any significant regional treaty for the recognition and enforcement of judgments and/or arbitral awards?

Yes, Japan is a party to and has ratified the New York Convention.

8.5 Are there any specific difficulties (whether as a matter of law or practice) in litigating, or seeking to enforce judgments or awards, against government authorities or the state?

The Japanese courts tend to respect the broad discretionary decision of the government authorities, particularly with regard to economic rights. Plaintiffs must provide clear arguments that their rights have been infringed by the government's action and that the government's action does not have any reasonable grounds.

8.6 Are there examples where foreign investors in the renewable energy sector have successfully obtained domestic judgments or arbitral awards seated in your jurisdiction against government authorities or the state?

There have not yet been any examples of this. Multiple foreign investors have made claims against the government regarding the reduction of the applicable purchase price for certain solar projects, which have not started commercial operation by a certain deadline designated by METI, and which deadline did not exist as of the issuance of METI's certification; however, there have not been any court decisions or arbitral awards in which such investors have successfully obtained a decision favourable for them.

9 Updates and Recent Developments

9.1 Please provide a summary of any recent cases, new legislation and regulations, policy announcements, trends and developments in renewables in your jurisdiction.

In 2020, the Japanese government enacted the amendment of the Renewable Energy Act (which will become effective in April 2022), by which an FIP instead of the FIT, will be introduced for certain types of renewable power projects (typically large-scale solar and wind projects). Under the FIP, renewable power projects will be entitled to receive the fixed premium amount (which is reviewed annually) plus the wholesale market price, which is volatile. The FIP aims to integrate these renewable energy projects into the general electricity market. The introduction of FIP and the decrease of the purchase price under FIP and FIP mechanisms lead to more corporate power purchase agreement projects, by which project developers may be able to expect the fixed amount of revenue from the high credit consumers, which is also preferable to project finance lenders.

In 2018, the Japanese government enacted a new act which provides a legal framework for an offshore wind project to exclusively use a certain ocean area for 30 years, for a selected developer, through a bid process. Through this law, the government expects to facilitate the development of offshore wind projects in Japan, and as of June 2021, the first bid winner was selected in the one ocean area, and the bid processes have started in three ocean areas. Multiple additional bid processes will also start in the coming years.

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1 Overview of the Renewable Energy Sector

1.1 What is the basis of renewable energy policy and regulation in your jurisdiction and is there a statutory definition of 'renewable energy', 'clean energy' or equivalent terminology?

Malta's regulatory framework on renewable energy can be divided into the following:

- **binding legislative Acts** and **Subsidiary Legislation** ('**SL**');
- **European Union** ('**EU**') **Directives**, **Regulations** and **Frameworks**;
- **international treaties**; and
- **local policy** which, while not binding, signals the political will of the Maltese Government in achieving its binding targets (these are further detailed under question 1.3).

Binding legislative Acts and SL

Renewable energy in Malta is regulated by the following Acts and SL:

- The Regulator for Energy and Water Services Act (the '**REWS Act**'), Chapter 545 of the Laws of Malta:
  - SL 545.11: Promotion of Energy from Renewable Sources Regulations;
  - SL 545.13: Electricity Market Regulations;
  - SL 545.16: Energy Efficiency and Cogeneration Regulations;
  - SL 545.23: Guarantees of Origin of Electricity from High Efficiency Cogeneration and Electricity, Heating and/or Cooling from Renewable Energy Sources Regulations;
  - SL 545.27: Feed-in Tariffs Scheme (Electricity Generated from Solar Photovoltaic Installations) Regulations;
  - SL 545.28: Biofuels (Sustainability Criteria) Regulations;
  - SL 545.29: Sale of Electricity Generated from Cogeneration Units Regulations;
  - SL 545.30: Dispute Resolution (Procedures) Regulations;
  - SL 545.31: Competitive Bidding Rules for Renewable Sources of Energy Installations Regulations; and
  - SL 545.32: Competitive Bidding Rules for Renewable Sources of Energy Installations (capacity between 400 kWp and less than 1000 kWp) Regulations.
- The Climate Action Act, Chapter 543 of the Laws of Malta.
- The Environment Protection Act, Chapter 549 of the Laws of Malta.

EU Regulations, Directives, and Frameworks

The EU's Renewable Energy Directive 2009/28/EC and Energy Efficiency Directive 2012/27/EU required the EU to fulfil at least 20% of its total energy needs with renewables by 2020. EU countries set out how they planned to meet the agreed individual targets through local policy, i.e., in their **National Renewable Energy Action Plans** ('**NREAPs**'). Progress towards these targets is measured every two years when countries publish national renewable energy progress reports. Malta's NREAP has a three-fold aim: to promulgate energy efficiency and affordability; to ensure environmental sustainability; and to achieve security of supply.

In March 2015, the energy union strategy (COM/2015/080) was published, setting out the first steps towards sustainable energy within the EU and aiming at building a union that provides European consumers, households and businesses with secure, sustainable, competitive and affordable energy.

EU Regulation 2018/1999 on the Governance of the Energy Union and Climate Action ('**EUCA Regulation**') was adopted in 2018 and establishes the legislative foundation, governance mechanism, strategies and measures designed to meet the targets of the energy union and the long-term EU greenhouse gas emission commitments (consistent with the Paris Agreement). In line with the EUCA Regulation and with the aim of meeting the EU's energy and climate target to cut greenhouse gas emission levels by 2030, Malta, like every EU Member State ('**MS**'), established a 10-year integrated **national energy and climate plan** ('**NECP**') for the period of 2021–2030. The NECP sets out the individual national overall targets for the share of energy from renewable sources in the gross final consumption of energy in 2020, with Malta's share being 10%. Furthermore, in December 2020, EU leaders agreed to set an ambitious target to cut greenhouse gas emissions by 55% compared to 1990 levels by 2030.

In 2019, the EU completed a comprehensive update of its energy policy framework in order to facilitate the transition

away from fossil fuels towards cleaner energy and to deliver on the EU's Paris Agreement commitments for reducing greenhouse gas emissions. This resulted in an agreement on a new energy rulebook, entitled the '**Clean energy for all Europeans package**', which marked a significant step towards the implementation of the energy union strategy, published in 2015.

Based on EU Commission proposals published in November 2016, the Clean energy for all Europeans package consists of eight legislative acts adopted between May 2018 and May 2019. Malta has one to two years to transpose the new directives into national law. The new rules are expected to bring considerable benefits from consumer, environmental and economic perspectives, as well as provide an important contribution to the EU's long-term strategy of achieving carbon neutrality by 2050.

International treaties

Malta is also party to several international energy treaties including the Kyoto Protocol (including the Doha Amendment), the UN Framework Convention on Climate Change, the Paris Agreement, the European Energy Charter Treaty and the Energy Charter Protocol on Energy Efficiency and Related Environmental Aspects.

Definitions under local law

Under Maltese law, '**energy**' is defined in the REWS Act as '*electrical energy, fuels, heat when transmitted as a commercial activity, and energy derived from renewable sources*'. The definition of renewable energy is found in various SLs of the REWS Act, including SLs 545.11, 545.13 and 535.23, where it is defined as '*energy from renewable non-fossil sources, namely wind, solar, aerothermal, geothermal, hydrothermal and ocean energy, hydropower, biomass, landfill gas, sewage treatment plant gas and biogases*'.

1.2 Describe the main participants in the renewable energy sector and the roles which they each perform.

In Malta, the Regulator for Energy and Water Services ('**REWS**') is a leading participant in the public sector in terms of renewable energy. The REWS Act establishes the functions of this entity, including the regulation of the Feed-in Tariffs ('**FIT**') Scheme discussed at questions 1.3 and 2.1. One of the eligibility criteria to participate in the FIT Scheme is that the electricity must be exclusively generated using solar radiation from solar photovoltaic ('**PV**') installations which are approved by the Regulator. In the FIT Scheme, applicants must submit a written application to the REWS and receive allocation of the FIT before start of works.

Wide-ranging responsibilities are given to the Regulator, including the regulation of practices, operations and activities in the energy and water sectors. This refers to the regulation of the national utilities and service providers for energy and water, retailers and operators in the regulated sectors (petrol stations, offshore bunkering companies, private operations of desalination plants, etc.), as well as tradesmen and service providers such as electricians, installers of renewable energy systems ('**RES**') and competent persons in the regulated sectors.

Another important player in this field is the Energy and Water Agency ('**EWA**'), a government agency established within the Ministry for Energy, Enterprise, and Sustainable Development. The EWA was set up in 2014 and its main functions include the formulation and implementation of the Government's national policies in the energy and water sectors, ensuring security, sustainability and affordability of energy and water in Malta. The role of the Energy Unit within the EWA is to guide the Government on the drafting and implementation of energy policies, centred around the security of supply, economic progress and environmental sustainability.

Enemalta p.l.c. ('**Enemalta**'), established in 1977, is the leading energy service provider in Malta, entrusted with the distribution of electricity and the development of the national electricity distribution network. As the national electricity network operator, Enemalta provides for the grid-connection of renewable energy sources, once written approval from the Regulator is obtained.

Another participant in the renewable energy sector is the Environment and Resources Authority ('**ERA**'), which is the regulatory agency responsible for the natural environment in Malta and issues operational permits as per the response to question 4.1 below.

1.3 Describe the government's role in the ownership and development of renewable energy and any policy commitments towards renewable energy, including applicable renewable energy targets.

The Government has a 66% shareholding in Enemalta, Malta's national electricity network operator, as referred to in question 1.2.

Malta's 2030 NECP was published in December 2019, as discussed under question 1.1. Malta's NECP is a policy document which signals the political will of the Government to attain the objectives of a sustainable, affordable and secure energy system which must follow a decarbonisation trajectory, whilst recognising certain challenges and opportunities brought about by national specificities such as spatial constraints, high population density and a mild Mediterranean climate.

Malta adopted its NECP in line with the EUCA Regulation. Malta's NECP includes binding targets and follows the scope of the energy union, covering its five dimensions: decarbonisation; energy efficiency; energy security; internal energy market; and research, innovation and competitiveness. The energy union was set up in March 2015, setting out the first steps towards sustainable energy within the EU.

Pursuant to Article 14(2) of the EUCA Regulation, Malta must submit an update of its latest NECP to the EU Commission in accordance with the dates stipulated therein. With every update of the NECP, Malta must modify its national objective, target, or contribution to reflect an increased ambition compared to that which is set out in the preceding NECP.

In addition to the NECP, and as discussed in response to question 1.1, Malta's NREAP sets out the RES mix that is expected to deliver the 10% target by 2020, the trajectory towards the target, and the measures to deliver such results. The NREAP should lead to the development expected post-2020. The NREAP focuses on PV technologies, solar water heating ('**SWH**'), the residential building sector in the context of hosting PV and SWH, energy from waste, renewable energy in transport, heat pumps for heating purposes, cooperation mechanisms, biomass imports, biofuels, and other RES technologies such as wind, geothermal, wave, hydropower and tidal sources. Malta is on target to achieve the 10% RES share. Official information on the share achieved in 2020 will be available at the end of 2021, once the relevant data has been collected and validated by the National Statistics Office ('**NSO**') and Eurostat.

As of December 2020, there are three main renewable energy sources in Malta: solar energy; micro-wind energy; and biogas plants. Given Malta's abundance of sunlight, there is a dominance of solar energy in the renewable energy market, which is also further encouraged by the NREAP. The Government has also set up a PV Scheme and a FIT Scheme. In order to encourage the better use of the energy being generated, the REWS administers the European Regional Development Fund

('**ERDF**'), which aims at encouraging the use of PV systems for residential use. Additionally, the FIT Scheme enables the sale of electricity produced by renewable energy sources which are connected to the national grid; in this case, solar energy from businesses and homes to the wider energy market. This means that the use of the solar energy generated can be maximised and that the benefit to the owner does not stop at the mere set-off with their electricity bill. The sale of electricity from PV installations systems is estimated to contribute around 5% of the local renewable energy connected to the grid.

2 Renewable Energy Market

2.1 Describe the market for renewable energy in your jurisdiction. What are the main types of renewable energy deployed and what are the trends in terms of technology preference and size of facility?

Solar energy is one of the main renewable energy sources deployed in Malta, as identified in Malta's 2017 NREAP. As secondary renewable energy sources, Malta also utilises wind and Combined Heat and Power ('**CHP**') generation. The FIT Scheme for PV panels is one of the central initiatives taken up by the Government in view of shifting towards the deployment of renewable energy. Further information on the PV Scheme and FIT Scheme is available in response to question 1.3.

Considering various factors specific to the island of Malta, such as its geographical position, climate, dense population, environmental and spatial constraints, the NREAP concludes that a RES mix should be used in Malta. The action plan considers two types of energy sources: indigenous; and imported. Indigenous renewable energy sources include electricity, heating and cooling, and transport. Renewable energy falling under indigenous sources includes micro-wind, energy generated from waste, PV panels, heat pumps, SWH and biodiesel. Imported renewable energy sources include biomass imports and biofuel.

In terms of wind power, the option of wind farms as a renewable energy source was seriously considered in the 2011 NREAP. However, since Malta has a very limited land mass and a deep seabed, few sites were found to be suitable to install such wind farms. Therefore, in the updated 2017 NREAP, the focus was changed to solar power as the preferred source of renewable energy.

2.2 What role does the energy transition have in the level of commitment to, and investment in, renewables? What are the main drivers for change?

One of the primary drivers for change in Malta's renewable energy sector is the EU, through its various policies and initiatives as outlined under question 1.1.

The coming into force of the EU Energy Efficiency Directive 2012/27/EU led to a period of rapid enhancement of the energy sector in Malta. The European Council's Malta-specific Recommendations on Energy emphasised the need for Malta to continue its efforts in diversifying its energy mix and sources, whilst maintaining energy efficiency.

On a supranational level, the EU launched the European Green Deal, with one of the targets being the achievement of net zero emission of greenhouse gases by 2050. The Prime Minister of Malta, Dr. Robert Abela, recently reaffirmed that Malta must reach its 2050 carbon neutrality objective, whilst also acknowledging the challenges faced by the country due to its geographical and territorial limitations.

2.3 What role, if any, has civil society played in the promotion of renewable energy?

The Maltese civil society has played a significant role in the promotion of sustainability and renewable energy in Malta. Indeed, the civil society contributed to the development of the NECP during the consultation process held by the EWA prior to its adoption. Moreover, involvement of the private sector in the energy transition is encouraged through the numerous funding opportunities available, both on European and local levels.

Environmental education, including education on the various renewable energy sources and their importance, is compulsory in the Maltese education system, and continues to play a role even at the level of tertiary education. This enables citizens to explore environmental issues, engage in problem-solving and become aware of their actions. Additionally, there are numerous non-governmental organisations ('**NGOs**') in Malta which target environmental concerns. Various economic entities and businesses across Malta and Gozo have also expressed their concerns, raising awareness regarding the need to deploy RES in Malta, and taking initiatives in this regard by installing company-wide RES and policies.

2.4 What is the legal and regulatory framework for the generation, transmission and distribution of renewable energy?

The generation, transmission and distribution of renewable energy is regulated by the REWS Act, as detailed under question 1.1.

2.5 What are the main challenges that limit investment in, and development of, renewable energy projects?

One of the main challenges limiting the deployment of renewable energy is the ability to maintain the efficiency, reliability, stability and consistency of the energy which is produced. In terms of wave power, for example, various challenges arise in Malta, including geographical and engineering challenges. Other challenges include the size of Malta's internal market, the scarcity of land resources, the high population density, the particularities of being a coastal and isolated region, the fragmented approach which has been adopted in relation to RES and the lack of incentives surrounding secondary renewable energy sources (such as wind, tidal, wave and geothermal power).

2.6 How are large utility-scale renewable power projects typically tendered?

Tendering in Malta is subject to the general regulatory framework on public procurement. The main legislation is the Public Finance Management Act, Chapter 601 of the Laws of Malta, along with SL adopted under this Act. Large utility-scale renewable power projects are specifically regulated by SL 601.05, the Public Procurement of Entities in the Water, Energy, Transport and Postal Services Sectors Regulations. In terms of electricity, these regulations apply to the provision or operation of fixed networks intended to provide a service to the public in connection with the production, transport or distribution of electricity, and the supply of electricity to such networks. Exceptions to the general public procurement framework are also provided in these regulations, in particular with respect to power purchase contracts; that is, contracts for the supply of energy or fuel for

the production of energy awarded by a contracting authority involved in the operation of fixed networks intended to provide a service to the public.

2.7 To what extent is your jurisdiction's energy demand met through domestic renewable power generation?

In 2019, the share of renewable energy in relation to gross final energy consumption amounted to 8.49%. The figures for 2020 are not yet published and will be available at the end of 2021. The shares of renewable energy relating to 2018, 2017 and 2016 are 8%, 7.3% and 6.2%, respectively. This indicates a steady year-on-year increase. The highest share of renewable energy in Malta is achieved in the heating and cooling sector. Additionally, as discussed under question 2.1, the largest contribution is provided by solar power, followed by heat pumps, biofuels and SWH.

3 Sale of Renewable Energy and Financial Incentives

3.1 What is the legal and regulatory framework for the sale of utility-scale renewable power?

Article 5(1)(g) of the REWS Act states that the Regulator has the function of regulating the price structure for practices, operations and activities relating to energy and water services and resources, and, where appropriate, shall establish mechanisms whereby the price to be charged for the acquisition, production, manufacture, sale, storage and distribution thereof is determined. While this provision does not make specific reference to renewable energy, it nonetheless establishes the framework for the sale of any type of energy.

SL 545.29 (as per question 1.1) regulates the sale of electricity generated from cogeneration units and supplied to the distribution system operator. Cogeneration, as defined by this SL, refers to the simultaneous generation of thermal energy and electrical or mechanical energy in one process.

As detailed in response to question 1.3, the regulatory framework for the sale of utility-scale renewable power also includes the FIT Scheme and the PV Scheme for privately owned PV systems.

3.2 Are there financial or regulatory incentives available to promote investment in/sale of utility-scale renewable power?

SL 545.11 (as per question 1.1) deals with the promotion of energy from renewable sources, whilst SL 545.27 (as per question 1.1) deals with the FIT Scheme, as detailed under questions 1.3. and 2.1.

Additionally, the REWS issues several 'Incentive Support Schemes' for domestic and business consumers, including PV Schemes, SWH Schemes and Heat Pump Water Heater ('**HPWH**') Schemes. The EWA also has several schemes and opportunities available to promote the upscale of renewable energy in Malta. Such opportunities include support schemes for research and innovation projects, the promotion of energy audits in small and medium-sized enterprises ('**SMEs**'), and the '+1MWp Scheme', which is a competitive process introducing an innovative approach for the allocation of government aid and grid priority for large-scale PV which, until recently, could not benefit from existing support mechanisms.

On 21 May 2021 the Ministry for Energy, Enterprise, and Sustainable Development announced the largest local funding package to date for large-scale projects involving renewable energy generation by private investors. The call for proposals is targeted at projects with energy generation capacities of between 40KWP and 1MWP. Ten calls over a 12-month period will be issued covering a grand total energy generation of 31MW.

3.3 What are the main sources of financing for the development of utility-scale renewable power projects?

In addition to those mentioned in response to questions 1.3, 3.1 and 3.2, there are various funding opportunities available both at European and local levels for the deployment of renewable power projects. At the European level, funding opportunities such as the Horizon Europe programme, the Innovation Fund, the ERDF and the European Green Deal are targeted towards the transformation of the energy sector to a cleaner and greener one. At a local level, Malta Enterprise Corporation, an economic development agency in Malta, in collaboration with the EWA, supports undertakings carrying out investments which lead to improved energy efficiency. Various renewable energy schemes such as those referred to in the answer to question 1.3 are also available in Malta.

3.4 What is the legal and regulatory framework applicable to distributed/C&I renewable energy?

With the exception of the PV and FIT Schemes, distributed renewable energy projects are subject to the same legal and regulatory framework as non-renewable energy projects, as discussed in response to questions 1.1 and 3.1. There are no specific regulations which are applicable solely to distributed/C&I renewable energy.

3.5 Are there financial or regulatory incentives available to promote investment in distributed/C&I renewable energy facilities?

Apart from the incentives and funding opportunities referred to in response to questions 3.1, 3.2 and 3.3, there are currently no specific financial or regulatory incentives which are applicable solely to distributed/C&I renewable energy facilities in Malta.

3.6 What are the main sources of financing for the development of distributed/C&I renewable energy facilities?

See question 3.2.

3.7 What is the legal and regulatory framework that applies for clean energy certificates/environmental attributes from renewable energy projects?

SL 545.23 (as per question 1.1) establishes the framework for the issuing of 'guarantee of origin certificates' for electricity produced from high-efficiency cogeneration and/or renewable energy sources. The purpose of such certification is to provide consumers with the share or quantity of energy from renewable sources in an energy supplier's mix, ensuring that the origin of the electricity produced from renewable energy sources can be guaranteed in accordance with criteria which are based on three concepts: objectivity; transparency; and non-discrimination.

Article 17 of SL 545.11 (as per question 1.1) states that the REWS shall ensure that the certification procedures that are applied to plants and associated transmission and distribution network infrastructure for the production of electricity, heating

or cooling from renewable energy sources, and to the process of transformation of biomass into biofuels, are proportionate and necessary. Article 17(2) of SL 545.11 provides further details on the certification process; the Regulator shall ensure that the process is clearly coordinated and defined, that comprehensive information is available, that there is no discrimination between applicants and that the particularities of the individual renewable energy technologies are considered. The Fifth Schedule of this SL, introduced in 2012, deals with the certification of installers and training programmes.

3.8 Are there financial or regulatory incentives or mechanisms in place to promote the purchase of renewable energy by the private sector?

There are no specific incentives or mechanisms in place to promote the purchase of renewable energy by the private sector; however, incentives and funding opportunities are available, as detailed in response to questions 2.1, 3.1, 3.2 and 3.3.

4 Consents and Permits

4.1 What are the primary consents and permits required to construct, commission and operate utility-scale renewable energy facilities?

The distinction in the types of power generation plants, between renewable energy and non-renewable energy sources, is reflected in the Maltese legal framework in the environmental legislation and building or construction laws. The permits for each differ, respectively.

Applications for building permits for the development of infrastructure spanning more than 4,000 square meters qualify as major applications under the Development Planning (Procedure for Applications and their Determination) Regulations, SL 552.13, and require an Environmental Impact Assessment ('**EIA**').

All building and construction permits are assessed and determined by the Planning Authority ('**PA**'), on the merits of whether an application is major or otherwise. On the other hand, operational permits are issued by the ERA.

With respect to the location of the development of a solar farm, where this is within, partly within, or adjacent to Special Areas of Conservation and Special Protection Areas, a plan-level Appropriate Assessment and Strategic Environmental Assessment ('**SEA**') would also be required.

Additionally, if the project is considered a major application, a construction permit will need to be acquired from the PA within approximately 100 days from the validation date. If the system exceeds 16 Amps, an aggregate small power plant licence to construct a generation station will need to be acquired from the Regulator. If the system does not exceed 16 Amps, a Development Notification Order ('**DNO**') is required from the PA. The DNO usually takes 30 days to issue a planning decision. Lastly, for certain energy industries, an Integrated Pollution Prevention and Control ('**IPPC**') permit is required. IPPC permits are also considered operational permits in accordance with the Industrial Emissions (Integrated Pollution Prevention and Control) Regulations, SL 549.77.

4.2 What are the primary consents and permits required to construct, commission and operate distributed/C&I renewable energy facilities?

The applicable laws are the same as for utility-scale renewable energy facilities, as detailed in response to question 4.1.

4.3 What are the requirements for renewable energy facilities to be connected to and access the transmission network(s)?

The energy producer must enter into a power purchase agreement with the grid operator, Enemalta, as part of the grid connection procedure, as outlined in SL 601.05 (as per question 2.6). Following the acceptance of a proposal for connection and access to the transmission network, the parties sign the power purchase agreement setting out the terms and conditions of the connection.

4.4 What are the requirements for renewable energy facilities to be connected to and access the distribution network(s)?

The regulatory framework is the same as that for utility-scale renewable energy facilities, as detailed under questions 4.1 and 4.3.

4.5 Are microgrids able to operate? If so, what is the legislative basis and are there any financial or regulatory incentives available to promote investment in microgrids?

A number of microgrids operate in Malta. The general framework outlined in response to question 1.1 applies and there are no specific laws regulating microgrids. There are numerous research and development funding opportunities available in this regard, as outlined under question 3.3.

4.6 Are there health, safety and environment laws/regulations which should be considered in relation to specific types of renewable energy or which may limit the deployment of specific types of renewable energy?

While there are no health, safety, and environment laws/regulations which are specific to the renewable energy sector, companies in the renewable energy sector, much like companies in any other sector, are expected to conform to the health and safety regulations, namely those found under the Occupational Health and Safety Authority Act (Chapter 424 of the Laws of Malta) and its subsidiary legislation, as well as any laws protecting the environment, namely the Environment Protection Act (Chapter 549 of the Laws of Malta) and its subsidiary legislation.

5 Storage

5.1 What is the legal and regulatory framework which applies to energy storage and specifically the storage of renewable energy?

Energy storage, including renewable energy, is not specifically dealt with under Maltese legislation. However, under Malta's NREAP, the development of large-scale efficient energy storage technology is mentioned; it is suggested that this will extend the versatility of PV systems for stand-alone systems. The NREAP recognises that this is not particularly relevant for Malta since practically all of Malta is covered by the grid; however, it is noted that storage can, nonetheless, be an effective way of shifting the load profile.

5.2 Are there any financial or regulatory incentives available to promote the storage of renewable energy?

There are no financial or regulatory incentives available in Malta which specifically promote the storage of renewable energy.

There are, however, general funding opportunities and schemes available, as mentioned at section 3 above.

6 Foreign Investment and International Obligations

6.1 Are there any special requirements or limitations on foreign investors investing in renewable energy projects?

Regulation (EU) 2019/452 establishes a comprehensive framework for the screening of foreign direct investment ('**FDI**') in the EU on the grounds of security or public order. This Regulation is directly applicable in Malta. According to this Regulation, where the owner, titleholder or ultimate beneficial owner ('**UBO**') of FDI which enters the EU involves a foreign investor who is a third-country national, or is an undertaking of a third country, each MS must assess whether that investment will have implications on the security and public order of that MS, other EU MSs, or even the EU itself.

Article 4 of the Regulation provides a list of factors that may be taken into consideration by MSs or the European Commission when determining whether FDI is likely to affect security or public order. In this respect, potential effects on the following factors are considered, *inter alia*:

- critical infrastructure, whether physical or virtual, including **energy**;
- critical technologies and dual-use items including **energy storage**, quantum and nuclear technologies, as well as nanotechnologies and biotechnologies; and
- supply of critical inputs, including **energy** or raw materials, as well as food security.

In Malta, the National FDI Screening Office ('**NFDISO**') has been set up, implementing the Regulation. The scope and remit of the NFDISO is to screen new FDI projects, joint ventures with a foreign component, and the transfer of any shares and/or controlling interests in existing companies where the owner, titleholder or UBO is a foreign investor who is a third-country national or is an undertaking of a third country. On 18 December 2020, Malta's National Foreign Direct Investment Screening Office Act ('**NFDISO Act**') was published, which came into force on 11 October 2020. The NFDISO Act is also applicable in this regard, establishing the structure and functions of the NFDISO.

6.2 Are there any currency exchange restrictions or restrictions on the transfer of funds derived from investment in renewable energy projects?

There are no currency exchange restrictions or restrictions on the transfer of funds derived from investment in renewable energy projects.

6.3 Are there any employment limitations or requirements which may impact on foreign investment in renewable energy projects?

There are no employment limitations or requirements which may impact foreign investment in renewable energy projects.

6.4 Are there any limitations or requirements related to equipment and materials which may impact on foreign investment in renewable energy projects?

There are no limitations or requirements related to equipment and materials which may impact foreign investment in renewable energy projects.

7 Competition and Antitrust

7.1 Which governmental authority or regulator is responsible for the regulation of competition and antitrust in the renewable energy sector?

The Office for Competition within the Malta Competition and Consumer Affairs Authority ('**MCCAA**') is the national entity tasked with the promotion of sound competitive practices to further the attainment and maintenance of well-functioning markets for the benefit of consumers, businesses and the economy in Malta, including the renewable energy sector.

7.2 What power or authority does the relevant governmental authority or regulator have to prohibit or take action in relation to anti-competitive practices?

The functions of the Office for Competition within the MCCAA include the promotion and enhancement of competition, the safeguarding of consumer interests and welfare, the promotion of the national metrology strategy and the performance of any other functions assigned to it under any other regulations.

The Director General for Competition shall ensure that the provisions of the Competition Act, Chapter 379 of the Laws of Malta ('**Competition Act**') are observed by all, and has the power to carry out investigations either of his own motion, at the request of the Minister responsible for competition matters, upon a reasonable allegation in writing of a breach of the provisions of the Competition Act, or at the request of any designated National Competition Authority ('**NCA**') of any other MS or the European Commission.

Additionally, Directive (EU) 2019/1, the 'ECN+ Directive', was adopted to standardise the status of the NCAs. This Directive will be transposed into Maltese law by 4 February 2021. Amendments to the Competition Act and the Malta Competition and Consumer Affairs Authority Act will be brought into effect, together with the promulgation of two new SLs, the Immunity from Penalties and Regulation of Penalties in Cartel Investigations Regulations, and the Mutual Assistance between National Competition Authorities Regulations.

7.3 What are the key criteria applied by the relevant governmental authority or regulator to determine whether a practice is anti-competitive?

Anti-competition practices can be divided into two main categories:

- **prohibited agreements and practices** (cartels) – this includes any agreement, decision or practice that: (i) directly or indirectly fixes the purchase or selling price or other trading conditions; (ii) limits or controls production, markets, technical development or investment; (iii) partitions markets or sources of supply; (iv) imposes the application of dissimilar conditions to equivalent transactions with other parties outside such agreement, thereby placing them at a competitive disadvantage; or (v) makes the conclusion of contracts subject to the acceptance by the other parties of supplementary obligations which, by their nature or according to commercial usage, have no connection with the subject of such contracts; and
- **abuse of dominant position** – this includes a situation in which one or more undertakings abuse their dominant position by: (i) directly or indirectly imposing an excessive or unfair purchase or selling price or other unfair trading

conditions; (ii) limiting production, markets or technical development to the prejudice of consumers; (iii) applying dissimilar conditions, including price discrimination to equivalent transactions with different trading parties; and/or (iv) making the conclusion of contracts subject to the acceptance by the other party of supplementary obligations which, by their nature or according to commercial usage, have no connection with the subject of such contracts.

8 Dispute Resolution

8.1 Provide a short summary of the dispute resolution framework (statutory or contractual) that typically applies in the renewable energy sector, including procedures applying in the context of disputes between any applicable government authority/regulator and the private sector.

SL 545.30, the Dispute Resolution (Procedures) Regulations, applies to the resolution of disputes by the REWS which may arise between (i) authorised providers, and/or (ii) consumers and authorised providers. This SL does not specifically mention renewable energy; however, since renewable energy matters fall under the Regulator, this SL would apply to the renewable energy sector.

Disputes which arise between authorised providers may, at the request of one of the parties, be referred to the REWS. Upon notification, the REWS shall initiate an investigation into the dispute, and must issue a determination to solve the dispute within four months from the date when it was notified of the dispute. If the matter is not resolved within four months, and the party seeking redress has not initiated legal proceedings before the ordinary courts or other adjudicative forums, the REWS may, at the request of any party to the dispute, initiate an investigation and give a decision.

Disputes between authorised providers and consumers may also be referred to the REWS. In such cases, the consumer must *prima facie* demonstrate that he/she has been affected by the act or omission of the authorised provider giving rise to the dispute. Upon receipt of such reference, the REWS shall notify all the parties to the dispute and investigate the matter.

A decision made by the REWS shall be binding on the parties to the dispute. In terms of disputes between authorised providers and consumers, the decision may be binding on consumers only if they are informed of its binding nature in advance and have specifically accepted this.

Additionally, the Administrative Review Tribunal, as established by the Administrative Justice Act, Chapter 490 of the Laws of Malta, shall also be competent to hear and determine appeals from decisions made by the REWS.

In terms of disputes which may arise between government authorities or the REWS and the private sector, Article 469A of the Code of Organisation and Civil Procedure (Chapter 12 of the Laws of Malta) shall also come into play, dealing with the judicial review of administrative actions.

8.2 Are alternative dispute resolution or tiered dispute resolution clauses common in the renewable energy sector?

For disputes between operators, one would need to resort to the First Hall Civil Court if an arbitration clause is not inserted in the contract. Arbitration clauses are common when the parties are based in different jurisdictions. Alternative dispute resolution clauses are common in the context of power purchase agreements.

8.3 What interim or emergency relief can the courts grant?

There are various interim remedies, termed 'precautionary warrants', under Maltese law, depending on the remedy being sought. These comprise the following:

(i) warrant of seizure;
(ii) warrant of seizure of a commercial going concern;
(iii) garnishee order;
(iv) warrant of impediment of departure;
(v) warrant of arrest of aircraft; and
(vi) warrant of prohibitory injunction.

8.4 Is your jurisdiction a party to and has it ratified the New York Convention on the Recognition and Enforcement of Foreign Arbitral Awards and/or the Convention on the Settlement of Investment Disputes between States and Nationals of Other States and/or any significant regional treaty for the recognition and enforcement of judgments and/or arbitral awards?

Malta ratified the New York Convention on the Recognition and Enforcement of Foreign Arbitral Awards in 2000 and declared that it will apply only to the recognition and enforcement of awards made in the territory of another Contracting State. The Convention only applies to Malta with respect to arbitration agreements concluded after the date of Malta's accession to the Convention, that is, 22 June 2000.

Malta ratified the Convention on the Settlement of Investment Disputes between States and Nationals of Other States on 3 November 2003, and this came into effect in Malta on 3 December 2003.

Apart from the abovementioned Conventions, EU Regulation 1215/2012 of 12 December 2012 on the recognition and enforcement of judgments in civil and commercial matters is also directly applicable in Malta.

8.5 Are there any specific difficulties (whether as a matter of law or practice) in litigating, or seeking to enforce judgments or awards, against government authorities or the state?

There are no specific difficulties in litigating or seeking to enforce judgments or awards against government authorities or the State.

8.6 Are there examples where foreign investors in the renewable energy sector have successfully obtained domestic judgments or arbitral awards seated in your jurisdiction against government authorities or the state?

In Malta, there have been no instances in which a foreign investor obtained domestic judgments or arbitral awards against government authorities or the State in the context of renewable energy projects.

9 Updates and Recent Developments

9.1 Please provide a summary of any recent cases, new legislation and regulations, policy announcements, trends and developments in renewables in your jurisdiction.

One of 2020's biggest headlines with regard to renewable energy was the European Green Deal and the proposed European

Climate Law. Both these initiatives reaffirm the EU's ambition in relation to climate change and renewable energy targets.

In Malta, following a Cabinet reshuffle in 2020, former MEP Miriam Dalli is now Malta's Minister for Energy, Enterprise, and Sustainable Development. Hon. Dalli has been a very vocal champion of the European Green Deal and the carbon neutrality policy within the European Parliament. Now as a member of the Maltese cabinet, her vision clearly encompasses a focus on renewable energy with the aim of attracting investment in renewables, as well as the possibility of stronger connections to the European electricity grid.

This is backed by the Maltese Prime Minister Dr. Robert Abela, who stated that Malta must shift resolutely towards renewable energy whilst recognising the need for a green transition to a zero-carbon economy. Environment and Climate Change Minister Aaron Farrugia has also stated that Malta's 'Low Carbon Development Strategy' is being finalised and that transition to a low- or zero-emission transportation system is a key commitment.

Additionally, when examining Malta's progress in terms of the deployment of renewable energy, it is evident that there has been a steady incline in renewable power generation in terms of Malta's energy demand, as detailed at question 2.7. Malta remains ambitious in this regard, as is reflected in the NREAP and NECP.

Gayle Kimberley has worked in various fields of economic law, in both the private and public sector, as well as in international organisations. Her main areas of focus are EU law, energy regulation with a focus on renewables, competition regulation and other regulatory matters. She is experienced in litigation before the EU courts and international arbitration. Gayle spent nine years in Brussels, six of which were as a legal adviser within the EU Council's legal service. She has advised EU Member States and local government and was also appointed as an expert for the European Economic and Social Committee. She also headed the EU and International Affairs department of the Malta Gaming Authority. Gayle's expertise and varied experience in EU law mean she is well versed in all aspects of EU law, policy and EU funding opportunities. She has even assisted clients in obtaining EU funding for renewable energy projects, such as through the European Innovation Fund.

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Nicole Sciberras Debono joined GVZH Advocates in 2019 and focuses mainly on iGaming, TMT, intellectual property and competition law; she also assists in various litigation and arbitration matters. During her time at university, Nicole was part of one of the largest European Law student organisations, ELSA, and was the Director for Social Policy and Legal Publications with the ELSA Malta National Board for the term 2016/2017. She spent a semester furthering her studies at the University of Ferrara, Italy, where she read International Intellectual Property Law and European Contract Law.

Nicole is knowledgeable on the European Union funding provided for a broad range of projects and programmes, covering areas such as regional and urban development, employment and social inclusion, agriculture and rural development, research and innovation, and humanitarian aid. She has assisted various clients with the application process on obtaining EU and national funding through the grants and funding available through programmes managed nationally.

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GVZH Advocates is one of Malta's leading legal practices, composed of top-tier professionals and rooted in decades of experience in the Maltese legal landscape. Built on the values of acumen, integrity and clarity, the firm is dedicated to providing the highest levels of customer satisfaction, making sure that legal solutions are soundly structured, rigorously tested, and meticulously implemented. The firm understands that today's business environment requires legal advisers who have both the necessary skills and expertise geared towards addressing specific and technical issues in the context of complex projects, transactions, and disputes. The firm is regularly involved in cross-border transactions, tapping into a wide network of international consultants, all experts in their respective field, ensuring seamless, timely and quality advice on a wide spectrum of commercial matters.

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Mexico


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1 Overview of the Renewable Energy Sector

1.1 What is the basis of renewable energy policy and regulation in your jurisdiction and is there a statutory definition of 'renewable energy', 'clean energy' or equivalent terminology?

Energy policy, as a whole, is dictated by Mexico's Federal Constitution (the "Constitution") and by the international treaties to which Mexico is a party. Such policy is implemented through secondary legislation, grid rules and market guidelines. The concept of "clean energy" is defined in the Energy Industry Law (*Ley de la Industria Eléctrica*, or "LIE") as those energy sources and power generation processes whose emissions or residue, if existing, do not exceed the thresholds established in applicable regulations, including wind, solar, hydro, biomass, geothermal and other commonly known sources.

Although the provisions in the Constitution, international treaties and implementing legislation support the development of clean energy, the current administration has been acting against such principles with the intent to reinstate the national monopoly by establishing unjustified barriers against private energy projects in general and, in particular, against renewable sources on the basis of their intermittent nature and, supposedly, their negative effects on grid reliability.

1.2 Describe the main participants in the renewable energy sector and the roles which they each perform.

The main participants in the renewable energy sector are (i) the Ministry of Energy (*Secretaría de Energía*, or "SENER"), which is in charge of the country's energy policy, (ii) the Energy Regulatory Commission (*Comisión Reguladora de Energía*, or "CRE"), the constitutional autonomous regulator which, among other matters, is vested with the authority to grant power generation permits, (iii) the National Energy Control Centre (*Centro Nacional de Control de Energía*, or "CENACE"), a government agency which acts as independent grid operator, and (iv) *CFE Transmisión* and *CFE Distribución*, two separate government entities that own and operate the country's transmission and distribution assets.

In addition, several private entities participate in the renewable energy sector as generators, qualified suppliers, traders and qualified users.

1.3 Describe the government's role in the ownership and development of renewable energy and any policy commitments towards renewable energy, including applicable renewable energy targets.

In addition to its role as policy maker (SENER), regulator (CRE), system operator (CENACE), and transmission assets owner and operator, the government participates in the generation, supply and trading of power and related products through the *Comisión Federal de Electricidad* ("CFE") and its wholly owned subsidiaries and affiliates.

The official renewable energy target adopted by the Mexican government, which is reflected mainly in the General Climate Change Law (*Ley General de Cambio Climático*) and in the Energy Transition Law (*Ley de Transición Energética*), is to have 35% of total generation based on renewables or clean energy by 2024; however, it has already been recognised that this target will not be met.

2 Renewable Energy Market

2.1 Describe the market for renewable energy in your jurisdiction. What are the main types of renewable energy deployed and what are the trends in terms of technology preference and size of facility?

Although renewable energy projects have been developed in Mexico since the early 2000s, the market is still dominated by non-renewable energy sources, primarily natural gas-fired facilities. While the renewable energy market is developing in the country, it is currently confronting barriers imposed by the administration. The main and preferred sources or types of renewable energy existing in Mexico are wind, solar and geothermal. Biomass projects are beginning to develop, although they are not representative of the current market.

2.2 What role does the energy transition have in the level of commitment to, and investment in, renewables? What are the main drivers for change?

Energy transition is a key driver in Mexico's efforts to achieve a gradual shift from fossil-based power generation to renewable sources of energy to meet the country's clean energy and emission reduction goals. Mexico's energy transition regulation intends to provide clarity and confidence to investors seeking to capitalise on climate risks and opportunities. The main driver for change is sustainability through a portfolio of projects

looking to achieve energy efficiency by means of increased participation in viable clean energy projects. In reality, however, the current administration does not seem to abide by the regulation on energy transition as it seeks to upgrade and operate fossil-fuelled power plants owned by CFE under the excuse of grid reliability.

2.3 What role, if any, has civil society played in the promotion of renewable energy?

Generally speaking, Mexican civil society has not played a relevant role in the promotion of renewable energy in the country. Nonetheless, many non-governmental organisations operate in Mexico, including in the energy sector.

2.4 What is the legal and regulatory framework for the generation, transmission and distribution of renewable energy?

Power generation is a regulated activity in Mexico and, as such, it requires a prior permit by CRE. In 2014, power generation became open to public and private participation; however, grid and market operation, as well as energy transmission and distribution activities, are managed exclusively by CENACE, *CFE Transmisión* and *CFE Distribución*, respectively.

2.5 What are the main challenges that limit investment in, and development of, renewable energy projects?

Since the current administration took office in 2018, the Mexican power industry has been under continuous stress, affecting investments and hindering the development of renewable energy projects. The administration has taken many and separate measures, mostly in the form of changes to the legal and operational framework that directly impact the development, operation and viability of privately owned power projects, with emphasis on renewable energy projects. Those measures include limiting the issuance or amendment of permits and changing dispatch rules based on economic merit in order that projects owned by CFE, most of which are fossil fuel-based, have dispatch priority over all projects, including renewable energy projects.

2.6 How are large utility-scale renewable power projects typically tendered?

Before the current administration took office in 2018, large utility-scale power projects were tendered mainly through two different schemes: (i) long-term (20–25 years) capacity and power contracts awarded directly by CFE through international bidding proceedings; and (ii) long-term (15 years) power and clean energy certificate contracts awarded directly by *CFE Suministrador de Servicios Básicos* ("CFE SB"), a subsidiary of CFE. The current administration has cancelled all such tenders and CFE SB can now purchase power from its own dirty and expensive plants. Furthermore, CFE is bidding the construction of more fossil-fuel power generation facilities under a build-operate-transfer ("BOT") structure.

2.7 To what extent is your jurisdiction's energy demand met through domestic renewable power generation?

According to the most recent Development Program for the National Electric System ("PRODESEN") developed by SENER for the 2021–2035 period, as of 30 April 2021, renewable power generation (excluding nuclear and efficient cogeneration) represented 28,714 MW, an increase of 12.19% over the same figure for 2020.

3 Sale of Renewable Energy and Financial Incentives

3.1 What is the legal and regulatory framework for the sale of utility-scale renewable power?

In Mexico, there is no specific legal or regulatory framework for these activities. The same framework applies to power generation as a whole.

3.2 Are there financial or regulatory incentives available to promote investment in/sale of utility-scale renewable power?

The main incentive that is available in order to promote investment in renewable power is the ability of the projects to opt for accelerated depreciation of their assets for tax purposes. Mexican development banks also provide soft loans in order to promote investment in these projects.

3.3 What are the main sources of financing for the development of utility-scale renewable power projects?

Financing of renewable power projects in Mexico is mostly provided by the country's state-owned banks (*Nacional Financiera*, *Banco Nacional de Obras y Servicios Públicos* and *Banco Nacional de Comercio Exterior*); however, Mexican and foreign commercial banks, multinational (e.g. the International Finance Corporation and the Inter-American Development Bank) and export credit agencies (Exim banks), as well as private equity funds, are also active in the sector. Project bonds have also been a source of refinancing of completed projects.

3.4 What is the legal and regulatory framework applicable to distributed/C&I renewable energy?

Distributed/C&I generation is broadly regulated by the LIE, and the CRE has issued guidelines that provide the applicable legal framework for the development and operation of distributed/C&I renewable energy.

3.5 Are there financial or regulatory incentives available to promote investment in distributed/C&I renewable energy facilities?

Please see the response to question 3.2 above.

3.6 What are the main sources of financing for the development of distributed/C&I renewable energy facilities?

Please see the response to question 3.3 above.

3.7 What is the legal and regulatory framework that applies for clean energy certificates/environmental attributes from renewable energy projects?

Mexican law, specifically the LIE and regulations issued by the sector governmental authorities, provides a general legal

framework for the recognition, issuance and trading of Clean Energy Certificates ("CELs"). Broadly speaking, CELs are certificates that are issued by CRE which credit the production of power (1 CEL = 1 MWh) that is generated from clean sources. The Clean Energy Certificates Market is a component of the Wholesale Energy Market (*Mercado Eléctrico Mayorista*) that enables market participants to trade CELs in a spot market.

3.8 Are there financial or regulatory incentives or mechanisms in place to promote the purchase of renewable energy by the private sector?

Government-owned generators and suppliers are treated in the same manner as private entities. Therefore, the same regulations apply to both sectors. Please see the response to question 3.2 above for more details.

4 Consents and Permits

4.1 What are the primary consents and permits required to construct, commission and operate utility-scale renewable energy facilities?

The main permits are (i) a power generation permit, issued by CRE, (ii) positive interconnection studies issued by CENACE, and (iii) interconnection agreement entered into with *CFE Transmisión* or *CFE Distribución*, as applicable. From an environmental perspective, the main permits are: (i) the environmental impact authorisation and the forest-land use change authorisation from the Ministry of Environment and Natural Resources ("SEMARNAT"); (ii) operation of solar, wind and hydropower projects do not require air emissions environmental operating licences; however, other technologies like landfill gas to energy, may require this licence for operation; (iii) hazardous waste generator from SEMARNAT, even if these are generated in small volumes; (iv) registration as a special management waste generator from the state ministry of environment; (v) concession for the use of water; and (vi) wastewater discharge permit from the National Water Commission (*Comisión Nacional del Agua*, or "CONAGUA"), if applicable.

Some projects may require construction permits and concession from CONAGUA for the use or occupation of bodies of water or their federal zone or for pluvial drainage works.

Other local permits required for these types of projects include municipal land use and construction licences, civil protection and operating licences.

Land agreements and rights of way also become a relevant element in the development of renewable energy projects.

4.2 What are the primary consents and permits required to construct, commission and operate distributed/C&I renewable energy facilities?

Please see the response to question 4.1 above.

4.3 What are the requirements for renewable energy facilities to be connected to and access the transmission network(s)?

Connection and access to the transmission grid is achieved through obtaining a power generation permit from CRE, positive interconnection studies from CENACE and the execution of an interconnection agreement with *CFE Transmisión* or *CFE Distribución*, as applicable.

4.4 What are the requirements for renewable energy facilities to be connected to and access the distribution network(s)?

Please see the response to question 4.3 above.

4.5 Are microgrids able to operate? If so, what is the legislative basis and are there any financial or regulatory incentives available to promote investment in microgrids?

No. Transmission and distribution grids must be owned and operated by the federal government through *CFE Transmisión* and *CFE Distribución*.

4.6 Are there health, safety and environment laws/regulations which should be considered in relation to specific types of renewable energy or which may limit the deployment of specific types of renewable energy?

There are no safety or environmental laws specific to renewable energy projects or which may affect their development. General environmental laws and regulations applicable to infrastructure or industrial project equally apply to these types of projects.

In certain cases, municipal authorities have established local taxes to renewable energy projects, especially those in states which have a high natural potential for renewable energy. These laws are, in most cases, unconstitutional and end up being abrogated; however, it is essential to monitor these types of efforts.

5 Storage

5.1 What is the legal and regulatory framework which applies to energy storage and specifically the storage of renewable energy?

Storage of electricity is a practically unregulated activity in Mexico. In general, it is treated as a limited source of generation which must comply with certain requirements to inject power into the grid for the short-term market. In certain cases, CFE has outbid contracts requesting a component of storage as part of the generation facilities.

5.2 Are there any financial or regulatory incentives available to promote the storage of renewable energy?

As storage facilities have been used as a component of generation projects, the same financial incentives that are offered to renewable projects (please see the answer to question 3.5 above) may be available for storage technology.

6 Foreign Investment and International Obligations

6.1 Are there any special requirements or limitations on foreign investors investing in renewable energy projects?

The Mexican Constitution promotes the investment, competition and free market in the power sector, with the exception of the activities of transmission and distribution, which are reserved to the Mexican state.

There are no limitations for foreign investment to participate in the capital of Mexican companies engaged in the generation, supply and trading of electricity and related products.

6.2 Are there any currency exchange restrictions or restrictions on the transfer of funds derived from investment in renewable energy projects?

There are no currency exchange restrictions or controls in Mexico. Investors are free to repatriate their funds at any time.

6.3 Are there any employment limitations or requirements which may impact on foreign investment in renewable energy projects?

There are no special employment law limitations or restrictions in Mexico applicable to renewable energy sources.

Mexican Federal Labor Law (*Ley Federal del Trabajo*) has a clear inclination to protect the interests of the workers over those of the employers. Therefore, companies must carefully administrate the relationship with their employees and implement strategic prevention and control measures to limit their exposure.

According to a recent amendment to several labour, social security and tax laws, in connection with subcontracting of work, companies must directly employ the workers that they need to carry out their core business activity. Companies can only subcontract services outside their corporate purpose and main economic activity. Outsourcing of personnel is prohibited.

In the case of renewable energy companies, the employees necessary to carry out the essential activities to generate electricity must be hired directly by the renewable energy entity. Other personnel dedicated to auxiliary or complementary activities may be subcontracted under specialised services agreements with third parties. Failure to comply with these new regulations may result in substantial negative effects for the relevant entity, including fines, the prohibition to deduct payments of fees under service agreements that do not meet the new requirements, and the loss of value-added tax ("VAT") payments made to service providers (which would not be reimbursed by the tax authorities). In extreme cases, it may be considered tax fraud, giving rise to criminal liability.

6.4 Are there any limitations or requirements related to equipment and materials which may impact on foreign investment in renewable energy projects?

Generally, all goods must pay import duties and taxes when entering the country. However, generation and related equipment and materials can be subject to preferential import tariffs and quotas, based on the Customs Laws and regulations related to export and production promotion mechanisms, and when they are imported from countries which have Free Trade Agreements with Mexico.

Mexico is active in imposing protective measures, including antidumping quotas, investigations and tariffs on specific equipment. In that sense, and contrary to constitutional and other legal provisions intended to promote the development of renewable energy, photovoltaic ("PV") solar panels are considered by the customs authorities subject to import taxes (not based on their tariff classification as solar cells, but as they are considered electric generators). These tariffs have been challenged by the affected parties and courts have ruled against the imposition of import tariffs on solar panels.

7 Competition and Antitrust

7.1 Which governmental authority or regulator is responsible for the regulation of competition and antitrust in the renewable energy sector?

The *Comisión Federal de Competencia Económica* (Federal Economic Competition Commission or "COFECE") is a constitutional autonomous regulator which oversees the application and enforcement of antitrust legislation as well as the regulation of antitrust matters. COFECE has broad powers to regulate competition matters related to the energy sector. Applicable energy laws require COFECE's opinion in order for CRE to approve transmission and supply tariffs and grant permits for integrated activities. Likewise, the CRE, as the industry regulator, has a legal mandate to promote efficient development and competition in the power industry.

7.2 What power or authority does the relevant governmental authority or regulator have to prohibit or take action in relation to anti-competitive practices?

COFECE has broad powers to investigate cartel behaviour on a *per se* basis, abuse of dominant position actions or events, prohibited mergers, and to declare the absence of competition or the existence of barriers to competition. Sanctions and rulings pursuant to such conducts may result in significant fines (in some cases, up to 10% of the total annual revenues of companies and/or individuals for the last fiscal year), prohibitions for individuals to further participate in the management and/or supervision of companies or governmental entities, unwinding or divestment of businesses and, in the case of cartel conducts, criminal prosecution. In addition, indemnification obligations may apply.

Furthermore, CRE has the authority to revoke permits in case of anticompetitive conducts.

7.3 What are the key criteria applied by the relevant governmental authority or regulator to determine whether a practice is anti-competitive?

In a market where CFE has a dominant position (given its former monopoly status), it is difficult for the CRE to impose anti-competitive sanctions to participants. However, cartel behaviour in Mexico is punishable on a *per se* basis, without the need to demonstrate actual effects over the relevant market or markets. For abuse of dominant position investigations, COFECE performs a thorough analysis in order to determine the relevant market and the assessment of market power of the relevant participant.

8 Dispute Resolution

8.1 Provide a short summary of the dispute resolution framework (statutory or contractual) that typically applies in the renewable energy sector, including procedures applying in the context of disputes between any applicable government authority/regulator and the private sector.

It is common practice in Mexico for government agencies and state-owned enterprises like CFE and Petróleos Mexicanos ("PEMEX"), especially in the energy, infrastructure and

construction sectors, to include arbitration clauses in their contracts with private companies. Not only does the legislation in the energy sector allow these agencies and enterprises to agree upon arbitration, but also, in recent years, such agencies and enterprises in the energy sector have adopted a policy to include arbitration clauses in the model contracts used in public bids or tenders.

The change in administration in 2018 as well as the ensuing administrative restructure has led to a growing number of both domestic and international arbitrations regarding construction, infrastructure and energy and contractual disputes between state-owned companies and private parties.

8.2 Are alternative dispute resolution or tiered dispute resolution clauses common in the renewable energy sector?

Yes, as stated above, in Mexico, it is very common for arbitration clauses to be included in contracts in the renewable energy sector. This tendency is, among other reasons: (i) due to the complexity of the disputes that arise in the context of said contractual relationships; and (ii) due to the increased use of arbitration clauses in contracts concluded with sector government agencies and enterprises.

The International Chamber of Commerce and the International Centre for Dispute Resolution have been the preferred international institutions in the energy sector; however, the London Court of International Arbitration ("LCIA") has increased its Mexican caseload in the last few years. This has been mainly motivated by the inclusion of LCIA clauses in contracts entered into by CFE and PEMEX.

8.3 What interim or emergency relief can the courts grant?

Under Mexican Law, parties may request interim measures in the context of an arbitration either: (i) from a Mexican Court; or (ii) from the arbitral tribunal or emergency arbitrator, in cases where the procedural rules chosen by the parties provide for such option. An interim measure ordered by an arbitral tribunal or emergency arbitrator must be recognised as binding and enforced by a Mexican Court, if so requested, regardless of the state where it is ordered, except if some specific and limited grounds provided by the Mexican law are met.

Under Mexican law, and in international arbitration generally, interim relief is justified only in urgent cases in which irreparable damage is likely to occur and where the party seeking relief is likely to prevail.

Judges and arbitrators both have wide discretion in determining whether to order interim relief. In addition, both Mexican Courts and arbitral tribunals may condition the issuance of interim relief on the posting of collateral by the party seeking interim measures to secure the issuance of the order.

8.4 Is your jurisdiction a party to and has it ratified the New York Convention on the Recognition and Enforcement of Foreign Arbitral Awards and/or the Convention on the Settlement of Investment Disputes between States and Nationals of Other States and/or any significant regional treaty for the recognition and enforcement of judgments and/or arbitral awards?

Mexico ratified the 1958 New York Convention on the Recognition and Enforcement of Foreign Arbitral Awards (the "New York Convention") on 14 April 1971 with no reservations; the New York Convention entered into force on 13 July 1971 in Mexico.

Mexico is also a member state to the Inter-American Convention on Extraterritorial Validity of Foreign Judgments and Arbitral Awards, which it signed on 12 February 1986 and ratified on 2 November 1987.

Mexico ratified the Convention on the Settlement of Investment Disputes between States and Nationals of Other States (the "ICSID Convention") on 27 July 2018 and it entered into force on 26 August 2018.

8.5 Are there any specific difficulties (whether as a matter of law or practice) in litigating, or seeking to enforce judgments or awards, against government authorities or the state?

Amongst others, we consider that the following difficulties may be faced when enforcing a judgment against a Mexican government authority before Mexican Courts:

(i) The Mexican government authority, as part of the Mexican State, may argue that it has immunity from execution. Pursuant to Article 4 of the Federal Civil Procedure Code (*Código Federal de Procedimientos Civiles*), no execution or enforcement orders or actions may be issued against Mexico and its entities. In light of this provision, it is highly unlikely that a Mexican judge would order the attachment of assets owned by Mexico in the event that it does not comply voluntarily with an award or a judgment.

(ii) Even if arbitration clauses are usually included in contracts between private parties and government or state-owned enterprises in the energy sector, the Mexican government authority may argue that certain aspects of their commercial relationship may be considered non-arbitrable under Mexican law, and the aforementioned may be used as grounds to set aside an award entirely or partially or to refuse its recognition and enforcement.

For instance, according to the Hydrocarbons Law, a dispute relating to the validity of an administrative rescission or an administrative early termination of the contract cannot be submitted to arbitration. In this sense, under the Law on Public Works and Related Services and the Law on Procurement, Leasing and Services in the Public Sector, both the validity of an administrative rescission and the early termination of contracts cannot be subject to arbitration. In this context, only contractual terminations are subject to arbitration. The effects and scope of these limitations are extensively discussed in Mexico. In addition, the Law on Public-Private Partnerships provides that the revocation of concessions and authorisations in general, as well as acts of authority (*fait du prince*), may not be referred to arbitration. Under such law, the resolution of disputes relating to the legal validity of any administrative act may only be settled by federal courts.

As an example, in *Corporación Mexicana de Mantenimiento Integral, S. de R.L. de C.V.* ("COMMISA") *v. Pemex-Exploración y Producción S.A. de C.V.* ("PEP"), after an award was issued against PEP, Mexican Courts, in set aside proceedings, annulled the award by considering that a Mexican legislation held that the early termination of certain administrative contracts involving public entities was not an issue that could be submitted to arbitration and applied retroactively to COMMISA's claims. In enforcement proceedings, the New York Court recognised the award on the grounds that the Mexican Court's retroactive application of the 2009 legislation violated COMMISA's fundamental rights. Following the decision of the U.S. Courts, PEP ultimately agreed to settle its debt to COMMISA for approximately $435 million in April 2017.

8.6 Are there examples where foreign investors in the renewable energy sector have successfully obtained domestic judgments or arbitral awards seated in your jurisdiction against government authorities or the state?

The Mexican Congress and the government, through SENER, CRE, and CENACE have issued different laws and regulations intended to limit participation of private entities in the renewable energy sector, which have been perceived as contrary to constitutional principles, international treaties and legal provisions. Affected parties have challenged the validity of these measures through constitutional recourses (*amparos*) and courts have consistently suspended or declared the unconstitutionality of these actions.

Additionally, there are a great number of cases in which foreign investors have successfully obtained arbitral awards against government authorities in Mexico or the Mexican state regarding disputes related to the energy sector. However, investment arbitration cases have not been initiated significantly yet.

9 Updates and Recent Developments

9.1 Please provide a summary of any recent cases, new legislation and regulations, policy announcements, trends and developments in renewables in your jurisdiction.

Background

In 2013, the Mexican Congress approved a Reform to the Mexican Constitution on energy matters (the "Energy Reform") which ended the state monopoly on the generation, supply and commercialisation of electricity. Private parties may now participate in those activities, while the Mexican State maintains the monopoly on transmission and distribution activities through *CFE Transmisión* and *CFE Distribución*, as well as the control and planning of the national grid through CENACE, a government agency under the Ministry of Energy.

The Energy Reform enables the participation of the private, public and social sectors in the industry, under principles of free competition, and promotes renewable and clean energy sources.

The guiding principles for the energy sector contained in the Mexican Constitution and implementing legislation include: (i) efficient operation; (ii) non-discriminatory open access to the grid; and (iii) a wholesale electric market (*Mercado Eléctrico Mayorista* or "MEM"), where all participants could sell and purchase electric energy and associated products.

Current government's policy

During the 2018 elections, Andres Manuel López Obrador ("AMLO"), Mexico's current President, expressed his clear intention to centralise the industry and recover the market power that CFE had before the Energy Reform.

Since his arrival to power, AMLO and his *Morena* party have issued numerous legal and regulatory measures, the main purpose of which is to reinstate the national monopoly by displacing private participants and restricting renewable energy generators alleging that their intermittent nature affects the security and reliability of the national grid.

Amongst these, the different authorities (SENER, CRE and CENACE) have issued the following actions, most of which have now been annulled by courts as they have been deemed unconstitutional:

(i) SENER's CELs Decree: eliminated the restriction over power plants in operation before the Energy Reform (mainly owned by CFE) to credit CELs in the market. This restriction was originally established to incentivise the development and construction of new renewable power plants. Without this restriction, the CELs market would be flooded with certificates awarded to old plants, killing the expected economic incentive. The CELs Decree has been annulled by Mexican Courts.

(ii) CENACE COVID Decree: CENACE suspended the pre-operative interconnection tests for solar PV and wind power plants, under the pretext that due to the reduced consumption of power caused by the COVID-19 pandemic, connecting these plants to the grid would compromise the security system. The CENACE Decree was suspended by courts and later annulled due to its unconstitutionality. Affected plants have entered into operation.

(iii) SENER's Reliability Policy: through the Reliability Policy, SENER attempted to establish new criteria and requirements to restrict the dispatch and interconnection of renewable power plants to the national system. It has been declared unconstitutional by Mexican courts and revoked by SENER.

(iv) CRE/CFE's Increase of Wheeling Tariffs: CRE approved the increase of wheeling charges for private projects in operation before the Energy Reform (grandfathered) in percentages of up to 800%, which rendered such projects economically unviable. These increases have also been challenged and suspended by courts.

Reform to the LIE

On 9 March 2021, a reform to the LIE (the "LIE Reform") was enacted, including, among others, the following changes:

(i) to modify the dispatch order of power plants interconnected to the SEN to privilege plants owned by CFE (eliminating economic merit order);

(ii) to condition the granting of generation permits by CRE to the SEN's planning criteria issued by SENER, including the possibility of not granting permits to intermittent plants;

(iii) to allow for CELs to be granted to old power plants;

(iv) to eliminate the obligation of CFE SB to purchase power exclusively through public auctions (*subastas*), which guaranteed lowest generation costs;

(v) to order CRE to revoke self-supply grandfathered permits; and

(vi) to review the legality and profitability of power purchase agreements ("PPAs") with independent power producers.

The LIE Reform is currently suspended by Mexican courts as its provisions are deemed to violate the Constitution and international treaties to which Mexico is a party.

Acknowledgment

The authors would like to thank Mario Valencia (International Trade/WTO Partner), Nadia González (Labour & Employment Counsel), Luis Manuel Rosendo (Energy), Juan Carlos Burgos (Competition), Santiago Oñate (Arbitration), Ana Sofía Sapiña (Arbitration) and Adriana Lozano (Arbitration) for their contributions to this chapter.

Carlos de Maria y Campos specialises in the areas of energy (power and oil & gas) and infrastructure projects, with an emphasis on project finance. Clients benefit from his longstanding experience gained in complex operations, deep knowledge and specialist abilities, allowing him to offer a unique advisory service and delivering thorough and efficient solutions to every project. He is recognised by *Chambers and Partners*, *Latin Lawyer*, *LatinFinance*, *The Legal 500*, and *Who's Who Legal* as a thought leader and expert lawyer in Energy and Projects.

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Oman


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1 Overview of the Renewable Energy Sector

1.1 What is the basis of renewable energy policy and regulation in your jurisdiction and is there a statutory definition of 'renewable energy', 'clean energy' or equivalent terminology?

The Law for the Regulation and Privatisation of the Electricity and Related Water Sector promulgated by Royal Decree 78/2004 (the "**Sector Law**") forms the basis for regulations applying to, among other things, renewable energy in the Sultanate of Oman ("**Oman**"). The Authority for Public Services Regulation ("**APSR**"), pursuant to the Sector Law, issues policies it deems appropriate in relation to electricity regulation, including renewable energy.

There is no statutory definition for renewable or clean energy in Oman. The Sector Law does not include a specific regime for solar plants. It defines generation as "the production of electricity by any manner". The provisions of the Sector Law relating to generation, therefore, apply equally to all types of generation plants, including solar plants.

1.2 Describe the main participants in the renewable energy sector and the roles which they each perform.

The main participants in the renewable energy sector in Oman do not differ from those participating in the conventional power generation sector. They include:

Sponsors: Local and international private sector developers competing, through a public tender, for the rights to develop, own and operate a renewable energy facility in Oman. Sponsors would typically be responsible for financing and overseeing the development of the plant.

Oman Power and Water Procurement Company SAOC ("OPWP"): A wholly government-owned company responsible for ensuring that there is sufficient electricity and water production capacity available at the lowest cost to meet the growing demands in Oman. It is a member of Nama Group and it enjoys a statutory monopoly over the purchase of bulk power and water from all independent (water and) power projects ("**I(W)PPs**") within Oman. OPWP procures power and water through a public tender process.

APSR: As the independent regulator of the power and related water sector, APSR's responsibilities include issuing regulations to encourage the production and sale of electricity using renewable energy sources.

1.3 Describe the government's role in the ownership and development of renewable energy and any policy commitments towards renewable energy, including applicable renewable energy targets.

Under the Sector Law, the government, through OPWP, procures the development of new capacity, renewable or otherwise, through a competitive process in which local and foreign developers/sponsors participate. The government does not currently own any renewable energy facilities. Generation facilities, including those using renewable energy sources, are wholly owned by private developers.

The government's renewable energy policy is issued by APSR and implemented primarily by OPWP through floating tenders for projects using renewable energy. APSR has, for example, announced a number of initiatives to promote the use of renewable energy in Oman, the latest of which is SAHIM – an initiative that enables households and businesses to install rooftop photovoltaic ("**PV**") solar systems at their premises and to be compensated for solar PV generated electricity exported via the Bulk Supply Tariff. The aim is to install rooftop PV systems at 30% of residential premises in Oman.

In December 2020, APSR announced plans for a competitive tender for the appointment of a developer to deploy grid-connected solar PV systems at selected residential premises. The tender suggested that the winning developer would follow the same competitive process used in independent power projects ("**IPPs**") where the winning developer would be responsible for the procurement, development, ownership and operation of the rooftop PV systems.

The government has announced that it aims to have 30% of Oman's electricity demands produced through renewable means by 2030. More than two-thirds of this will be met by solar energy, with the remainder met by wind and waste-to-energy. SAHIM and the two Manah solar projects (see question 2.1 below) are examples of measures taken by the government to achieve those goals.

2 Renewable Energy Market

2.1 Describe the market for renewable energy in your jurisdiction. What are the main types of renewable energy deployed and what are the trends in terms of technology preference and size of facility?

Renewable energy projects remain relatively new in Oman. The main type of renewable energy source being utilised is solar, followed by wind energy.

The Dhofar Wind Power Project, comprising 13 wind turbines (developed by GE) with a total generating capacity of 50MW, located in Harweel, began generating electricity in August 2019. The project is sponsored by the Rural Areas Electricity Company ("**RAECO**") and the UAE's Masdar. RAECO is responsible for the electrification of rural areas and secures electrification funding through a mechanism established by the Sector Law.

Smaller wind-based schemes are envisioned in the Al Duqm, Dhofar and Sharqiyah zones and OPWP plans to procure wind energy through IPPs.

Until recently, there was only one pilot solar project in Oman, "Al Mazyounah". The project emerged from APSR's renewable energy initiative (following a 2008 study) as one of the first pilot projects and was implemented in a way designed to establish a framework for subsequent power purchase agreement ("**PPA**") based renewable energy projects. The importance of the Al Mazyounah project was in inverse proportion to its size; the intention was always to build on Oman's successful record of large utility-scale I(W)PPs by establishing a framework that would facilitate private sector investment in renewable energy projects. Since then, Petroleum Development Oman ("**PDO**") has procured a 100MW solar project, mainly for self-consumption.

OPWP awarded a 500MW solar PV IPP, which reached financial close in 2020. OPWP has also announced plans to procure two further solar PV projects with a combined capacity exceeding 1,000MW (Manah I and II). The list of qualified bidders for the two projects was issued by OPWP in 2020.

Oman has announced ambitious plans in the renewable hydrogen space. Sohar Industrial Port has announced its plans to turn the port into a hub for lower-cost hydrogen replacing traditional hydrocarbons, along with plans to develop a 3.5GW of solar power capacity. State-owned OQ Alternative Energy has teamed up with Belgium's DEME Concessions to develop a green hydrogen project in Duqm. The first phase of the project is projected to include a 250MW to 500MW electrolyser capacity, using both wind and solar energy.

In 2021, PDO announced a new 100MW solar PV IPP in part of its Block 6 concession, with the aim of supplying clean-energy based electricity to oil and gas facilities in the north of Oman. The project procurement will be based on the Amin IPP; however, a large-scale battery storage component will also be included (offering battery storage of around 30MW). In June 2021, PDO announced plans to procure a 100MW wind IPP that will also be located within its Block 6 concession area. Once commissioned, this will be the country's second wind IPP. PDO expects to float the tender for this project by the end of 2021.

2.2 What role does the energy transition have in the level of commitment to, and investment in, renewables? What are the main drivers for change?

The main drivers for the transition towards renewable energy are: (i) to increase the use of environmentally friendly technologies; and (ii) to diversify away from conventional fossil-fuel reliant energy. This has become increasingly crucial in recent years as the government expects the supply of domestic natural gas to reduce over the next decade due to the increased cost of gas production.

2.3 What role, if any, has civil society played in the promotion of renewable energy?

Vision 2040, a strategy document, takes into account insight from civil society; it includes the environment as one of its priorities. It envisages a future strategy, which will adopt a transformation towards a green economy manifested in renewable energy sources to promote environmental sustainability, reduce financial constraints and support revenue from non-traditional natural resources.

2.4 What is the legal and regulatory framework for the generation, transmission and distribution of renewable energy?

The Sector Law regulates the generation, transmission and distribution of renewable energy, which is the same law that governs the generation, transmission and distribution of all types of electricity through conventional means.

As mentioned above, APSR has published policies and regulations for rooftop solar panels, which only apply to solar energy.

2.5 What are the main challenges that limit investment in, and development of, renewable energy projects?

The main historical challenges included: (i) the high costs of renewable energy compared with the relatively low cost of gas-fuelled facilities; (ii) issues relating to the intermittency and low-volume output generated from renewable energy sources; and (iii) low competition among developers. However, these issues have diminished substantially in recent years; the cost of solar power energy has reduced dramatically and the competition among developers participating in the sector in Oman and the broader Gulf region has been intense. While intermittency remains an issue, technical developments and reduced costs in relation to storage are expected to assist in addressing intermittency issues, just as they would elsewhere in the world.

2.6 How are large utility-scale renewable power projects typically tendered?

Renewable power projects are tendered through a competitive process under the Sector Law. Sponsors would compete through a public tendering process where the successful sponsor is required to finance, construct and operate the production facility. Sponsors are then remunerated under a long-term PPA.

2.7 To what extent is your jurisdiction's energy demand met through domestic renewable power generation?

Most of Oman's energy demands are met through conventional energy sources. To date, the only operational large-scale renewable energy utility projects are the Amin Solar PV IPP, which has a capacity of 100MW and was procured by PDO, mainly for self-consumption, and the 50MW Dhofar Wind Power Project. OPWP has awarded a 500MW solar PV IPP, the Ibri II Solar PV IPP, which reached financial close in 2020. Once fully operational, the Ibri II Solar PV IPP will be the largest utility-scale renewable energy project in Oman.

3 Sale of Renewable Energy and Financial Incentives

3.1 What is the legal and regulatory framework for the sale of utility-scale renewable power?

Utility-scale renewable power is procured through a competitive tender process under the Sector Law, and purchased by OPWP

under a long-term PPA. Other market players, including PDO, have followed a similar process for procuring their renewable power requirements.

3.2 Are there financial or regulatory incentives available to promote investment in/sale of utility-scale renewable power?

There are currently no financial or regulatory incentives for investment in or sale of utility-scale renewable power, other than through the SAHIM programme in relation to rooftop solar (for further details, please see question 3.4 below).

3.3 What are the main sources of financing for the development of utility-scale renewable power projects?

The main source of financing for the development of utility-scale renewable power projects is private funding through commercial banks and export credit agencies.

3.4 What is the legal and regulatory framework applicable to distributed/C&I renewable energy?

Save in respect of the SAHIM net metering systems discussed below, the distribution of electricity is currently limited to licensed supply and distribution companies. There is, however, no effective distribution and supply competition, as there are three main licensed distribution and supply companies, each with geographical monopoly. Arrangements found in other jurisdictions such as wheeling and bilateral trading of electricity are not currently permitted in Oman. APSR did, however, conclude in its 2018 annual report that the introduction of supply competition is feasible, as the necessary building blocks are already in place and well established.

Specific regulations apply to small-scale distributed solar projects in Oman, namely SAHIM 1 and SAHIM 2. APSR launched SAHIM in 2017. SAHIM 1, the first phase of SAHIM, provided for large households and businesses to install small-scale grid-connected PV solar systems at their own cost; such customers were compensated for any excess solar PV generated electricity exported to a licensed system at the relevant approved tariff (the Bulk Supply Tariff).

SAHIM 2 aims to facilitate large-scale deployment of small-scale grid-connected PV systems (3–5 kWp) for around 10–30% of residential premises in Oman. Unlike SAHIM 1, under SAHIM 2, the costs of procuring, installing, operating and maintaining residential solar PV systems will be met by private sector entities, rather than the customers. Such private sector entities should recover their investment and operating costs through long-term performance-based contracts with licensed suppliers. Customers will have no ownership right over the solar PV systems, but will benefit from lower electricity costs during the life of the system.

In addition, the Sector Law permits self-consumption; the applicable licensing requirements and availability of exemptions depend on the size and location/connectivity of the facility. Under the Sector Law, there is the concept of "Autogenerator", where a customer establishes its own captive generation facilities (renewable or otherwise). This autogeneration concept is based on generation being for the benefit of the same person that generates the electricity, namely a person generating electricity for the purposes of "Self-Supply" (the supply of electricity by a person to himself, his employees or commercial business, by means other than via a Transmission System or a Distribution System of a Licensee). Autogeneration benefits from certain automatic exemptions under the Sector Law: an exemption from OPWP's purchase monopoly (no capacity limit is stated in relation to the size for the purposes of this exemption); and an exemption from licensing. Autogenerators are exempt from obtaining a licence provided that the activity undertaken is for the purposes of Self-Supply. In order to benefit from an exemption, the System of such Autogenerator or its Production Facilities must not be connected to the System of any Licensee or, if connected, the connection and the Production Facilities of such Autogenerator or its System must (subject to certain exceptions) not deliver electricity to the Licensee's System to which it is connected.

In January 2021, the Ministry of Energy and Minerals, the government body in charge of formulating the country's energy policy, announced that Oman is planning to introduce regulations that would allow for the bilateral trading of electricity between large consumers and generators. This could potentially permit large consumers to enter into arrangements whereby those consumers could contract with small-scale renewable generators that would generate enough electricity to reduce the consumer's reliance on the grid, which would in turn enable such consumers to achieve cost savings. This was confirmed in APSR's Forward Work Programme for 2021. As of the date of writing, such regulations have not been issued.

3.5 Are there financial or regulatory incentives available to promote investment in distributed/C&I renewable energy facilities?

No financial or regulatory incentives are currently available to promote investment in distributed renewable energy facilities.

3.6 What are the main sources of financing for the development of distributed/C&I renewable energy facilities?

As discussed in question 3.4 above, only three main distribution companies are licensed by APSR and, in the absence of competition, there cannot be real incentives to finance the development of distributed renewable energy facilities. Any competition barriers would need to be addressed before we can start seeing any financing flowing in to develop the distributed energy facilities.

3.7 What is the legal and regulatory framework that applies for clean energy certificates/environmental attributes from renewable energy projects?

There is no market in Oman for the sale or trading of renewable energy certificates and/or environmental attributes.

3.8 Are there financial or regulatory incentives or mechanisms in place to promote the purchase of renewable energy by the private sector?

The private sector does not directly purchase energy or electricity from generators; therefore, there are no specific incentives in place. Arrangements found in other jurisdictions such as wheeling and bilateral trading of electricity, are not currently permitted in Oman.

4 Consents and Permits

4.1 What are the primary consents and permits required to construct, commission and operate utility-scale renewable energy facilities?

The Sector Law defines the regulated activities, including the generation, transmission, distribution, export, import or supply of electricity. The Sector Law requires anyone undertaking a regulated activity to be authorised by a licence or exemption.

APSR may grant an exemption to any person undertaking or applying to undertake any of the regulated activities from obtaining a licence or from some of the licence conditions wherever the public interest requires. The requirements regarding exemptions, including the requirement for a specific application to be made, the ability of APSR to attach conditions to an exemption and the timing for an exemption application, are set out in the Sector Law.

Prior to tendering any large utility-scale project, a preliminary environmental clearance must be obtained from the recently established Environment Authority. After going through a competitive process, the developer will need to obtain a final permit, a designation from APSR that the developer is an appropriate person to undertake this project and, finally, as referenced above, a licence to generate electricity using the relevant facility. In addition, the developer will need to obtain the applicable construction permits from the municipality in charge of the province where the facility is located.

4.2 What are the primary consents and permits required to construct, commission and operate distributed/C&I renewable energy facilities?

These are largely the same as those required for the construction, commissioning and operation of a renewable energy facility. However, given the current status of the regulatory regime, it is not possible for private developers to develop distribution facilities.

4.3 What are the requirements for renewable energy facilities to be connected to and access the transmission network(s)?

The requirements for renewable energy facilities to connect to and access the transmission network are set out in the Grid Code, which is issued and updated by Oman Electricity Transmission Company ("**OETC**"). The Grid Code includes detailed operational and technical provisions. For example, parties to the Grid Code are required to share certain planning and forecasting data with OETC. Operational tests and site investigations, as well as the reporting of significant incidents, are also required, including numbering of high voltage plants.

Please see question 3.4 above in relation to the SAHIM net metering regime.

4.4 What are the requirements for renewable energy facilities to be connected to and access the distribution network(s)?

These requirements are set out in the Distribution Code and include a requirement to produce data, share information updates and forecasts, and report significant incidents. There is also a requirement to develop contingency plans for any emergencies, such as a system shutdown.

4.5 Are microgrids able to operate? If so, what is the legislative basis and are there any financial or regulatory incentives available to promote investment in microgrids?

Microgrids are able to operate in Oman on an exception-only basis. For microgrids to operate, APSR must issue a licence exemption under the Sector Law permitting the microgrid owner and operator to carry out activities relating to the operation of the microgrid, subject to certain conditions.

4.6 Are there health, safety and environment laws/regulations which should be considered in relation to specific types of renewable energy or which may limit the deployment of specific types of renewable energy?

We are unaware of any health and safety or environmental regulations that would distinguish between different types of renewable energy projects. The Environment Authority issues such regulations and, together with APSR, carries out inspections to ensure compliance with health and safety requirements. Given that renewables in Oman are still relatively new, we expect relevant regulations to be developed further in the near future, due to the increased focus on solar, wind and, potentially, hydrogen projects.

5 Storage

5.1 What is the legal and regulatory framework which applies to energy storage and specifically the storage of renewable energy?

There is no legal or regulatory framework applying to energy storage; however, there is increased interest in energy storage by private companies.

5.2 Are there any financial or regulatory incentives available to promote the storage of renewable energy?

There are no financial or regulatory incentives with the aim of promoting the storage of renewable energy.

6 Foreign Investment and International Obligations

6.1 Are there any special requirements or limitations on foreign investors investing in renewable energy projects?

There are no special requirements or limitations relating to foreign investment in large utility-scale projects. The Sector Law permits 100% foreign ownership in entities undertaking activities that include, but are not limited to, the generation of electricity using renewable energy. Notwithstanding the foregoing, however, publicly tendered IPPs include an obligation to list a minority shareholding in the project company (up to 40%) on the local securities exchange within a specified period after the commercial operation date of the project, which applies to both conventional and renewable energy IPPs.

With regard to the SAHIM projects, there is a condition included in the tender documents to contract with one of nine accredited local companies. However, the scale of these renewable energy projects is small and therefore unlikely to attract significant foreign investment.

6.2 Are there any currency exchange restrictions or restrictions on the transfer of funds derived from investment in renewable energy projects?

There are no currency exchange restrictions on the transfer of funds derived from investment in renewable energy projects.

6.3 Are there any employment limitations or requirements which may impact on foreign investment in renewable energy projects?

All employers in Oman must comply with applicable requirements of Omanisation – a national policy that aims to promote the training, development and employment of Omani nationals.

Omanisation requirements vary from one industry to another. They also vary depending on seniority levels within an organisation.

6.4 Are there any limitations or requirements related to equipment and materials which may impact on foreign investment in renewable energy projects?

There are no statutory limitations or requirements related to equipment and materials that may affect foreign investments (save for standard restrictions regarding sanctioned and embargoed countries); however, OPWP typically includes minimum In-Country Value ("ICV")/local content requirements in its PPAs.

7 Competition and Antitrust

7.1 Which governmental authority or regulator is responsible for the regulation of competition and antitrust in the renewable energy sector?

The Competition Protection and Monopoly Prevention Centre is responsible for regulating competition and antitrust in Oman. However, the position is different in the electricity and related water sector as APSR is the entity responsible for encouraging and promoting fair competition. APSR also has powers to impose penalties on any persons that undermine, restrict or prevent competition. APSR may also refer such incidents to the public prosecutor.

7.2 What power or authority does the relevant governmental authority or regulator have to prohibit or take action in relation to anti-competitive practices?

Pursuant to article 132 of the Sector Law, it is an offence to undertake any action which may prevent or restrict competition in respect of any activities regulated by the Sector Law. Such offence may be punishable by imprisonment for a period of up to three years and/or a fine of up to OMR 50,000.

7.3 What are the key criteria applied by the relevant governmental authority or regulator to determine whether a practice is anti-competitive?

There are no statutory criteria to determine whether a practice is anti-competitive. However, we understand that APSR will determine whether a practice is anti-competitive by considering whether any damage was caused to the interest of customers and other participants in the electricity and related water sector.

8 Dispute Resolution

8.1 Provide a short summary of the dispute resolution framework (statutory or contractual) that typically applies in the renewable energy sector, including procedures applying in the context of disputes between any applicable government authority/regulator and the private sector.

Typically, PPAs will include arbitration under International Chamber of Commerce Rules. Issues arising out of or in relation to a decision made by APSR would typically be referred to the local courts; however, the Sector Law provides for certain disputes with APSR to be referred to arbitration.

8.2 Are alternative dispute resolution or tiered dispute resolution clauses common in the renewable energy sector?

Yes, alternative dispute resolution and tiered dispute resolution clauses are common in the energy sector generally.

8.3 What interim or emergency relief can the courts grant?

The Omani Courts have the power to issue injunctive relief on an emergency basis. The application for injunctive relief must be sufficiently detailed in order to enable the judge to review the file and to make an informed determination on its merits. The application must be fully substantiated with evidence and must not be *ex parte*; however, a judge may issue an interim decision prior to considering the respondent's pleadings.

8.4 Is your jurisdiction a party to and has it ratified the New York Convention on the Recognition and Enforcement of Foreign Arbitral Awards and/or the Convention on the Settlement of Investment Disputes between States and Nationals of Other States and/or any significant regional treaty for the recognition and enforcement of judgments and/or arbitral awards?

Yes. Oman is a party to both the New York Convention on the Recognition and Enforcement of Foreign Arbitral Awards (the "**New York Convention**") and the Convention on the Settlement of Investment Disputes between States and Nationals of Other States (the "**ICSID**").

Oman acceded to the New York Convention on 25 February 1999 without any reservations, declarations or notifications. Oman signed ICSID on 5 May 1995, with the ICSID entering into force in Oman on 23 August 1995.

Oman is also a party to the 1983 Riyadh-Arab Agreement for Judicial Co-operation (the "**Riyadh Convention**") and the 1996 Gulf Co-operation Council Convention for the Execution of Judgments, Delegations and Judicial Notifications (the "**GCC Convention**"). The Riyadh and GCC Conventions provide, among other things, for the recognition and enforcement of civil judgments among contracting parties.

8.5 Are there any specific difficulties (whether as a matter of law or practice) in litigating, or seeking to enforce judgments or awards, against government authorities or the state?

The law and process regarding enforcement of awards is the same whether enforcement is made against private or public entities.

State entities do not, in general, enjoy immunity from suit in Oman. The law does, however, prevent state assets from being attached or enforced against. In most cases, this rule applies to state agencies and government authorities, rather than state-owned companies that are operating on a commercial basis.

8.6 Are there examples where foreign investors in the renewable energy sector have successfully obtained domestic judgments or arbitral awards seated in your jurisdiction against government authorities or the state?

We are unaware of any instances where a foreign investor was able to successfully obtain domestic judgments or arbitral awards against government authorities or the state. As mentioned previously, renewable energy projects in Oman are relatively new and the only operational large utility-scale project has been developed by a private entity, PDO. The government's first utility-scale project is currently under development.

9 Updates and Recent Developments

9.1 Please provide a summary of any recent cases, new legislation and regulations, policy announcements, trends and developments in renewables in your jurisdiction.

Oman's journey on both large utility-scale solar IPPs and rooftop solar has only recently begun. Renewable energy provides a platform for both energy and economic diversification. As the country strives to diversify from an oil- and gas-based economy and achieve its commitment to 30% of energy from renewable sources by 2030, further tenders are expected in the coming years following the success of the pathfinder projects. The majority of these will focus on solar energy (expected to cover both solar PV and concentrated solar power); however, there will also be opportunities in respect of wind and waste-to-energy. RAECO is also procuring projects that include significant levels of storage, and which will further open up the potential for the development of renewable energy in Oman.

As part of a recent shake-up in Oman's government institutions, the name of the authority responsible for the regulation of the electricity sector was changed in August 2020 from the Authority for Electricity Regulation to APSR. The name change reflects the expansion of the authority's mandate, which now covers the regulation of the natural gas transportation sector.

The announcement by the Ministry of Energy and Minerals that Oman is planning to introduce regulations that would allow for bilateral trading of electricity between large consumers and generators is a positive step that could encourage the deployment of small-scale renewable plants and reduce reliance on the grid.

In February 2021, APSR launched a tender for advisory services to review the overall structure of the electricity sector, with the objective to re-assess the efficiency of the structure and procurement policies and explore ways to potentially shift some of the financial burden borne by the government today. At the time of writing, we are unaware of whether this exercise has been concluded.

Note

This chapter is not intended to provide legal or other advice and readers should not take, or refrain from taking, action based on its content. Please see https://www.dentons.com for legal notices.

The laws referenced in this chapter are English translations of the original Arabic language laws. Where there is a conflict between the English translation and the original Arabic language law, the Arabic language law prevails.

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Mhairi has advised on a number of award-winning and ground-breaking renewable deals in the Middle East. In Oman, she has advised on the Ibri II PV solar project, a bid for the Amin Solar PV IPP, as well as conventional projects such as the Manah IPP, Musandam IPP, Barka 3 and Sohar 2 IPPs, Sur IPP, Salalah IWPP and Ibri II Solar PV IPP.
Mhairi is a member of the Board and Vice-Chair of the Clean Energy Council, a non-profit organisation providing a forum for both private and public sector organisations participating in the clean energy sector across the MENA region.

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Yasser's legal work includes advising local and international companies operating in the power (including renewables), water, construction and real estate development sectors on a wide range of international and Omani laws, contracts and matters of practical implementation.
Yasser was part of the local team advising ACWA Power on the landmark Ibri II Solar PV IPP which closed in 2020. He was also part of the team advising OPWP on drafting the rules for the electricity spot market.
Yasser's experience has been gained working in Oman, the UK and the UAE. He is fluent in both Arabic and English.

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Dentons is the premier international law firm operating in Oman for over 39 years, advising on both international and local law. The Dentons team in Oman regularly drafts and negotiates legal documents in both Arabic and English.
Their teams have vast experience on solar projects in Oman, including recently advising ACWA Power on reaching financial close on the Ibri II Solar PV IPP, the largest solar project in Oman, as well as advising multiple bidders (or lenders to a bidder) on PDO's Amin solar project.
Dentons drafted the Sector Law and designed the market structure which established PAEW (Diam), OPWP, RAECO/Tanweer, APSR Oman, Electricity Holding Company (Nama Holding) and OETC, the key players in the Oman power sector, and have worked on nearly all I(W)PPs since 2000. Dentons has previously advised the government, acting through OPWP, on drafting the rules for the electricity spot market.

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Portugal


João Louro e Costa


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1 Overview of the Renewable Energy Sector

1.1 What is the basis of renewable energy policy and regulation in your jurisdiction and is there a statutory definition of 'renewable energy', 'clean energy' or equivalent terminology?

The legal framework for renewable energy in Portugal is essentially regulated by the following diplomas:

(i) Decree-Law no. 29/2006, of 15 February ("**Decree-Law 29/2006**"), which establishes the legal framework applicable to the exercise of activities involving the generation, transmission, distribution and sale of energy and the organisation of energy markets;

(ii) Decree-Law no. 172/2006, of 23 August ("**Decree-Law 172/2006**"), as amended, which develops the general principles regarding the organisation and functioning of the National Electricity System (*Sistema Elétrico Nacional*) ("**SEN**"); and

(iii) Decree-Law no. 162/2019, of 25 October ("**Decree-Law 162/2019**"), which establishes the legal scheme applicable to self-consumption of renewable energy, individually, collectively, or by Renewable Energy Communities (*Comunidades de Energia Renovável*) ("**CER**").

Decree-Law 172/2006 defines "*renewable energy*" as energy from renewable non-fossil energy sources, namely: wind; solar; geothermal; wave and other forms of ocean energy; hydropower; biomass; landfill gas; sewage treatment plant gas; and biogas.

Although the concept of "*clean energy*" is not specifically defined, the Resolution of the Council of Ministers no. 8-A/2021, which approves the Long-Term Strategy for the Renewal of Buildings briefly defined it as the set of legislative proposals in the fields of energy efficiency, renewable energy and the internal electricity market, with a view to promoting energy transition in the coming decades and complying with the Paris Agreement on climate change and global warming.

1.2 Describe the main participants in the renewable energy sector and the roles which they each perform.

The main participants in the renewable energy sector may be grouped in several distinct categories, as follows:

(A) Controlling and regulatory entities:

(i) the Directorate-General of Energy and Geology, a service within the Ministry of Environment and Energy Transition (central government), is the licensing and controlling body in charge of granting the production and operation licences in respect of renewable power generation facilities; and

(ii) the Energy Services Regulatory Authority (*Entidade Reguladora dos Serviços Energéticos*) ("**ERSE**") is the independent regulator of the energy sector.

(B) Grid operators:

(i) Rede Elétrica Nacional, S.A. ("**REN**" or "**TSO**"), a public listed company, is the holder of the transmission system public service concession and is therefore the Portuguese transmission system operator. REN is also the global system manager, being entrusted, *inter alia*, with the task of preserving the security and functioning of the SEN in accordance with the regulations approved by ERSE, managing the procedures regarding the recognition of market agents' status and managing the functioning of the system services' market; and

(ii) E-Redes – Energia S.A. ("**E-Redes**"), a subsidiary of the public listed company Energias de Portugal, S.A. ("**EDP**"), is the holder of the distribution system (medium and high voltage) concession and is therefore the Portuguese distribution system operator. E-Redes is also the holder of a significant majority of the low-voltage municipal distribution grids.

(C) Power Generators: the holders of production and operation licences for the injection of electricity into the public service electric grid.

(D) The off-taker of electricity generated by power plants benefitting from a guaranteed remuneration regime: SU Eletricidade, S.A., a subsidiary of EDP.

(E) The market operators: the Portuguese electricity market is merged with the Spanish market (the Iberian Electricity Market (*Mercado Ibérico da Energia Eléctrica*) ("**MIBEL**")); OMI-Polo Español, S.A. manages the daily and intra-day power market; and OMIP – Polo Português S.G.M.R., S.A., manages the MIBEL derivatives exchange.

(F) Energy retailers: a free-access activity regarding the sale and purchase and supply to end users of electricity.

1.3 Describe the government's role in the ownership and development of renewable energy and any policy commitments towards renewable energy, including applicable renewable energy targets.

The Portuguese Government's current policy for the energy sector is set out in the National Plan for Energy and Climate 2020–2030 ("**PNEC 2030**"), approved by the Resolution of the Council of Ministers no. 53/2020, of July 10.

The PNEC 2030 followed Regulation (EU) 2018/1999, of the European Parliament and of the Council, of 11 December,

on the Governance of the Energy Union and Climate Action, which provides that all Member States must prepare and submit an integrated national energy and climate plan to the European Commission.

Overall, the PNEC 2030 aims to achieve carbon neutrality by 2050 and, in order to achieve this, it sets out the following commitments: *(i)* decarbonise the national economy; *(ii)* prioritise energy efficiency; *(iii)* strengthen investment in renewable energy and reduce the country's energy dependence; *(iv)* guarantee security of supply; *(v)* promote sustainable mobility; and *(vi)* promote sustainable agriculture and forestry and enhance carbon sequestration.

Regarding renewable energy targets, according to PNEC 2030, the Portuguese Government:

(i) expects to achieve a level of 80% of electricity production from renewable sources by 2030;
(ii) foresees an increase in the installed solar power capacity of between 8.1 and 9.9 GW by 2030;
(iii) plans an increase in the renewable energy installed power capacity of up to 28.8 GW, compared with the 11.8 GW as at December 2015; and
(iv) predicts a total required investment of EUR 21,905 million to reach the predicted targets.

Furthermore, the Portuguese Government approved the National Hydrogen Plan (*Plano Nacional de Hidrogénio*), established by the Resolution of the Council of Ministers no. 63/2020, of 14 August. The main objectives of the National Hydrogen Plan are to introduce hydrogen into the energy sector and to foster green hydrogen production, storage and consumption in Portugal. In September 2020, Portugal and the Netherlands formalised a Memorandum of Understanding to articulate their strategic plans for green hydrogen.

In terms of ownership of renewable energy assets, none are state-owned.

2 Renewable Energy Market

2.1 Describe the market for renewable energy in your jurisdiction. What are the main types of renewable energy deployed and what are the trends in terms of technology preference and size of facility?

Hydro is the most representative of renewable power sources in the Portuguese generation mix, with an installed power capacity of 7.129 MW, followed by wind with an installed power capacity of 5.485 MW. Whilst the wind installed capacity has remained relatively stable in the past few years, large hydro has witnessed a noticeable increase.

The installed capacity of wind as of 2015 was 5.034 MW, compared with 5.485 MW as of 2021. For hydro, as of 2015, installed capacity was 6.031 MW, compared with 7.129 MW as of 2021. In the next couple of years, hydro capacity is expected to increase by an additional 1 GW with the commercial operation of new power plants in the Tâmega valley.

Large solar photovoltaic ("**PV**") has been the most recent trend in terms of technology and size: 454 MW of installed capacity in 2015; and 1.222 MW in 2021. With several electricity production licences awarded in the last couple of years, the current licensed pipeline for new solar PV should be close to 6 MW, and the Portuguese Government's goal is to reach 2030 with an installed capacity of 9.9 GW of solar – this goal is expected to be achieved through large-scale facilities, decentralised generation (below 1 MW), storage and hybrid projects comprising wind and solar or hydro and solar.

2.2 What role does the energy transition have in the level of commitment to, and investment in, renewables? What are the main drivers for change?

Energy transition plays a central role in the level of commitment and investment in renewables.

In 2019, the Portuguese Government approved the 2050 Carbon Neutrality Roadmap for Portugal, which enshrined a commitment to achieve carbon neutrality by 2050.

Accomplishing the 2050 carbon neutrality goal implies reducing greenhouse gas emissions by more than 85% compared with 2005 and ensuring an agricultural and forestry carbon sequestration capacity of approximately 13 million tonnes.

With this goal in mind, Portugal has been actively fostering energy transition and has set the goal of having 80% of electricity supplied in Portugal coming from renewable energy sources by 2030. This policy approach has translated into a legislative agenda particularly fostering solar power generation (centralised and distributed) and most recently with the approval by the European Commission of the Portuguese Recovery and Resilience Plan for the execution of the Next Generation EU Funds, which foresees public funding of approximately EUR 3 billion for the Climate Transition pillar.

Clear legislative measures are already being seen in terms of energy efficiency in buildings, an increase of the installed capacity for renewables, a green hydrogen strategy (with a roadmap approved in 2020) and the reduction of heavy industry energy consumption.

2.3 What role, if any, has civil society played in the promotion of renewable energy?

Although still relatively limited, the expectation is that civil society may play an increasingly relevant role in the reduction of energy consumption with the launch of specific state-backed funding programmes dedicated to the energy efficiency of buildings and energy transition under the umbrella of the Next Generation EU package.

The penetration of distributed renewable energy, particularly solar, may be jumpstarted by the favourable framework of the Portuguese Recovery and Resilience Plan and civil society (as the bulk of end users) is expected to be the driving force of this change, either through individual self-consumption schemes or CER. We are still in early days; however, the outlook appears promising.

2.4 What is the legal and regulatory framework for the generation, transmission and distribution of renewable energy?

The legal framework is essentially regulated by the following diplomas:

(i) Decree-Law 172/2006, which regulates the legal framework applicable to the exercise of the activities of generation, transmission, distribution and supply of electricity and the organisation of the electricity markets; and
(ii) Decree-Law no. 76/2019, of 3 June ("**Decree-Law 76/2019**"), which amended the legal framework applicable to generation, transmission and distribution of renewable energy.

2.5 What are the main challenges that limit investment in, and development of, renewable energy projects?

We may pinpoint three main challenges that are generally related to the investment and development of renewables projects.

The first challenge concerns the scarcity of the titles to allow access to the licensing and development of renewables projects, particularly in respect of solar developments. As a pre-requisite to applying for an electricity production licence for the installation of a renewables power plant, sponsors must be granted with an injection capacity title (similar to a grid reception point). Since 2019, these titles are being awarded either pursuant to public auctions or direct agreements following ranking criteria with the TSO. In the 2019 and 2020 auctions, the demand clearly surpassed the auctioned capacity, and 400 projects representing *circa* 100 GW of solar capacity have applied for the direct agreements with the TSO.

Secondly, as a result of the high demand, the price of energy power purchase agreements ("**PPAs**") secured by the Portuguese Government in the auctions has been extremely low (2019 recorded EUR 14.76 per MW/h; and 2020 recorded EUR 11.40 per MW/h). Despite the considerable capital expenditure decrease of solar PV in the past years, such low remuneration thresholds may represent a challenge in terms of profitability and bankability.

Finally, the third challenge concerns securing and licensing the land rights. Given the increase of large-scale projects that require significant portions of land (preferably not far from the interconnections with the public grid), finding suitable plots of land, with limited building restrictions and few to no environmental restrictions, may prove to be a lengthy and challenging process.

2.6 How are large utility-scale renewable power projects typically tendered?

On 3 June 2019, Decree-Law 76/2019 was enacted, amending Decree-Law 172/2006.

Amongst the main changes introduced by Decree-Law 76/2019 was the modification to the rules applicable to the awarding and assignment of power plants' production licences. Pursuant to the new Decree-Law: *(i)* the attribution of a grid reserve capacity title for injection of power in the Renewable Energy Strategic Plan ("**RESP**") is now a prior and mandatory requirement for the commencement of the process for obtaining a power production licence; and *(ii)* the holder of a production licence is now strictly prevented from assigning the title to a third party before the operation licence is issued to the power plant (i.e., simply put, production licences cannot be transferred to third parties until the power generation facility reaches the commercial operation date). The policy drive behind these amendments is, on the one hand, to maximise efficiency by assuring that all requests are guaranteed an injection point in the RESP and, on the other hand, to incentivise sponsors to fully commit to its projects and its swift development.

Pursuant to Decree-Law 76/2019, utility-scale renewable power projects can be tendered either through *(i)* an auction process, or *(ii)* direct agreements with grid operators to finance and build new network infrastructures in order to anticipate planned changes to the network or to reinforce existing ones. The direct agreements are to be entered into pursuant to a ranking that classifies each of the projects submitted for consideration.

2.7 To what extent is your jurisdiction's energy demand met through domestic renewable power generation?

According to the data published by the Directorate General of Energy and Geology (*Direção Geral de Energia e Geologia*) ("**DGEG**"), the most recent data regarding energy demand met through domestic power generation is as follows:

- in 2019, the domestic energy power generation produced represented 30.6% of the total final energy consumption;
- in 2019, domestic production stood at 6,487 ktoe, up 1.1% from the previous year;
- in 2020, Portugal had a renewables total installed capacity of 14.563 MW for electricity production, 1.1% more compared with 2019 and 50.4% more compared with 2010; and
- in 2020, the installed capacity related to renewable energy sources represented 65% of the total installed capacity; for instance, in 2009, renewable installed capacity represented 50%.

3 Sale of Renewable Energy and Financial Incentives

3.1 What is the legal and regulatory framework for the sale of utility-scale renewable power?

The Portuguese legal framework applicable is provided for in Decree-Law 172/2006, which develops the general principles regarding the organisation and operation of the SEN, approved by Decree-Law 29/2006, regulating the legal framework applicable to the exercise of the activities of generation, transmission, distribution and supply of electricity and the organisation of the electricity markets.

ERSE is the entity in charge of approving the administrative norms that regulate the activities within the SEN. The following ERSE regulations are of particular relevance in respect of the sale of power and grid access: the Commercial Relations Regulation approved by ERSE (*Regulamento de Relações Comerciais*) ("**RRC**"); the Quality of Service Regulation; the Tariff Regulation; the Grid Access Regulation; and the Networks Operation Regulation.

Utility-scale renewable power producers are generally covered by one of the three following sale/remuneration schemes: *(i)* subsidised (feed-in) remuneration – mostly in operation; *(ii)* merchant – now coming into operation; and *(iii)* discounted remuneration – assets with auctioned capacity.

3.2 Are there financial or regulatory incentives available to promote investment in/sale of utility-scale renewable power?

There are no relevant financial or regulatory incentives to promote investment in utility-scale renewables, other than grid access priority and green certificates.

3.3 What are the main sources of financing for the development of utility-scale renewable power projects?

The main sources of financing for the development of utility-scale renewable power projects are project financing and equity. With medium- to long-term PPAs becoming increasingly common in the Portuguese market, bankability of renewables merchant projects is standardising.

3.4 What is the legal and regulatory framework applicable to distributed/C&I renewable energy?

The legal framework for the sale of distributed/C&I renewable power is provided for in:

(i) Decree-Law 172/2006, which establishes the general principles regarding the organisation and functioning of the

SEN and regulates the legal framework applicable to the exercise of the activities of generation, transmission, distribution and supply of electricity and the organisation of the electricity markets;

(ii) Decree-Law 162/2019, which establishes the legal scheme applicable to self-consumption of renewable energy, individual, collective or by CER; and

(iii) Regulation 373/2021, of 5 May, approved by ERSE, which approves the Electricity Self-Consumption Regulation.

3.5 Are there financial or regulatory incentives available to promote investment in distributed/C&I renewable energy facilities?

The Portuguese Government has sought to implement incentives associated with renewable energy investment. However, these incentives are more focused on the distributed renewable energy rather than C&I renewable facilities.

Highlighted below are some recently approved incentives:

- Tax incentive for the production of energy in self-consumption allowing for a deduction in income tax (*Imposto sobre o Rendimento das Pessoas Singulares*), with a global maximum limit of EUR 1000, pursuant to Article 333 of Law no. 2/2020 of 31 March, which approved the State Budget for 2020.
- Support Programme for More Sustainable Buildings (*Programa de Apoio a Edifícios Mais Sustentáveis*), which aims to finance measures that promote the rehabilitation, decarbonisation, energy and water efficiency of buildings. In this sense, the second phase of this programme is regulated by Ministerial Order no. 6070-A/2021.

3.6 What are the main sources of financing for the development of distributed/C&I renewable energy facilities?

Distributed/C&I renewable energy facilities up to 1 MW are mostly being deployed by large electricity retailers or dedicated investment companies, which finance the installation and development through corporate funding and enter into medium- to long-term supply or lease agreements with the end clients receiving the energy output.

In addition, please refer to question 3.5 above.

3.7 What is the legal and regulatory framework that applies for clean energy certificates/environmental attributes from renewable energy projects?

Pursuant to Law no. 71/2018, of 31 December, the TSO is the entity in charge of issuing Guarantees of Origin. A Guarantee of Origin is an electronic document that certifies that a given quantity of energy was produced through a renewable source of energy, using a certain technology, and identifying, *inter alia*, the localisation, beginning and end of production.

The TSO is responsible for the registration, issuance, transfer and cancellation of Guarantees of Origin.

3.8 Are there financial or regulatory incentives or mechanisms in place to promote the purchase of renewable energy by the private sector?

In order to foster distributed generation and self-consumption by the private sector of energy from renewable sources, the Portuguese Government published Decree-Law 162/2019, which: *(i)* enables and fosters individual self-consumption; *(ii)* fosters self-consumption and collective self-consumption; and *(iii)* enables the constitution of energy communities.

In this sense, this legal framework permits citizens, companies and other public and private entities to produce, consume, share, store and sell energy produced from renewable energy sources, thus actively participating in the renewable energy transaction.

4 Consents and Permits

4.1 What are the primary consents and permits required to construct, commission and operate utility-scale renewable energy facilities?

The primary consents and permits required to construct, commission and operate utility-scale renewable energy facilities are the following:

(i) **Injection capacity reserve title**, which attests that the electric grid has the capacity to accommodate the project's output. Obtaining the injection capacity reserve title is a prior condition to starting the project's licensing procedure. The title may be auctioned, obtained upon request if there is available and non-dedicate capacity (which is rare) and obtained through an agreement between the private operator and the relevant grid operator.

(ii) **Electricity production licence** (*licença de produção*), which will allow for the development of the electrical project and the supply of electricity to the network.
The electricity production licence is granted by the DGEG. The request for the issuance of the electricity production licence must be preceded by, among others: *(i)* a preliminary assessment of the project from an urban planning point of view; *(ii)* obtainment of the sponsor's right to use the land where the project's power plant will be built, which must be evidenced to the licensing entity; *(iii)* an assessment of the project from an environmental point of view; and *(iv)* commencement of the process of agreeing the terms and conditions for the interconnection of the project to the network with the grid operator.

(iii) Project's **construction permit** (*alvará de construção*), which is issued by the municipality where the project will be located and which allows for the construction of the project.

(iv) Project's **operation licence** (*licença de exploração*), which is issued by the DGEG, which allows for the start of operation of the project.

4.2 What are the primary consents and permits required to construct, commission and operate distributed/C&I renewable energy facilities?

According to Decree-Law 162/2019, production units installed with the purpose of supplying electricity to the respective Hosting Facilities are defined as Self-Consumption Production Units (*Unidades de Produção para Autoconsumo*) ("**UPACs**").

Decree-Law 162/2019 establishes the conditions for the installation of UPACs pursuant to the system's envisaged installed capacity:

(i) UPACs with an **installed capacity equal to or less than 350 W** are exempted from any prior regulatory control;

(ii) UPACs with an **installed capacity of more than 350 W and up to 30 kW** are subject to a mere communication to the DGEG prior to the commencement of operations;

(iii) UPACs with an **installed capacity of more than 30 kW and up to 1 MW** are subject to a simplified prior registration process to be conducted through an electronic platform managed by the DGEG, and the entry into operation of the UPACs is subject to the final obtainment of an operation certificate to be issued by the DGEG; and

(iv) UPACs with an **installed capacity of more than 1 MW** are subject to the awarding of an electricity production licence for the construction phase and an electricity operation license for the operation stage, which are to be obtained under the general regime applicable to the electricity sector set forth in Decree-Law 172/2006, as amended by Decree-Law 76/2019.

In addition, the licensing procedure of the UPACs intended to operate with a **connection to the grid of more than 1 MVA** shall also be preceded by the granting of a capacity reserve title, as it results from Article 5-A of Decree-Law 172/2006.

4.3 What are the requirements for renewable energy facilities to be connected to and access the transmission network(s)?

Please refer to question 4.1 above.

4.4 What are the requirements for renewable energy facilities to be connected to and access the distribution network(s)?

The requirements for connection and access to the transmission and distribution grid are identical.

4.5 Are microgrids able to operate? If so, what is the legislative basis and are there any financial or regulatory incentives available to promote investment in microgrids?

Microgrids are able to operate under the specific legal framework applicable to the self-consumption of electricity generated from renewable sources, pursuant to Decree-Law 162/2019.

Although not currently in place, it is likely that financial incentives (subsidies) for the deployment of technology will be made available under the Portuguese Recovery and Resilience Plan. In terms of regulatory incentives, the reduction, and in some cases exemption, of grid tariffs is noteworthy.

4.6 Are there health, safety and environment laws/regulations which should be considered in relation to specific types of renewable energy or which may limit the deployment of specific types of renewable energy?

Under Portuguese law, wind farms are subject to a specific framework which may limit their deployment.

Decree-Law no. 94/2014, of 24 June, sets out the legal framework applicable to repowering with over-equipment, which is intended to promote the optimisation of existing wind energy and lessening of environmental impacts and further foresees that the over-equipment is subject to an autonomous licensing procedure.

In light of the current legislation, the main challenges faced by project owners, particularly in the sphere of onshore wind energy repowering, seem to be the time-consuming and complex licensing procedures which can be perceived as an obstacle for investment and wind power deployment.

5 Storage

5.1 What is the legal and regulatory framework which applies to energy storage and specifically the storage of renewable energy?

The storage of renewable energy is regulated by the following:

(i) Decree-Law 162/2019, which permits renewable energy self-consumers to produce, consume, store, share and sell electricity; and

(ii) Regulation 373/2021, of 5 May, approved by ERSE, which approves the Electricity Self-Consumption Regulation.

5.2 Are there any financial or regulatory incentives available to promote the storage of renewable energy?

In terms of incentives to promote the storage of renewable energy, it is envisaged that the possibility of the self-consumer of electricity has the right to consume the electricity produced or stored in its own facilities and trade the surplus production of energy through the signing of contracts: *(i)* for purchase of electricity; *(ii)* from electricity traders; and *(iii)* through a peer-to-peer trading regime.

Therefore, Decree-Law 162/2019 permits the storage and trading of renewable energy through the implementation of CER which have the power to produce, consume, store and sell renewable energy.

6 Foreign Investment and International Obligations

6.1 Are there any special requirements or limitations on foreign investors investing in renewable energy projects?

Foreign companies are free to invest in the energy sector. However, certain limitations are applicable. Decree-Law no. 138/2014, of 15 September, establishes the legal framework for the safeguarding of strategic assets deemed essential for national defence and security or for the supply of fundamental services in the energy, transport and telecommunications areas. Pursuant to this regime, the Portuguese Government may object to a transaction resulting directly or indirectly in the acquisition of sole or joint control by an investor (person or company) from a country outside of the European Union and the European Economic Area, over strategic assets if it poses a real and severe threat to the national defence and security or to the provision of basic services considered to be of a fundamental nature for Portugal, such as energy supply. For legal certainty purposes, this regime permits the acquiring entity to request that the Portuguese Government issues a declaration of non-opposition to the transaction, which shall be deemed granted if the decision is not issued within 30 days.

Additionally, from an ownership of electricity companies or assets perspective, according to Decree-Law no. 215-A/2012, of 8 October, a national or foreign entity cannot, directly or indirectly, hold more than 25% of the share capital of the National Transmission Network operator or of the companies that control said operator. Moreover, if the concession-holder of the transmission network is controlled by one or more persons from third countries, it can only be certified as an operator if said certification does not pose a risk to the security of the national energy supply.

In addition, Decree-Law 172/2006, as amended, establishes restrictions applicable to holders of electricity production licences by imposing a 40% limit on the electricity generation capacity share held by licence-holders within the scope of MIBEL.

6.2 Are there any currency exchange restrictions or restrictions on the transfer of funds derived from investment in renewable energy projects?

There are no currency exchange or transfer of funds restrictions in place.

6.3 Are there any employment limitations or requirements which may impact on foreign investment in renewable energy projects?

There are no employment limitations or requirements limiting foreign investment in place. Notwithstanding, see question 6.1 above.

6.4 Are there any limitations or requirements related to equipment and materials which may impact on foreign investment in renewable energy projects?

There are no limitations or requirements in place related to equipment and materials limiting foreign investment.

7 Competition and Antitrust

7.1 Which governmental authority or regulator is responsible for the regulation of competition and antitrust in the renewable energy sector?

There are two major actors which are responsible for the regulation of competition and antitrust in the renewable energy sector in Portugal:

(i) the ERSE, which is responsible for adequately protecting customer interests and promoting competition between market agents through its continuous supervision and monitoring, integrated in the objectives of the internal market and MIBEL; and

(ii) the Portuguese Competition Authority (*Autoridade da Concorrência*) ("**AdC**") which ensures compliance with the rules regarding the promotion and protection of competition in coordination with ERSE and the promotion of competition in a liberalised and free market.

7.2 What power or authority does the relevant governmental authority or regulator have to prohibit or take action in relation to anti-competitive practices?

It is ERSE's responsibility to report to the AdC the practices restricting competition of which it has knowledge and to collaborate with it in the corresponding sanctioning procedure, pursuant to Decree-Law no. 97/2002, of 12 April, which regulates the ERSE and approves the respective statutes.

The powers of the AdC may be divided into: *(i)* supervisory powers; *(ii)* regulatory powers; and *(iii)* sanctioning powers, in accordance with Law no. 19/2012, of 8 May, which approves the new legal framework for competition.

Within the scope of its sanctioning powers, the AdC may:

- identify and investigate behaviours which may infringe national and EU competition legislation, in particular with regard to practices restricting competition and the control of concentrations between undertakings;
- investigate and decide on the respective proceedings;
- apply fines and other sanctions and measures provided for by law; and
- adopt precautionary measures, in accordance with the competition legal framework and other applicable legal provisions.

7.3 What are the key criteria applied by the relevant governmental authority or regulator to determine whether a practice is anti-competitive?

Overall, the AdC controls and supervises the practices restricting competition that are illegal ways for companies to behave in the markets, which result or are likely to result in restrictions of competition.

By way of example, we may name the following practices as anti-competitive:

(i) agreements, concerted practices and decisions by associations of undertakings, provided for in Article 9 of Law no. 19/2012, of 8 May, and Article 101 of the Treaty on the Functioning of the European Union;

(ii) abuses of dominant position provided for in Article 11 of Law no. 19/2012, of 8 May, and Article 102 of the Treaty on the Functioning of the European Union; and

(iii) abuses of economic dependence provided for in Article 12 of Law no. 19/2012, of 8 May.

8 Dispute Resolution

8.1 Provide a short summary of the dispute resolution framework (statutory or contractual) that typically applies in the renewable energy sector, including procedures applying in the context of disputes between any applicable government authority/regulator and the private sector.

The dispute resolution framework which applies in the renewable energy sector is established in the RRC, provided for in Regulation 1129/2020, which came into force on 1 January 2021.

The RCC regulates: *(i)* the principles and general rules of commercial relationship in the energy sector; *(ii)* the commercial relationship of transmission and distribution network operators, electricity producers and suppliers (for billing and payment purposes); *(iii)* customer relations (supply, invoicing and payment obligations, among others); and *(iv)* the disputes resolution that may arise in the renewable energy sector.

The RCC provides that in disputes arising from the commercial relationship:

(i) the interested parties may submit complaints with the energy sector entity with which they have a commercial relationship;

(ii) the SEN and the National Gas System ("**SNG**") are obliged to have a complaints book and to ensure internal instruments for the resolution of disputes;

(iii) the interested parties may request ERSE's intervention whenever a timely or substantiated response has not been obtained from the entity with which they have a commercial relationship or whenever they do not consider it satisfactory; and

(iv) the private parties may always resort to the administrative courts, the Justice of Peace (*Julgados de Paz*) or any alternative means of dispute resolution.

8.2 Are alternative dispute resolution or tiered dispute resolution clauses common in the renewable energy sector?

According to Article 86(2) of the RCC, entities that intervene in the commercial relationship within the SEN or SNG

may propose to their customers the inclusion in the respective contract of an arbitration clause for the resolution of disputes arising from the breach of such contracts.

For large-scale utilities, the development agreements, Energy Performance Certificate ("**EPC**") and Operations and Maintenance ("**O&Ms**") generally foresee recourse to arbitration.

8.3 What interim or emergency relief can the courts grant?

Courts may grant anticipatory or conservatory injunctions (*providências cautelares*), which are urgent proceedings aimed to ensure the useful effect of the final decision.

8.4 Is your jurisdiction a party to and has it ratified the New York Convention on the Recognition and Enforcement of Foreign Arbitral Awards and/or the Convention on the Settlement of Investment Disputes between States and Nationals of Other States and/or any significant regional treaty for the recognition and enforcement of judgments and/or arbitral awards?

Portugal ratified the New York Convention on 18 October 1994, and it entered into force on 16 January 1995.

Nevertheless, Portugal has made a reciprocity reservation in the following terms: "*Within the scope of the principle of reciprocity, Portugal will restrict the application of the Convention to arbitral awards pronounced in the territory of a State bound by the said Convention.*"

At the EU level, it is relevant to mention Regulation (EU) 1215/2012 of the European Parliament and of the Council, of 12 December 2012, on jurisdiction and the recognition and enforcement of judgments in civil and commercial matters.

8.5 Are there any specific difficulties (whether as a matter of law or practice) in litigating, or seeking to enforce judgments or awards, against government authorities or the state?

In Portugal, there are no particular difficulties in litigating, or seeking to enforce, judgments against government authorities or the State. However, final and binding rulings tend to take a lot of time, hence the common choice for arbitration when dealing with material contracts.

Nevertheless, a topic of discussion over the years from a case-law perspective has been related to the tax framework for renewable energy projects (both wind farms and solar plants) in terms of Municipal Property Tax ("**IMI**").

The matter generating controversy related to the classification by the Portuguese Tax Authority ("**PTA**") of each element of a wind farm (e.g., wind turbines and substations) as an independent unit for IMI purposes, which resulted in the constitution of different properties subject to IMI within the same power station. Although the PTA's position only concerned wind farms, it has also been applied to solar plants.

The PTA's understanding has been challenged before the Portuguese Courts, notably by the Portuguese Supreme Administrative Court. The stance of the latter in approximately 22 decisions over the past 10 years has been to decide in favour of project owners by consistently ruling that the elements of wind farms cannot individually be considered properties due to the lack of economic autonomy.

8.6 Are there examples where foreign investors in the renewable energy sector have successfully obtained domestic judgments or arbitral awards seated in your jurisdiction against government authorities or the state?

There are no examples (at least public and relevant) of foreign investors in the renewable sector having obtained domestic or international awards against the Portuguese Government or state authorities. This is in line with the fact that to the exception of one or two measures regarding review of renewables tariffs, the Portuguese regulatory environment is scarcely contentious.

9 Updates and Recent Developments

9.1 Please provide a summary of any recent cases, new legislation and regulations, policy announcements, trends and developments in renewables in your jurisdiction.

Recent trends

The Portuguese Government is promoting the solar PV auctions, to ensure price and facilitate financing. In this sense, a great deal of grid capacity for electricity injection for the connection of solar PV plants is being auctioned. The winning bidders are awarded the right to access the Public Service Electricity Network, through the allocation of capacity reservation titles that allow them to inject electricity into the RESP.

Legislation and regulations

Regarding new legislation and regulations, the following diplomas can be highlighted:

- **Commercial Relations Regulations for the Electricity and Gas Sectors** (Regulation 1129/2020, of 30 December), approved by ERSE.
  This diploma establishes the rules applicable to the commercial relations between the various parties intervening in the SEN and in the SNG, as well as to the commercial conditions for connection to the public grids, the measuring, reading and availability of consumption data, the choice of supplier and the operation of the electricity or gas markets.
- **Special and Extraordinary Regime for the Installation and Operation of New Biomass Valorization Plants by municipalities**, recently regulated by Ministerial Order 76/2021, of 1 April.
- **Electricity Self-Consumption Regulation** (Regulation 373/2021, of 5 May), approved by ERSE.
  This regulation sets out the provisions applicable to the exercise of the activity of self-consumption of electricity, when there is a connection to the Public Service Electricity Grid, as well as to CER that carry out the activity of self-consumption, constituted under the terms of Decree-Law 162/2019.
- **Legal framework for energy efficiency management contracts to be signed between services and bodies of the Public Administration and energy service companies**, provided for in Decree-Law no. 50/2021, of 15 June.
  This Decree-Law determines that the State and other public entities must, in buildings owned by the State and in equipment used to provide public services, implement energy efficiency improvement measures and install production units for self-consumption.

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Uría Menéndez is an independent law firm that was founded in Madrid in 1946 by Professor Rodrigo Uría González. We currently have 17 offices in Spain, Portugal, where we operate as Uría Menéndez – Proença de Carvalho, and major cities in Europe, the Americas and Asia. We advise on Spanish, Portuguese and EU law in business-related matters and assist our clients in their international transactions through our network of offices and our close links with prestigious law firms around the world. We have over 2,000 clients from all over the world – 50% of which are international – including 85% of the IBEX 35 companies, 50% of the FTSE Euro 100 companies and 50% of the PSI 20 companies.
Uría Menéndez has an unrivalled experience in Portugal, Spain and internationally regarding renewable asset acquisitions and disposals as well as project financings and plant construction within the energy infrastructure sectors (including the development, construction, financing and operation of power plants).

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1 Overview of the Renewable Energy Sector

1.1 What is the basis of renewable energy policy and regulation in your jurisdiction and is there a statutory definition of 'renewable energy', 'clean energy' or equivalent terminology?

Renewable energy policy in the Kingdom of Saudi Arabia ("**KSA**") is a central component of the country's Vision 2030. Vision 2030 is a strategic framework to reduce KSA's dependence on oil, diversify its economy, and develop public service sectors, health, education, infrastructure, recreation and tourism.

The National Renewable Energy Program ("**NREP**"), which is overseen by the Ministry of Energy ("**MOE**"), aims to diversify the country's energy resources in order to: reduce the dependence of KSA on its oil reserves; reduce greenhouse gas emissions as part of the Paris Agreement; and create jobs and facilitate sustainable and long-term social development in line with KSA's Vision 2030.

1.2 Describe the main participants in the renewable energy sector and the roles which they each perform.

In addition to local and international private sector participants, the main participants in the renewable energy sector are: the MOE; the Water and Electricity Regulatory Authority ("**WERA**"); the Saudi Electricity Company ("**SEC**"); the Saudi Power Procurement Company ("**SPPC**"); and the Public Investment Fund ("**PIF**").

WERA is the regulator for the electricity and water desalination industry in KSA, including electricity derived from renewable sources. In accordance with Royal Decree No. M56 dated 20/10/1426H (the "**Electricity Law**"), WERA oversees the performance of service providers within the regulatory framework in order to guarantee the provision of safe, reliable, reasonably priced and efficient electric power and desalinated water to the consumers in KSA. WERA is responsible for licensing entities that carry on an "Electricity Activity" (namely electricity generation, co-generation, transmission, distribution, supply and trading) (see further details below).

SPPC is a limited liability company incorporated by the government to act as the principal purchaser of power under NREP and is 100% owned by SEC.

Since 2013, the King Abdullah City for Atomic and Renewable Energy ("**KACARE**") (now part of the MOE) has been responsible for a renewable and resource-mapping programme focusing on monitoring and mapping renewable energy sources in KSA, covering solar, wind, geothermal and waste-to-energy. KACARE has collaborated with academic institutions in KSA, which are active in renewables, including the King Abdullah University of Science and Technology ("**KAUST**"). KAUST has developed a number of solar-powered projects and was the first to complete large-scale rooftop solar installations in KSA. A number of other entities have followed suit, including Saudi Aramco.

PIF is KSA's sovereign wealth fund, one of the largest sovereign wealth funds in the world. It is used to invest funds on behalf of the government, including in the renewables sector.

Finally, in 2020, KSA's Council of Ministers formed a supreme committee, the Supreme Committee for Energy Mix Affairs for Electricity Production and Enabling Renewable Energy, to enable the implementation of KSA's renewable energy and localisation programmes. Given that renewable projects involve several government entities and sectors, the committee has been established to ensure alignment on policy and decision-making.

1.3 Describe the government's role in the ownership and development of renewable energy and any policy commitments towards renewable energy, including applicable renewable energy targets.

The government plays a key role in the development of renewable energy and policy commitments towards renewable energy through MOE, NREP and PIF.

Under Vision 2030, KSA aims to produce 58.7GW of renewable energy by 2030 (with an initial target of generating 27.3GW of renewable energy by 2024). The 2030 target is divided into 40GW of solar photovoltaic ("**PV**"), 16GW of wind and 2.7GW of concentrated solar power ("**CSP**").

MOE is tasked with procuring the development of 30% of the 2030 target through competitive public tenders (the third round of which, as of the date of writing, is currently being procured). The remaining 70% is set to be developed through PIF, by direct negotiations with developers.

2 Renewable Energy Market

2.1 Describe the market for renewable energy in your jurisdiction. What are the main types of renewable energy deployed and what are the trends in terms of technology preference and size of facility?

The main types of renewable energy which KSA is seeking to deploy are solar energy (including solar PV and CSP), wind power, geothermal energy, waste-to-energy, and, more recently, green hydrogen.

To date, the emphasis has been on utility-scale projects using solar PV energy and onshore wind power, with limited activity in respect of solar rooftop projects. As stated above, KSA's 2030 target includes solar PV, wind, waste-to-energy and CSP.

2.2 What role does the energy transition have in the level of commitment to, and investment in, renewables? What are the main drivers for change?

KSA is one of the most hydrocarbon-rich countries in the world. It holds almost a fifth of the world's total proved oil reserves and, according to the BP Statistical Review 2021, accounted for over 12% of global oil production in 2020. Notwithstanding this, as described above, KSA has set ambitious renewable energy targets. The main drivers for change are to diversify local energy sources and free up hydrocarbons resources for local industrial use or export, stimulate economic development within KSA and reduce carbon dioxide emissions.

2.3 What role, if any, has civil society played in the promotion of renewable energy?

The promotion of renewable energy in KSA has, thus far, been primarily procured through the public sector and government-owned entities.

2.4 What is the legal and regulatory framework for the generation, transmission and distribution of renewable energy?

There is currently no regulatory framework in place that is exclusively tailored to the generation, transmission and distribution of renewable energy. The generation, transmission and distribution of electricity (regardless of whether it derives from renewable or conventional energy) is considered an Electricity Activity and is therefore regulated by WERA and governed by the Electricity Law and its Implementing Regulations.

2.5 What are the main challenges that limit investment in, and development of, renewable energy projects?

As mentioned above, the Electricity Law and its Implementing Regulations, which apply to conventional power projects, also apply to renewable energy projects. Further consideration is needed to adapt to the large amount of solar PV power generation, which may lead to issues relating to intermittency and challenges regarding management of the grids. Linked to this, given the large scale of the solar PV projects, developing storage and putting in place incentives to encourage storage will be crucial going forward.

2.6 How are large utility-scale renewable power projects typically tendered?

MOE invites bids for the NREP projects and issues a Request for Qualification, which is used as a basis to pre-qualify applicants, both local and international. MOE then determines the pre-qualified applicants for lead roles, and those applicants will then proceed to the Request for Proposal ("**RFP**") stage of the process. The proposals include technical components and commercial components.

Once a project is awarded and successfully achieves commercial operation, the project company must sell its entire capacity and output to a sole offtaker, typically under a 25-year power purchase agreement.

2.7 To what extent is your jurisdiction's energy demand met through domestic renewable power generation?

According to MOE and the International Renewable Energy Agency ("**IRENA**"), KSA's renewable energy sources make up less than 1% of the country's total energy generation capacity; however, KSA aims to raise that percentage to at least 30%, and has shown evidence of taking steps to do so. According to the Saudi Arabia Energy Report by King Abdullah Petroleum Studies and Research Centre, KSA's installed renewable energy capacity at the end of 2018 was 142MW; this is targeted to increase exponentially to 58.7GW by 2030.

3 Sale of Renewable Energy and Financial Incentives

3.1 What is the legal and regulatory framework for the sale of utility-scale renewable power?

"Trading" in electricity, including the sale, purchase, import or export of a product or services included in an Electricity Activity (regardless of whether it derives from renewable or conventional energy), is regulated by WERA and governed by the Electricity Law and its Implementing Regulations.

3.2 Are there financial or regulatory incentives available to promote investment in/sale of utility-scale renewable power?

There are a number of incentives available to promote investment in renewable energy projects under NREP, including:

- 100% foreign direct ownership.
- Up to 15% (for male) and 20% (for female) of the monthly salaries of KSA national employees are paid by the Human Resources Development Fund.
- Customs duties exemptions may be available, on application, for the import of primary raw materials, manufacturing equipment and spare parts, as well as refunds to importers/exporters of raw material imports that are processed in KSA and re-exported as more finished products.
- Land incentives may also be available, with subsidised leases for projects.

3.3 What are the main sources of financing for the development of utility-scale renewable power projects?

To date, the main sources of funding for utility-scale renewable power projects in KSA have been commercial banks as part of project-financed transactions falling under NREP.

In 2020, SEC offered a US$1.3 billion green bond (the first ever in KSA); it was four times oversubscribed. The introduction of sustainable debt instruments is expected to provide KSA with additional funding sources to support the growth of the renewable energy sector.

3.4 What is the legal and regulatory framework applicable to distributed/C&I renewable energy?

The Regulatory Framework for Small-Scale Solar PV Systems (the "**Regulatory Framework**") sets out a framework for

connection of small-scale solar distribution systems to the grid. It applies to a small-scale solar system connected to the Distribution System with an installed capacity ranging in size from 1kW–2MW in a single Premises (the "**Small-Scale Solar PV System**"). The aggregate capacity installed in different Premises owned by the same Eligible Customer in a supply area related to one Electricity Department may not exceed 5MW. There are six Electricity Departments: Southern region; Eastern region; North-Eastern region; North-Western region; Western region; and Central region. In addition, the total installed Small-Scale Solar PV System capacity may not exceed 15% of a substation's transformer rated capacity.

Under the Regulatory Framework, consumers, as Eligible Customers, are entitled via a lease or similar contract to build and operate or be in possession of Premises on which the Small-Scale Solar PV System is to be installed. The system can only be connected to one Exit Point at the Premises.

The Regulatory Framework provides for net metering through a Net Billing scheme. Any exported electricity is credited to the monthly electricity bill at a fixed price per energy unit. Surplus credit can be rolled over into subsequent months. The Distribution Service Provider is obliged to provide the Net Billing arrangement to all Eligible Consumers, provided that the Small-Scale Solar PV System does not exceed in aggregate 3% of the preceding year's peak load of the power system within the distribution operating area.

The Regulatory Framework includes a Form of Grid Connection Agreement for a Small-Scale Solar PV System which is valid for a maximum period of 20 years.

Off-grid systems and solar systems with an installed capacity above 2MW are excluded from the scope of the Regulatory Framework.

In February 2021, the MOE announced the start of a programme for installing small-scale solar PV systems and connecting them to the transmission systems of KSA's national power grid. The programme includes the launch of the Shamsi portal dedicated to the Small-Scale Solar PV System, through WERA. The Shamsi portal includes information on the economic feasibility and estimated costs of installing a solar energy system in a home or facility, before connecting it to the transmission system.

3.5 Are there financial or regulatory incentives available to promote investment in distributed/C&I renewable energy facilities?

Under the Regulatory Framework, any exported electricity is credited to the monthly electricity bill at a fixed price per energy unit. For residential consumption, this has been defined as 7 *Halalah*/kWh; for non-residential consumption, the amount is not specified in the Regulatory Framework and is to be specified by WERA resolution.

3.6 What are the main sources of financing for the development of distributed/C&I renewable energy facilities?

The Regulatory Framework provides for a leasing arrangement to be used by consumers.

3.7 What is the legal and regulatory framework that applies for clean energy certificates/environmental attributes from renewable energy projects?

In practice, clean energy certificates/environmental attributes from renewable energy projects have been regulated as a matter of contract. Utility-scale projects have required any such certificates to be for the account of the procurer.

3.8 Are there financial or regulatory incentives or mechanisms in place to promote the purchase of renewable energy by the private sector?

We are not aware of any promotional or regulatory incentives to promote the purchase of renewable energy by the private sector.

4 Consents and Permits

4.1 What are the primary consents and permits required to construct, commission and operate utility-scale renewable energy facilities?

According to the Electricity Law and its Implementing Regulations, any entity undertaking Electricity Activity must obtain and maintain a valid licence from WERA.

In addition, a number of approvals are required, including an environmental and social impact assessment and, subject to the requirements of the local municipality where the project is located, a building or construction permit or licence. A number of approvals or no-objection certificates are also required, for example from Civil Defence and Saudi Telecoms.

Companies must be licensed to operate with the correct activities and have a Ministry of Commerce and Investment commercial registration licence. International companies must typically obtain an investment licence issued by the Ministry of Investment ("**MOI**").

4.2 What are the primary consents and permits required to construct, commission and operate distributed/C&I renewable energy facilities?

Please see question 4.1 above.

4.3 What are the requirements for renewable energy facilities to be connected to and access the transmission network(s)?

According to the Grid Code, power plants need to submit an application for interconnection with the national transmission system operator, National Grid SA, and thereafter enter into a connection agreement. Developers bear the costs for connection to the grid and the transmission system operator covers the grid upgrades beyond the connection point. The Grid Code includes requirements for the voltage, frequency and modulation of renewable resource generation.

4.4 What are the requirements for renewable energy facilities to be connected to and access the distribution network(s)?

Part 4 (Connection Conditions) of the Distribution Code lists and outlines the requirements and conditions that define the minimum standards of connection to the distribution system and the technical, design and operational standards to which users connecting to the distribution system must comply. The conditions listed aim to specify the minimum standards of connection to the distribution system.

4.5 Are microgrids able to operate? If so, what is the legislative basis and are there any financial or regulatory incentives available to promote investment in microgrids?

A number of off-grid systems operate in KSA, particularly in remote areas where connection to the main grid is not available. These have traditionally been based on off-grid diesel generation.

We are not aware of any financial or regulatory incentives available to promote investment in microgrids.

4.6 Are there health, safety and environment laws/regulations which should be considered in relation to specific types of renewable energy or which may limit the deployment of specific types of renewable energy?

Projects will need to comply with the legal and regulatory requirements, including with respect to health, safety and the environment, irrespective of the type of renewable energy technology.

5 Storage

5.1 What is the legal and regulatory framework which applies to energy storage and specifically the storage of renewable energy?

There is currently no legal and regulatory framework in place which is specific to renewable energy storage.

5.2 Are there any financial or regulatory incentives available to promote the storage of renewable energy?

We are not aware of any promotional or regulatory incentives to promote the storage of renewable energy. However, given the commitment to deploying solar PV, there is an increased emphasis on storage projects. In 2020, the Red Sea Development Company announced that it was procuring what is reportedly the world's largest battery storage facility.

6 Foreign Investment and International Obligations

6.1 Are there any special requirements or limitations on foreign investors investing in renewable energy projects?

Foreign investors in KSA are typically required to obtain an investment licence from MOI as well as a licence from the relevant authority depending on the activity. Corporate foreign entities seeking to invest in KSA are required to have been in operation for at least one year in their country of origin, and foreign natural persons seeking to invest are required to have a Saudi Premium Residency Card.

6.2 Are there any currency exchange restrictions or restrictions on the transfer of funds derived from investment in renewable energy projects?

Except for the Israeli shekel, there are generally no currency exchange restrictions in KSA.

6.3 Are there any employment limitations or requirements which may impact on foreign investment in renewable energy projects?

The Saudi Nationalisation Scheme, or *Nitaqat*, as implemented by the Ministry of Human Resources and Social Development, requires KSA companies and enterprises to employ a minimum number of KSA nationals depending on various factors such as industry and company size. In addition to these minimum requirements, as a matter of contract, publicly procured renewables projects will typically include robust Saudisation requirements.

6.4 Are there any limitations or requirements related to equipment and materials which may impact on foreign investment in renewable energy projects?

The Local Content and Government Procurement Authority is authorised to set local content requirements for individual contractors, and RFPs are required to set a minimum requirement of local content that a bidder must meet in order to participate.

7 Competition and Antitrust

7.1 Which governmental authority or regulator is responsible for the regulation of competition and antitrust in the renewable energy sector?

According to the Competition Law and its Implementing Regulations (collectively, the "**Competition Laws**"), the General Authority for Competition (the "**Authority**") has primary jurisdiction over any matters arising from the application of the Competition Laws and is responsible for protecting and encouraging fair competition as well as maintaining justice and transparency within the domestic market. The Authority is vested with inherent jurisdiction, even when there is an overlap or conflict with other governmental authorities or regulators.

Further, under the Electricity Law, MOE and WERA are mandated to promote competition in the electricity sector, to encourage the private sector to invest in the electricity sector and to ensure that consumers have the right choice in obtaining electricity services. A licensee with a dominant position in the electricity sector is prohibited from any undertaking that may restrict competition.

7.2 What power or authority does the relevant governmental authority or regulator have to prohibit or take action in relation to anti-competitive practices?

The Board of the Authority may initiate enquiries and investigations and may research and collect evidence regarding practices in violation of the Competition Laws. Officials of the Authority are given the authority to enter into premises (within working hours) to review and gain access to books and documents and make copies; they may also question managers, shareholders and employees. Along with some other penalties imposed on violators by the Competition Laws, the Competition Laws also state that the Authority may close entities that violate the Competition Laws for a period of 30 days should the violator fail to remedy the violation within a designated period.

Under the Electricity Law, licensees are prohibited from entering into any agreement or arrangement that impedes or restricts competition in the electricity sector. Any such action will be considered null and void.

7.3 What are the key criteria applied by the relevant governmental authority or regulator to determine whether a practice is anti-competitive?

The Competition Laws illustrate what are considered anti-competitive practices among competing or potentially competing entities, including: (i) raising, lowering or fixing prices of commodities, terms of sale and purchase, and the like; (ii) depriving (wholly or partially) an entity or a group of entities from commodities which are available in the market; (iii) dividing markets; (iv) limiting the process of manufacturing, development, marketing and distribution; and (v) colluding in tenders or bids in government and non-government auctions and procurement, in any form whatsoever. However, entities may request from the Board an exemption from the application of anti-competitive practices, and the Board may approve such an application if it considers that such exemption would lead to an improved market.

Under the Electricity Law, licensees must obtain WERA's approval prior to undertaking any merger or acquisition of majority shares or assets of other licensees, and must inform WERA of any initial agreement reached on such a merger. Licensees must also obtain WERA's approval prior to purchasing 5% or more of the shares, securities or any other form of ownership rights in another licensee, or purchasing a lesser percentage that may create a dominant position in any part of the electricity sector.

8 Dispute Resolution

8.1 Provide a short summary of the dispute resolution framework (statutory or contractual) that typically applies in the renewable energy sector, including procedures applying in the context of disputes between any applicable government authority/regulator and the private sector.

Generally, unless the parties involved agree to refer their disputes to arbitration, local courts will have jurisdiction.

Power purchases agreements (whether for conventional or renewable energy) will typically include dispute resolution provisions, which set out a tiered procedure, culminating in arbitration. However, a project will also typically involve land agreements, which will be subject to local court dispute resolution, as well as financing documents, which may include reference of disputes to the Saudi Arabian Central Bank Disputes Committee.

8.2 Are alternative dispute resolution or tiered dispute resolution clauses common in the renewable energy sector?

Alternative dispute resolution clauses are generally common in KSA, with the country having taken steps to make itself more arbitration friendly by opening the Saudi Centre for Commercial Arbitration ("**SCCA**") in 2016 and adopting rules based upon international practices. Declining jurisdiction when faced with a valid arbitration clause is now an established practice in KSA courts. Mediation is also a recognised form of dispute resolution in KSA and is provided by SCCA.

Specifically in relation to renewable energy projects, as mentioned above, alternative dispute resolution clauses are commonplace in relation to power purchase agreements. This will typically include a tiered process commencing with amicable dispute resolution, followed by expert determination and finally arbitration.

8.3 What interim or emergency relief can the courts grant?

SCCA stipulates that requests for emergency relief should be justified, and that the request should contain a statement of the emergency relief sought, and the reasons why the applicant needs urgent interim measures that cannot await the constitution of the tribunal.

With respect to the KSA courts, a plaintiff may request that the court issue an interim judgment on grounds of urgency, which is enforceable, prior to judgment of the merits of the case.

8.4 Is your jurisdiction a party to and has it ratified the New York Convention on the Recognition and Enforcement of Foreign Arbitral Awards and/or the Convention on the Settlement of Investment Disputes between States and Nationals of Other States and/or any significant regional treaty for the recognition and enforcement of judgments and/or arbitral awards?

Yes. KSA is a party to both the New York Convention on the Recognition and Enforcement of Foreign Arbitral Awards (the "**New York Convention**") and the Convention on the Settlement of Investment Disputes between States and Nationals of Other States (the "**ICSID**").

KSA acceded to the New York Convention on 19 April 1994 on the basis of reciprocity and with a declaration that it shall restrict the application of the New York Convention to the recognition and enforcement of arbitral awards made in the territory of New York Convention Contracting States.

KSA signed the ICSID on 28 September 1979, and it entered into force in KSA on 7 June 1980.

KSA is also a party to the 1983 Riyadh-Arab Agreement for Judicial Co-operation (the "**Riyadh Convention**") and the 1996 Gulf Co-operation Council Convention for the Execution of Judgments, Delegations and Judicial Notifications (the "**GCC Convention**"). The Riyadh and GCC Conventions provide, among other things, for the recognition and enforcement of civil judgments among contracting parties.

In addition, KSA has its own domestic arbitration law based on the UNCITRAL Model Law, which ensures the parties' rights to agree on such things as the governing law, location and language to be used as well as whether to use *ad hoc* or institutional arbitration. The enforcement courts in KSA permit the enforcement of international awards (including judgments and awards obtained in foreign jurisdictions) in KSA.

8.5 Are there any specific difficulties (whether as a matter of law or practice) in litigating, or seeking to enforce judgments or awards, against government authorities or the state?

Litigating with government authorities is possible in KSA. According to the Civil Procedures Law, cases against government administrative agencies can be filed with the court that has jurisdiction over the head office thereof. In addition, a lawsuit may be filed with the court that has jurisdiction over the branch of a government agency in matters relating to that branch.

8.6 Are there examples where foreign investors in the renewable energy sector have successfully obtained domestic judgments or arbitral awards seated in your jurisdiction against government authorities or the state?

KSA government authorities were only recently permitted to enter into arbitration agreements (once they obtain approval

from the Minister of Finance) with the issuance of the new Government Tenders and Procurement Law issued on 13/11/1440H (corresponding to 16 July 2019), whereas previously it was only on an exceptional basis; consequently, there are no publicly available examples accessible.

More recently, for projects being procured as public private partnerships ("**PPPs**"), in accordance with article 2 of Council of Ministers Resolution No. 436, disputes arising from a PPP contract may be settled through arbitration, whether inside or outside KSA, according to the rules issued by the Board of the National Centre for Privations. PPP contracts may include a clause for resolving any dispute arising from the contract through arbitration, following approval of the Competent Agency.

9 Updates and Recent Developments

9.1 Please provide a summary of any recent cases, new legislation and regulations, policy announcements, trends and developments in renewables in your jurisdiction.

The latest MOE tenders have been and continue to be a success, even in the time of COVID-19. PIF-backed initiatives have also been very successful in attracting developers for large-scale, multifaceted projects. Assuming this trend will continue, KSA is well on its way to meet its ambitious renewable energy targets, even in the absence of specific laws and regulations to promote utility-scale renewables.

The Regulatory Framework and Shamsi portal represent milestones in relation to distributed renewable energy in KSA and are expected to facilitate the growth of the solar commercial and industrial sector in KSA.

In 2020, ambitious plans were announced for a green hydrogen plant in KSA. The plant will be powered by 4GW of wind and solar power and, when completed, is expected to produce 650 tonnes of green hydrogen daily. The fuel will be shipped as ammonia to end markets globally, then converted back to hydrogen. Ammonia production is expected to start in 2025.

Note

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The laws referenced in this chapter are English translations of the original Arabic language laws. Where there is a conflict between the English translation and the original Arabic language law, the Arabic language law prevails.

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Mhairi has advised on a number of award-winning and ground-breaking renewable energy deals in the Middle East. In KSA, she has advised on bids for REPDO Round 3, REPDO Round 2, Sakaka Solar PV IPP, and the Al Jouf Solar and Al Rafha Solar PV IPPs, as well as the development of pilot solar energy projects.

Mhairi is a member of the Board and Vice-Chair of the Clean Energy Council, a non-profit organisation providing a forum for both private and public sector organisations participating in the clean energy sector across the MENA region.

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1 Overview of the Renewable Energy Sector

1.1 What is the basis of renewable energy policy and regulation in your jurisdiction and is there a statutory definition of 'renewable energy', 'clean energy' or equivalent terminology?

The regulation of the electricity supply industry is governed by the Electricity Regulation Act 4 of 2006 (**ERA**). In terms of section 34 of the ERA, the Minister of the Department of Mineral Resources and Energy (**Minister**), in consultation with the National Energy Regulator of South Africa (**NERSA**), may determine that new generation capacity is needed to ensure the continued uninterrupted supply of electricity, the types of energy sources from which electricity must be generated and the percentages of electricity that must be generated from such sources, the buyer and seller of such electricity and the procurement process to be followed.

On 6 May 2011, the then Department of Energy, now known as the Department of Mineral Resources and Energy (**DMRE**) released the Integrated Resource Plan 2010–2030 (**IRP2010**) in respect of South Africa's forecast energy demand for the 20-year period. The IRP2010 was intended to be a 'living plan' that would be periodically and regularly revised. However, the IRP was only updated and revised on 18 October 2019 (**IRP2019**).

Electricity Regulations on New Generation Capacity (**New Gen Regulations**) published under the ERA, which came into effect on 4 May 2011, have as their objectives:

- the facilitation of planning for the establishment of new generation capacity;
- the regulation of entry by a buyer and a generator into a power purchase agreement (**PPA**);
- the establishment of minimum standards or requirements for PPAs;
- the facilitation of the full recovery by the buyer of all costs efficiently incurred by it or in connection with a PPA, including a reasonable return based on the risks assumed by the buyer thereunder and to ensure both transparency and cost reflectivity in the determination of electricity tariffs; and
- the provision of a framework for the implementation of an independent power producer (**IPP**) procurement programme as well as the relevant agreements to be concluded.

The Renewable Energy IPP Procurement Programme (**REIPPP Programme**) bid documents define Renewable Energy as the harnessing of naturally occurring non-depletable sources of energy, including solar, wind, biomass, hydro, tidal wave, ocean current and geothermal, to produce electricity, gaseous and liquid fuels, heat or a combination of these energy types.

1.2 Describe the main participants in the renewable energy sector and the roles which they each perform.

The Minister sets the energy policy in South Africa and directs how generation capacity from renewable energy resources is to be developed and procured.

NERSA is the custodian and enforcer of the ERA. It is also empowered to issue licences for various activities. It regulates electricity prices and tariffs.

Eskom Holdings SOC Ltd (**Eskom**), the national utility, has been designated as the offtaker in the REIPPP Programme. It also performs the functions of generator, the National Transmission Company (**NTC**), distributor and system operator. Significant strides have been made towards the unbundling of Eskom into separate generation, transmission and distribution divisions with ring-fenced balance sheets and governance structures. The transmission division is on track for separation by the end of 2021, giving life to an independent ITSMO.

IPPs have been licensed to undertake the generation and sale of electricity produced from renewable energy plants. IPPs are also permitted, subject to compliance with the law, to develop embedded generation projects (discussed below).

1.3 Describe the government's role in the ownership and development of renewable energy and any policy commitments towards renewable energy, including applicable renewable energy targets.

The IRP2010 contained capacity allocations for electricity generated from renewable technologies and it is against these allocations that the then Minister of Energy issued section 34 determinations for renewable energy, which included the technologies of solar photovoltaic (**PV**), wind, concentrated solar power (**CSP**), landfill gas, biomass, biogas, small hydro (≤ 40 MW) and small projects (≤ 5 MW). This was followed by the introduction of the REIPPP Programme. A public competitive procurement process was undertaken which, after the first four rounds, culminated in the conclusion of PPAs totalling 92 projects and 6,327 MW of renewable energy technology.

The most dominant renewable energy technologies in the IRP2019 are wind and solar PV technologies. There is a consistent annual allocation of 1,600 MW for wind technology commencing in the year 2022 to 2030, totalling 14,400 MW. A

solar PV allocation of 1,000 MW per year is incremental over the period up to 2030, totalling 6,000 MW. Distributed generation, biomass and landfill have also been given allocations under the IRP2019, with no allocation given to new generation capacity from solar CSP.

In respect of the most recent IPP programmes, the section 34 determinations for both the 2020 technology agnostic Risk Mitigation IPP Procurement Programme (**RMIPPP Programme**) and the REIPPP Programme specified the DMRE as the procurer, with Eskom being the buyer purchasing energy from IPPs.

2 Renewable Energy Market

2.1 Describe the market for renewable energy in your jurisdiction. What are the main types of renewable energy deployed and what are the trends in terms of technology preference and size of facility?

Of the 92 renewable energy projects which have reached commercial close under round 1 to 4 of the REIPPP Programme to date, the technology and capacity allocations are as follows:

- onshore wind – 34 projects with a total capacity of 3,357 MW;
- solar PV – 45 projects with a total capacity of 2,292 MW;
- solar CSP – seven projects with a total capacity of 600 MW;
- landfill gas – one project of 18 MW;
- biomass – two projects totalling 42 MW; and
- small hydro – three projects totalling 19 MW.

In the distributed generation space, the dominant technology is solar PV, either ground mounted or rooftop.

2.2 What role does the energy transition have in the level of commitment to, and investment in, renewables? What are the main drivers for change?

There is an aggressive drive by the South African government to not only include renewable energy technology in the energy mix, but also to direct the procurement and development of utility-scale renewable energy projects. The section 34 ministerial determinations under the REIPPP Programme allocated the role of procurer to the DMRE. The government has also created an enabling environment through: policy change; inter-governmental co-operation which enabled efficient consideration of all permits, authorisations, licences, approvals and the like; and by committing to an implementation agreement as a form of government support over each project which concluded a PPA under the REIPPP Programme. This enabling environment has led to South Africa procuring some of the cheapest renewable energy technologies globally.

The main drivers behind supporting renewables are the continued downward price trends, the fairly short timelines within which these projects can be developed and importantly, to reduce the carbon footprint of the country.

2.3 What role, if any, has civil society played in the promotion of renewable energy?

Corporations and government have faced increasing pressure from civil society to divest from fossil fuels as an energy source, which has invariably placed a focus on renewables as a preferred energy alternative. Local non-governmental organisations are particularly active in this space, often bringing legal challenges against the development of or investment in non-renewable energy infrastructure.

Large financial institutions have also become more vocal in demanding greater transparency regarding climate change risk exposure from fossil fuel lending. This has led to the publication of various policies across the financial sector committed to more sustainable funding.

As these pressures disrupt the existing thermal heavy energy landscape, the shift in focus to renewables as an energy source continues to gain momentum.

2.4 What is the legal and regulatory framework for the generation, transmission and distribution of renewable energy?

Electricity may only be transmitted, distributed, sold or generated under the authority of a licence granted by NERSA under the ERA. Section 7 of the ERA provides that, unless otherwise exempt from having to hold a generation licence in terms of Schedule 2 to the ERA, no person may, without a licence issued by NERSA, operate any generation, transmission or distribution facility, import or export any electricity, or be involved in trading.

Various environmental laws are also of relevance which impose numerous permitting requirements (as discussed below), and a general duty of care requiring project companies to take reasonable measures to ensure that no significant pollution or environmental degradation is caused throughout the life of the project. This duty can also extend to shareholders and lenders, depending on the level of control exercised over the project company or the project.

2.5 What are the main challenges that limit investment in, and development of, renewable energy projects?

Whilst a strong policy has created a stable foundation for the procurement and development of utility-scale renewable energy generation, the highly regulated legal framework has also created constraints on the development of captive renewable energy projects (where a private developer may seek to sell its energy to a private offtaker). With the increase in electricity prices to the end consumer, repeated load shedding and the need for security of supply by commercial and industrial customers, the C&I space holds immense development potential. However, there are various restrictions pertaining to the issue of a generation licence to such projects (as discussed below).

There are certain locations within South Africa that are already congested, typically where optimal resources of solar or wind are available. However, congested locations face constraints with their grid connection and the costs of upstream strengthening can negatively impact the viability of projects.

2.6 How are large utility-scale renewable power projects typically tendered?

Where the government or a state-owned organisation is the procuring entity, it is obliged to follow an open, competitive, transparent and fair process in terms of the law. The national government-procured REIPPP Programme was undertaken on a competitive public tender basis with very prescriptive qualification and evaluation criteria.

2.7 To what extent is your jurisdiction's energy demand met through domestic renewable power generation?

According to the IRP2019, the South African power system consists of the following installed capacity generation options:

- 38 GW from coal;

- 1.8 GW from nuclear;
- 2.7 GW from pumped storage;
- 1.7 GW from hydro;
- 3.8 GW from diesel; and
- 3.7 GW from renewable energy.

This translates to 7.2% of the energy demand being met through domestic renewable energy power generation.

In the first iteration of the draft National Infrastructure Plan 2050 (**2050 NIP**) that was published by the Department of Public Works and Infrastructure for comment on 11 August 2021, it was stated that the energy mix will be bolder on sustainability and in achieving least cost. Reliance on coal will be reduced and reliance on renewable energy will be dramatically lifted, particularly solar and wind, which are least-cost options and where South Africa has significant comparative advantage. The goals are to ensure financial and environmental sustainability and also to ensure that South Africa exports do not face border carbon taxes. By 2050, energy demand is projected to increase by 30%. Installed generation capacity will more than double from 53 GW in 2018 rising to between 133 GW and 174 GW by 2050, depending on the energy mix at that time. By 2030, 25 GW will be added to installed capacity.

3 Sale of Renewable Energy and Financial Incentives

3.1 What is the legal and regulatory framework for the sale of utility-scale renewable power?

The sale of utility-scale power requires a trading licence. Trading is defined in the ERA as the buying or selling of electricity as a commercial activity.

3.2 Are there financial or regulatory incentives available to promote investment in/sale of utility-scale renewable power?

Several significant tax incentives are available to promote investment in or sale of utility-scale renewable power:

- Section 12B of the Income Tax Act 58 of 1962 (**ITA**) provides for an accelerated capital depreciation allowance in respect of solar (CSP or PV up to or more than 1 MW), hydro (up to 30 MW), wind (no cap) or biomass (no cap), and renewable energy generation assets owned or acquired by the taxpayer in terms of an instalment credit agreement and brought into use for the first time by the taxpayer for the purposes of its trade.
- As section 12B caters only for the actual plant and machinery generating the renewable energy and improvements thereon (including supporting structures like foundations), section 12U of the ITA was introduced in April 2016 to permit an additional deduction in respect of expenditure for other general supporting infrastructure such as roads, fences and the like in relation to larger-scale renewable energy projects.
- In terms of section 12N of the ITA, improvements associated with certain public sector procurement, such as the REIPPP Programme made to a property that is leased and not owned by the taxpayer, qualify for a depreciation allowance on the value of the improvement. The allowance also applies to depreciation associated with section 12B of the ITA.

A carbon tax became effective on 1 June 2019 with the promulgation of the Carbon Tax Act 15 of 2019 (**CTA**). The tax is being implemented in a phased manner, with various tax-free allowances available during the first phase (June 2019 to December 2022). In terms of the Act, taxpayers may utilise credits generated through eligible carbon offset projects as a means of reducing their carbon tax liability up to a maximum of 5–10%. Certain Clean Development Mechanism (**CDM**), Verified Carbon Standard or Gold Standard approved renewable energy projects are now eligible as carbon offsets under the fairly new carbon tax regime.

Carbon offsets are more fully regulated under the Regulations on Carbon Offsets that were promulgated in November 2019 (and recently amended in July 2021) and will be administered by the DMRE through the Carbon Offset Administration System, which went live on 23 July 2020. The system incentivises investment in or the uptake of, *inter alia*, qualifying renewable energy projects by both entities liable under the carbon tax and those looking to generate and sell carbon credits to carbon taxpayers.

3.3 What are the main sources of financing for the development of utility-scale renewable power projects?

Most projects are financed with a combination of equity and debt from local commercial banks and local and foreign development finance institutions. Most projects under the REIPPP Programme have limited-recourse financing, with some mature portfolio developers being able to finance projects on a corporate finance basis.

3.4 What is the legal and regulatory framework applicable to distributed/C&I renewable energy?

Schedule 2 to the ERA sets out which activities are exempt from the requirement to apply for and hold certain licences under the ERA, and provides an indication as to what activities are required to instead be registered with NERSA. Following the presidential announcement to this effect in June 2021 and consultation with NERSA and other stakeholders, the Minister gazetted amendments to Schedule 2 of the ERA on 12 August 2021 to increase the exemption threshold for an electricity generation licence for embedded generation from 1 MW to 100 MW. There is no limitation with regard to the type of technology that this capacity exemption applies to.

Schedule 2, in its most recently amended form, exempts several activities relating to the operation of generation facilities from the licensing requirement in the ERA, including (amongst others):

- standby or back-up electricity generation;
- embedded generation where there is no point of interconnection with the national grid, i.e. off-grid;
- operation of a generation facility with a capacity of no more than 100 kW, which is compliant with the applicable Codes and where there is an existing point of interconnection with the national grid;
- embedded generation where there is a point of interconnection with the national grid and a capacity of no more than 100 MW;
- facilities used for demonstration purposes only; and
- continued operation of a generation facility which was exempt prior to the amended Schedule 2 commencement.

The updates to Schedule 2 to the ERA, although not entirely clear, are understood to permit the generation and sale of electricity from embedded generation with a generation capacity of no more than 100 MW for wheeling across the national grid and for on-selling to more than one customer. The lack of defined terms, however, creates ambiguity in respect of reselling this

electricity. NERSA may in future clarify such ambiguities at stakeholder workshops, as has been their practice in the past. Further, there are no rules regulating the registration of such activities with NERSA (as required in terms of the ERA); nor is there any national legislation governing net-metering schemes.

3.5 Are there financial or regulatory incentives available to promote investment in distributed/C&I renewable energy facilities?

To the extent applicable, the tax incentives in terms of sections 12B, 12N and 12U of the ITA referred to in question 3.2 will also apply to distributed renewable energy facilities. Of particular interest is that section 12B provides for an accelerated write-off of the asset of 100% in the first year, in respect of solar PV energy of less than 1 MW, which encourages investment in distributed renewable energy facilities.

Distributed renewable energy projects can also qualify as carbon offsets in terms of the CTA referred to in question 3.2, which serves as an incentive to invest in such projects.

3.6 What are the main sources of financing for the development of distributed/C&I renewable energy facilities?

The main sources of financing are:

- equity financing;
- debt financing from local commercial banks;
- consumer financing (consumer purchases the facility to own on credit); and
- lease financing (consumer leases the facility with an option to purchase).

The lack of an electricity wholesale market and clear regulations to date have impacted the ability of IPPs to secure external debt funding from local commercial banks. Generally, external debt funders will only provide debt funding once the distributed renewable energy facility is fully licensed and operational, thereby avoiding construction and regulatory risk.

3.7 What is the legal and regulatory framework that applies for clean energy certificates/environmental attributes from renewable energy projects?

In 1997, South Africa became a party to the United Nations Framework Convention on Climate Change (1992) (**Convention**) and ratified the Paris Agreement in November 2016, committing to a peak, plateau and decline of greenhouse gas emissions trajectory under its Nationally Determined Contribution. At a country level, the South African government has introduced a carbon tax, coupled with carbon offsets, in order to meet these emission reduction targets.

The Kyoto Protocol (1997), adopted under the Convention, goes further and provides market-based mechanisms intended to assist parties in meeting emission reduction targets. It is a requirement that participating countries must identify a designated national authority (**DNA**), which must consider applications for CDM projects and certify that they comply with national laws and the international law requirements as part of the process for issuing Certified Emissions Reductions.

South Africa is classified as a developing country for the purposes of the Convention and the Kyoto Protocol. South Africa designated the then Department of Energy as its DNA in regulations made under the National Environmental Management Act 107 of 1998 (**NEMA**) in 2005.

3.8 Are there financial or regulatory incentives or mechanisms in place to promote the purchase of renewable energy by the private sector?

Excluding the above-mentioned, there are no regulatory incentives to promote the purchase of renewable energy by the private sector. There are currently also no government rebates or subsidies to promote the purchase of renewable energy by the private sector.

4 Consents and Permits

4.1 What are the primary consents and permits required to construct, commission and operate utility-scale renewable energy facilities?

A generation and trading licence is required in order to generate and sell electricity.

In terms of environmental law, an environmental authorisation (**EA**) is the primary permit required under the NEMA, Environmental Impact Assessment (**EIA**) Regulations and EIA Listing Notices for the development of such facilities. An EA must be obtained prior to commencing with:

- the development of renewable energy generation facilities above 10 MW, save for in relation to solar PV installations located within urban areas or on existing infrastructure;
- the development of permanent electricity transmission and distribution infrastructure above specified capacity thresholds; and
- other listed or specified activities triggered by the project under the EIA Listing Notices; for example, indigenous vegetation clearance or impacting on a watercourse.

Additional environmental and other land-use permits may also be required depending on a project's locality, design and dependence or impact on other natural resources, including permits for or relating to water use, watercourse impacts, effluent, heritage resources, biodiversity, air emissions, waste, hazardous substances, electronic communication systems and civil aviation.

4.2 What are the primary consents and permits required to construct, commission and operate distributed/C&I renewable energy facilities?

In the event that the operation of the distributed renewable energy facility qualifies for an exemption in terms of Schedule 2 to the ERA, the owner of the facility will need to register the generation facility with NERSA.

If no exemption is granted, a generation and trading licence is required to generate and sell electricity.

Under the EIA Listing Notices, an EA is not required for the development of renewable energy generation facilities below 10 MW, unless the physical footprint of such facility exceeds one hectare in extent. The development of solar PV installations within urban areas or on existing infrastructure, however, remains exempt from the requirement to obtain an EA, unless other activities under the EIA Listing Notices are triggered.

Additional other land-use permits may also be required as detailed in question 4.1.

4.3 What are the requirements for renewable energy facilities to be connected to and access the transmission network(s)?

The national utility Eskom, through the NTC, is the only holder of a transmission licence. The NTC has an obligation to

provide non-discriminatory access to the transmission system to customers, provided such access complies with all technical, safety and commercial requirements as set out in the South African Grid Code and the Transmission Grid Code, as applicable. The right to access the transmission system required in order to connect the renewable energy generation facility to the transmission system is subject to the IPP:

- making an application to the NTC to approve the connection of the renewable energy generation facility to the transmission system;
- obtaining a generation and trading licence from NERSA;
- complying with the requirements of the Transmission Grid Code and relevant technical requirements;
- entering into a connection and use of system agreement as required in terms of the South African Grid Code and the Transmission Grid Code; and
- being liable to pay the relevant connection charge.

NERSA has published the Grid Connection Code for Renewable Power Plants connected to the electricity transmission system or the distribution system in South Africa (**RPP Code**), which sets out minimum technical and design grid connection requirements for RPPs connected to or seeking connection to the South African electricity transmission system or distribution system.

4.4 What are the requirements for renewable energy facilities to be connected to and access the distribution network(s)?

Distribution licences are held by Eskom and various municipalities. A licensed distributor has an obligation to provide non-discriminatory access to the distribution system to customers, provided such access complies with all technical, safety and commercial requirements as set out in the South African Grid Code and the Distribution Grid Code, as applicable. The right to access the distribution system required in order to connect the renewable energy generation facility to the distribution system is subject to the IPP:

- making an application to the relevant licensed distributor to approve the connection of the renewable energy generation facility to the distribution system;
- obtaining a licence from NERSA or qualifying for an exemption in terms of Schedule 2 to the ERA;
- complying with the requirements of the Distribution Grid Code and relevant technical requirements;
- entering into a connection and use of system agreement as required in terms of the South African Grid Code and the Distribution Grid Code; and
- being liable to pay the relevant connection charge.

As noted in question 4.3 above, the RPP Code will also be applicable.

4.5 Are microgrids able to operate? If so, what is the legislative basis and are there any financial or regulatory incentives available to promote investment in microgrids?

Yes; however, microgrid technology is in a developmental stage, with the IRP 2019 identifying the need to quantify off-grid and microgrid opportunity and put in place the necessary frameworks for accelerated development. There is no specific legislation dealing with microgrids; the ERA would apply to such projects. Some of the existing financial incentives for rural electrification may be applicable; however, there are no specific financial incentives for microgrids at this stage.

4.6 Are there health, safety and environment laws/regulations which should be considered in relation to specific types of renewable energy or which may limit the deployment of specific types of renewable energy?

To the contrary, recent environmental legislative developments are aimed at creating a more enabling regulatory framework for renewable energy projects. The Minister of Forestry, Fisheries and the Environment has published notices in terms of the NEMA for the identification of geographical areas of strategic importance for the development of large-scale wind and solar PV energy facilities, which are known as Renewable Energy Development Zones (**REDZ**). Utility-scale wind and solar PV facilities located within a REDZ have the benefit of a 'fast-tracked' EA application and amendment procedures. Similar expediated procedures apply in respect of large-scale electricity transmission and distribution development activities situated in identified geographical areas of strategic importance. As discussed above, EA exemptions are otherwise only applicable to solar PV installations located within urban areas or on existing infrastructure or renewable energy projects below 10 MW and not exceeding 10 hectares in extent. Furthermore, water use licence application processes have been streamlined from 300 days to 90 days by the Department of Water and Sanitation.

5 Storage

5.1 What is the legal and regulatory framework which applies to energy storage and specifically the storage of renewable energy?

A Draft Grid Code for Battery Energy Storage Facility connected to the electricity Transmission System or Distribution System in South Africa was published for comment by NERSA early in 2021. The IRP2019 included an allocation of 2,088 MW for storage and the Minister's most recent section 34 determination under the ERA included 513 MW of capacity to be generated from storage.

Battery energy storage facilities may require an EA insofar as the chemical electrolyte from the battery cells constitutes dangerous goods as contemplated under the EIA Listing Notices and the associated thresholds are met or exceeded. This must, however, be assessed on a case-by-case basis.

5.2 Are there any financial or regulatory incentives available to promote the storage of renewable energy?

Energy storage is in a developmental stage. Some of the existing financial incentives for renewable energy may be applicable to storage depending on the specific facts and circumstances. Further, a taxpayer may qualify for an additional deduction for expenditure incurred in respect of scientific and technological research and development under section 11D of the ITA.

6 Foreign Investment and International Obligations

6.1 Are there any special requirements or limitations on foreign investors investing in renewable energy projects?

There are no general restrictions on foreign ownership of companies operating in the renewable energy sector. Foreign

investors are permitted to own land and enter into long-term lease agreements for renewable energy projects.

However, in order to achieve the economic development imperatives of the South African government such as increased localisation, the creation of employment and the development of skills, the REIPPP Programme requires a level of direct or indirect shareholding by South African Citizens (49% in round 5 of the REIPPP Programme).

6.2 Are there any currency exchange restrictions or restrictions on the transfer of funds derived from investment in renewable energy projects?

Yes. South Africa currently has an exchange control regime in place which regulates the flow of funds into and out of the country, with the outflow of funds being more strictly regulated. The rules of the exchange control regime are also applicable to foreign investments into renewable energy projects. Some of the key principles applicable to foreign investments are the following:

- Where an investment is made into a South African renewable energy project in the form of a loan, there are limits on the interest rate that can be imposed.
- Where a foreign investor invests in a South African project by acquiring shares in a South African company, it must introduce foreign currency from abroad to purchase the shares, and to the extent that it wishes to obtain funding from a local bank to finance the share purchase, certain limitations apply. The share certificates for such shares must be endorsed non-resident for exchange control purposes. Without such endorsement, the foreign investor will not be entitled to repatriate any distributions or dividends declared by the South African company, or any sale proceeds from the disposal by the non-resident of its shares in the South African company.
- Where a foreign investor receives dividends from the shares held in a South African company, it may only receive and repatriate dividends commensurate with its shareholding. Where the foreign investor disposes of the shares held in a South African company, it may only receive and repatriate the amount that is commensurate with the value of the shareholding sold.

It should be noted that South Africa's current exchange control regime is currently undergoing a major overhaul and is expected to ultimately be replaced by a capital risk flow management framework.

Regarding the repatriation of dividends, South Africa has a dividends-withholding tax of 20%; however, where South Africa has concluded a double tax treaty with the country in which the foreign investor resides, the withholding tax rate may be reduced, depending on the terms of the treaty.

6.3 Are there any employment limitations or requirements which may impact on foreign investment in renewable energy projects?

Renewable energy projects that wish to employ foreign nationals require a work visa for the employee, except in a few limited circumstances. The three main types of visa are the general work visa, the critical skills visa and the intra-company work visa.

It should be noted that certain designated employers (with at least 50 employees or turnover above a certain threshold) have obligations relating to affirmative action under the Employment Equity Act 55 of 1998, in particular with regard to redressing the underrepresentation of black people, women and people with disabilities.

Participants under the REIPPP Programme are required to meet certain minimum job creation thresholds for categories of persons including South African citizens, black people, black women, black youth and people with disabilities.

6.4 Are there any limitations or requirements related to equipment and materials which may impact on foreign investment in renewable energy projects?

The Department of Trade, Industry and Competition (**DTIC**) has implemented a local content policy since 2011 through the Preferential Procurement Policy Framework Act 5 of 2000. The DTIC is able to designate industries, sectors and sub-sectors for local production at a specified level of local content. Local content thresholds have been set for the solar PV industry.

Participants under the REIPPP Programme are required to meet certain minimum thresholds regarding their local content spend (e.g. in round 5 of REIPP, the required local content spend during the construction and operation periods for solar PV is 45%).

7 Competition and Antitrust

7.1 Which governmental authority or regulator is responsible for the regulation of competition and antitrust in the renewable energy sector?

The Competition Commission (**Commission**) and Competition Tribunal (**Tribunal**), as established under the Competition Act 89 of 1998 (**Competition Act**), are the responsible regulatory entities.

7.2 What power or authority does the relevant governmental authority or regulator have to prohibit or take action in relation to anti-competitive practices?

The Commission is empowered to investigate, control and evaluate restrictive business practices, abuse of dominant positions and mergers. The Tribunal is the adjudicative body established in terms of the Competition Act and is responsible for the approval of large mergers, the adjudication of conduct prohibited in terms of the Competition Act, as well as the imposition of penalties.

If a merger is implemented in contravention of the Competition Act, the Tribunal may: (i) impose a penalty of up to 10% of each firm's annual turnover; (ii) order divestiture; or (iii) declare any provision of a merger agreement void. In the case of prohibited practices, the Tribunal may make an appropriate order as delineated in the Competition Act, including, *inter alia*, interdicting the prohibited practice, making various declaratory orders to remedy such practice, or imposing administrative penalties.

7.3 What are the key criteria applied by the relevant governmental authority or regulator to determine whether a practice is anti-competitive?

The Competition Act prohibits agreements or practices between competitors that substantially prevent or lessen competition in a market, unless a party to the agreement or practice can prove that technological, efficiency or other pro-competitive gains outweigh the anti-competitive effect.

In evaluating a merger, the Commission considers whether the merger is likely to substantially prevent or lessen competition, as well as the impact which the merger will have on public interest. Following an investigation by the Commission (or a Tribunal hearing for large mergers), the merger may be approved without conditions, subject to conditions, or prohibited.

8 Dispute Resolution

8.1 Provide a short summary of the dispute resolution framework (statutory or contractual) that typically applies in the renewable energy sector, including procedures applying in the context of disputes between any applicable government authority/regulator and the private sector.

The PPAs under the REIPPP Programme provide for certain limited matters to be dealt with on an expedited basis by way of an expert determination, and all other disputes are to be referred to the High Court of South Africa, which shall have exclusive jurisdiction.

In embedded generation projects, it is typical for the parties to agree to an expert determination for certain technical matters and arbitration for all other disputes. The favoured forum is the Arbitration Foundation of Southern Africa (**AFSA**), using AFSA rules.

Where there is a contravention of a licensed activity, NERSA may sit as a tribunal to decide on the allegation.

8.2 Are alternative dispute resolution or tiered dispute resolution clauses common in the renewable energy sector?

This is not the regime under the REIPPP Programme; however, it is common in captive power projects between two private entities.

8.3 What interim or emergency relief can the courts grant?

The granting of urgent or interim relief, such as an interdict, falls within the discretion of the presiding judge. An applicant must demonstrate urgency by demonstrating that, if it were to wait and bring a matter in the normal course, it will not be afforded substantial redress at a hearing in due course.

8.4 Is your jurisdiction a party to and has it ratified the New York Convention on the Recognition and Enforcement of Foreign Arbitral Awards and/or the Convention on the Settlement of Investment Disputes between States and Nationals of Other States and/or any significant regional treaty for the recognition and enforcement of judgments and/or arbitral awards?

South Africa is a signatory to the New York Convention and has codified the UNCITRAL Model Law by way of the International Arbitration Act 15 of 2017.

8.5 Are there any specific difficulties (whether as a matter of law or practice) in litigating, or seeking to enforce judgments or awards, against government authorities or the state?

There are no legal preclusions in litigating or seeking to enforce judgments or awards against the government. Depending on the government entity involved and the applicable legislation, there may be procedural requirements to follow.

8.6 Are there examples where foreign investors in the renewable energy sector have successfully obtained domestic judgments or arbitral awards seated in your jurisdiction against government authorities or the state?

There are no reports of successful court judgments in favour of foreign investors against government authorities or the state. This may be due to the absent or nominal litigation against the government by the sellers who have concluded PPAs in the REIPPP Programme. Arbitration is typically undertaken under confidentiality restrictions and arbitral awards are not publicly available.

9 Updates and Recent Developments

9.1 Please provide a summary of any recent cases, new legislation and regulations, policy announcements, trends and developments in renewables in your jurisdiction.

Following NERSA's concurrence in September 2020, the Minister issued a section 34 determination for the procurement of a further 11,813 MW of renewable energy between 2022 and 2027, of which 6,800 MW is allocated to wind and solar PV, and 513 MW to capacity generated from storage. This enabled the DMRE to initiate Bid Window 5 of the REIPPP Programme for which the request for proposals was issued on 12 April 2021. The current bid submission date is 16 August 2021. The launch of the REIPPP Programme Bid Window 6 is anticipated for August/September 2021.

Preferred bidders for the RMIPPP Programme were announced on 18 March 2021, with the Programme expected to be operational by the second half of 2022. The selected projects comprised a combination of a range of technologies, including solar PV, wind, liquified natural gas and battery storage. On 16 October 2020, the Minister gazetted amendments to the New Gen Regulations, permitting a municipality to, subject to prescribed requirements, apply to the Minister to procure or buy new generation capacity in accordance with its municipal integrated development plan.

The 2021 draft Taxation Laws Amendment Bill published on 28 July 2021 for public comment proposed various changes to the CTA, including clarification regarding renewable energy premium beneficiaries and the carbon budget allowance. The first declarations and payments under the CTA were due on 29 July 2021 and, hence, the impact of the CTA on behavioural changes including a possible move to more renewable energy, will be interesting to monitor.

Amendments to Schedule 2 of the ERA to increase the electricity generation licence exemption threshold to 100 MW were gazetted on 12 August 2021. On the same day, the first iteration (focused on critical network infrastructure sectors, with the second iteration to include distributed infrastructure and related municipal services) of the draft 2050 NIP was published for comment. In respect of the energy sector, the draft 2050 NIP recognises that energy supply will be increasingly dominated by renewable resources, especially in the context of the world's aim to achieve net zero greenhouse gas emissions by 2050.

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1 Overview of the Renewable Energy Sector

1.1 What is the basis of renewable energy policy and regulation in your jurisdiction and is there a statutory definition of 'renewable energy', 'clean energy' or equivalent terminology?

There are many different actors that participate together in the Swedish energy system. Swedish energy policy aims to unite ecological sustainability with competitiveness and security of supply. The energy policy is, to a great extent, based on the legislation established within the EU.

Through Directive 2018/2001/EC of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources, renewable energy is: "renewable non-fossil sources, namely wind, solar (solar thermal and solar photovoltaic) and geothermal energy, ambient energy, tide, wave and other ocean energy, hydropower, biomass, landfill gas, sewage treatment plant gas and biogas."

The Swedish Law on Electricity Certificates states that renewable electricity is electricity produced from renewable energy sources or peat, and that renewable energy is: biofuels; geothermal energy; solar energy; hydropower; wind power; and wave energy.

1.2 Describe the main participants in the renewable energy sector and the roles which they each perform.

The first main group of actors is the public sector, mainly the parliament, government, several authorities, regions, county councils and municipalities. Another main group includes different types of private actors such as energy companies, fuel companies, vehicle manufacturers, energy-intensive industries, district heating companies, construction companies, electricity network companies and environmental technology companies which also have an impact in the renewable energy sector.

The distribution of roles and responsibilities between different actors in the energy system is not obvious and changes over time. Government control has decreased over time and more parties are involved in the decisions. It can be seen as a development where the regions, municipalities and private companies have gained greater influence.

The **Ministry of Infrastructure** is the key governmental institution responsible for energy. It is supported by **the Swedish Energy Agency** (*Energimyndigheten*) which creates conditions for efficient and sustainable energy use and a cost-effective Swedish energy supply. Furthermore, **the Energy Market Inspectorate** (*Energimarknadsinspektionen*), an agency, conducts supervision of the energy market for electricity, natural gas and district heating. The inspectorate also grants permits for electricity transmission and distribution.

There are both governmental and private participants contributing to the renewable energy sector. For example, **Vattenfall AB** is a dominant state-owned company that produces, distributes and sells electricity, heat and gas.

1.3 Describe the government's role in the ownership and development of renewable energy and any policy commitments towards renewable energy, including applicable renewable energy targets.

The government has an important role in both the ownership and development of renewable energy. The Swedish electricity market functions in such a way that the owner of the electricity grid also has a monopoly on transferring the electricity on the grid. The transmission grid in Sweden is owned by the state and managed by Svenska Kraftnät. The regional networks are largely owned by three major players: Vattenfall; Eon; and Ellevio. The local networks are owned by 155 different network owners, which vary in size. As mentioned under question 1.2, the state own Vattenfall AB, which is a big actor in the energy industry.

Through the relatively new Swedish "Climate Law", the government is required to adopt policies and commitments towards renewable energy. The Swedish energy policy, set out by the government, aims to secure access to electricity and other forms of energy on competitive terms, both in the short and long term. The energy policy shall create the conditions for efficient and sustainable energy use. Furthermore, a cost-effective Swedish energy supply with a low negative impact on health, the environment and the climate is strived for. The policy shall also facilitate the transition to an ecologically sustainable society.

The Swedish energy targets for 2020 were that renewable energy should amount to 50% overall and 10% in the transport area. It has been established that Sweden achieved its milestone target by a wide margin for 2020, despite there being no official emission statistics for 2020 yet.

The target for 2030 is to have a 50% more effective use of energy than in 2005. Furthermore, the energy production target for 2040 is to be 100% renewable. However, this does not involve ceasing the production/use of nuclear power.

2 Renewable Energy Market

2.1 Describe the market for renewable energy in your jurisdiction. What are the main types of renewable energy deployed and what are the trends in terms of technology preference and size of facility?

Renewable energy sources such as hydropower, wind, solar and biomass are used the most in Sweden. The electricity that is produced in Sweden comes primarily from hydropower but also from nuclear power. However, the last 10 years have seen a high increase of wind power. During 2020, the electricity production was 159 TWh, comprising 30% nuclear power, 45% hydropower and 17% wind power. The remaining 8% was combustion-based production. Solar power is also starting to increase, and between year 2019 and 2020, the number of solar cells increased by 50%.

Since hydropower is the most-used renewable energy source in Sweden, there is a centralised energy production where the energy is transported from the producer (in the North) to the consumers (in the South) and where the production of energy has been possible to control and adjust. However, due to the development in wind power and solar energy, the energy system has become more decentralised and variable. This demands more flexibility due to the need for a balance in the electrical system between generation and consumption. In addition, there must be a development of the electricity grid, since consumers can also produce electricity which flows in both directions.

2.2 What role does the energy transition have in the level of commitment to, and investment in, renewables? What are the main drivers for change?

Sweden's target to reach a domestic goal of 100% renewable production of electricity by 2040 is a driver for change. A total renewable electrical system is a step forward for a sustainable future. However, this also increases the need of renewable energy sources such as biogas, wind and solar, which must be balanced with spatial planning, more environmental permits and expertise. The commitment to transit to a fully renewable production requires investments in research, economic instruments, dissemination of knowledge and other promotion measures.

2.3 What role, if any, has civil society played in the promotion of renewable energy?

Civil society is playing a valuable part in the promotion of renewable energy, partly by promoting awareness through demonstrations, and partly by creating demand for renewable energy. An example in raising awareness through demonstrations is Fridays for Future, which maintains pressure on the government regarding environmental questions and the importance of renewable energy.

There is also a demand for renewable energy from consumers. One poll suggests that 33% of consumers believe that renewable energy is the most important factor when choosing a distributor of energy for one's household (price remains the most important amongst 56%).

2.4 What is the legal and regulatory framework for the generation, transmission and distribution of renewable energy?

Generation, transmission and distribution of electricity is, to a great extent, regulated in **the Electricity Act** (*Ellagen*). Furthermore, there are additional laws, regulations and decrees from agencies that specify certain provisions in the Electricity Act. These are, in most cases, not specific to renewable energy. Other sources of energy are regulated through a wide range of acts, such as a law on natural gas and a law on district heating.

In parallel, **the Environmental Code** covers most activities that relate to the construction and operation of energy-facilities. The Environmental Code is the general code regarding environmental protection and sets out requirements for permits, some prohibitions and several conditions for activities. The code is often, but not always, general and more specific provisions can be found in the ordinances under the code. The purpose of the Environmental Code is to promote a sustainable development and it concerns all types of measures that may be relevant for achieving that purpose. In the second chapter of the Environmental Code, it is stated that everyone that conducts a business shall primarily use renewable energy.

2.5 What are the main challenges that limit investment in, and development of, renewable energy projects?

The vision that Sweden by 2040 will have a sustainable and resource-efficient energy supply without any greenhouse gas emissions suggests a continued strong focus on a shift towards an electrical system with a low environmental and low climate impact. Depending on the type of energy source, the actors which manage the energy system are required to consider different factors regarding reducing emissions. In addition, the construction of energy systems causes environmental damage, which must be considered.

There are often conflicts between the interest in expanding the possibilities for renewable energy in relation to health and the environment in other aspects. For instance, interest as to preserving the cultural landscape, protecting the minority population and the forests. These interests will be weighed and balanced by the authorities and courts – in particular, within the assessments of applications for permits. It is common that these other interests are deemed more significant, resulting in permits for the construction of renewables being denied. In addition, permits can be appealed by individuals, non-governmental organisations, authorities and others. This causes lengthy legal procedures. Conclusively, rules that have the ambition to protect some aspects of the environment may still hinder the development of renewable energy.

While the ambition is to expand facilities with renewable energy, there are other factors that prevent the possibility of obtaining a permit. For example, a lack of knowledge and difficulties in assessing environmental impacts. The system to achieve permits is said to be unnecessarily administrative and financially burdensome for the individual in relation to the desired environmental benefits. Hydropower and the extraction of biomass for biofuels are particularly affected by these knowledge gaps.

2.6 How are large utility-scale renewable power projects typically tendered?

There are laws and regulations regarding the public procurement of renewable power. In general, all significant investments made by public bodies will have to be openly tendered.

In addition, there are several obligations and aims to procure in a way that promotes sustainability, some of which are the following. The EU has, previously through the Directive on energy efficiency (2021/27/EU), created a framework for EU

Member States in order to promote energy efficiency and renewable power. According to the Directive (Article 6) and the Swedish regulation on authorities' purchases of energy-efficient goods, services and buildings (2014:480), state authorities must procure goods, services and buildings with the best available environmental performance.

Furthermore, the Swedish Ordinance 2009:907 on environmental management in government agencies states that government agencies must adapt their procurements to the environment as far as possible. The authorities must annually report the proportion of procurements and calls where they set environmental requirements and the economic value of these procurements. The procurements can be both public and private depending on who the parties are.

2.7 To what extent is your jurisdiction's energy demand met through domestic renewable power generation?

The share of renewable energy in final energy use has increased sharply in Sweden. Sweden uses its own renewable energy sources such as water, wind, solar and biomass. However, Sweden also imports energy such as nuclear fuel, biofuels and fossil fuels such as oil and natural gas.

The total amount of renewable energy (according to the definition of the Renewables Directive) in Sweden was 225 TWh in 2019, which represented 56% of the total energy use. Over the past 10 years, the proportion has increased by nine percentage points. The increase is primarily due to increased use of biofuels in the transport sector and continued expansion of wind power. At the same time, total energy use decreased slightly, which contributes to the increase in the share of renewables. The largest contributions to the high proportion of renewable energy come from biofuels and hydropower.

3 Sale of Renewable Energy and Financial Incentives

3.1 What is the legal and regulatory framework for the sale of utility-scale renewable power?

The Electricity Act is the central legislation on how the electricity networks are to function and how electricity is to be transmitted and distributed – on both a practical and commercial level. To be able to build and use electrical power lines, there is a necessity to have a certain permit (*koncession*). The possibility to receive a permit is regulated in the Electricity Act (1997:857), the Electricity Ordinance (2013:208) and the Environmental Code. The holder of a permit for an area or a certain line has, in principle, an exclusive right to build and operate power lines in that area.

Revenues from electricity network operations are regulated through revenue limits decided by the Energy Market Inspectorate. According to the Electricity Act, electricity network charges must be reasonable, objective and non-discriminatory.

3.2 Are there financial or regulatory incentives available to promote investment in/sale of utility-scale renewable power?

The Environmental Code states that everyone that conducts a business shall primarily use renewable energy, which is a rule of consideration and a regulatory incentive that acts as a strong instrument to promote investment in renewable power.

Since 2003, Sweden has had an electricity certificate system promoting renewable energy, which means that producers of renewable electricity get one electricity certificate by the state for every MWh of electricity produced. Electricity trading companies have an obligation to procure a certain amount of electricity certificates in relation to their sales and use of electricity. Only renewable energy sources such as wind power, certain forms of hydropower, certain biofuels, solar energy, geothermal energy, wave energy and peat in combined heat power plants can receive electricity certificates. The certificates are traded at market price.

3.3 What are the main sources of financing for the development of utility-scale renewable power projects?

The development of utility-scale renewable power projects is financed by different parties. For example, the Swedish Energy Agency supports research and development for new knowledge about the supply, conversion, distribution and use of energy. Furthermore, the Swedish Energy Agency supports the start-up of businesses in the fields of environment and energy techniques to the market, until private actors enter with financing and development. Moreover, the Swedish Energy Agency has a programme that gives support with regard to energy effectiveness to big industrial companies.

However, there are many private actors financing and contributing to the development of renewable power projects and they play an important role. The main sources of financing are through private funds and capital from different actors and banks. In addition, the Swedish pension funds, which are major actors on the capital markets, have a far-reaching obligation to invest in sustainable projects and companies.

3.4 What is the legal and regulatory framework applicable to distributed/C&I renewable energy?

The legal and regulatory framework to distributed/C&I renewable energy is, in principle, the same as utility-scale renewable power (see question 3.1).

3.5 Are there financial or regulatory incentives available to promote investment in distributed/C&I renewable energy facilities?

In principle, the incentives that are mentioned in question 3.2 are the same for promoting investment in distributed/C&I renewable energy facilities. However, there are projects regarding energy effectiveness that primarily support small businesses that are covered by environmental supervision to develop their energy usage; by creating awareness of the benefits of renewable energy and receiving guidance from the supervisory authority, the companies can develop their energy usage. In addition, the EU supports small and medium-sized companies insofar as they can seek economical support for the purpose of mapping their energy consumption and for the purpose of finding ways to make their use more effective.

Regarding solar energy, different kinds of support can be applied for. Sweden needs more solar energy and, therefore, encourages people to invest in that with both tax reduction and other forms of support from the government.

As mentioned earlier, the electricity certificates have a financial effect for producers of renewable electricity. For every MWh of renewable electricity produced, the producer receives an electricity certificate. The electricity certificates are sold on an open market, and thus provide extra income for renewable electricity production, compared with the usual electricity sales.

3.6 What are the main sources of financing for the development of distributed/C&I renewable energy facilities?

The main sources of financing are the same as for utility facilities (see question 3.3).

3.7 What is the legal and regulatory framework that applies for clean energy certificates/environmental attributes from renewable energy projects?

There are different certificates that can be applied for. Firstly, there is the electricity certificate which is mentioned above (see questions 3.2 and 3.5) which is a form of economic financial support for manufacturers of renewable energy.

Secondly, there is a guarantee of origin certificate that guarantees the origin of the electricity. The producers and suppliers of energy are affected by the guarantee. The guarantees can be sold on an open market.

3.8 Are there financial or regulatory incentives or mechanisms in place to promote the purchase of renewable energy by the private sector?

There are various incentives and mechanisms to promote the purchase of renewable energy in this area. For example, there is a system known as "*bonus-malus*", which reduces tax on cars if they are environmentally friendly; at the same time, petrol- and diesel-powered cars are affected negatively by a tax increase.

Regarding electric buses, there is a premium that is given by the government to bodies running public transport which buy electric buses. The support covers part of the additional cost that the purchase of an electric bus entails. There are also premiums for environmentally friendly trucks and electrical work machines.

A tax reduction for the installation and storage of own-produced electricity from solar cells also constitutes a financial incentive to encourage people to invest in renewable energy for private use. The same principle applies to the installation of charging points for electric cars.

4 Consents and Permits

4.1 What are the primary consents and permits required to construct, commission and operate utility-scale renewable energy facilities?

The environmental permit system is at the very core of Swedish environmental protection. Most conceivable renewable energy facilities will be subject to requirements of a permit. What will vary more often is the authority which will grant such permit and the requirements for obtaining such permit.

The Environmental Code differentiates "hazardous activities" and "water operations", both of which, in many cases, require a permit. It is important to note that a permit is not only needed for the construction of a facility; it is also required for its operation.

Depending on the activity or operation, a permit will be applied for from the competent authorities, courts or the government. In most cases, there is a requirement for the applicant to conduct an Environmental Impact Assessment in order to obtain a permit. This procedure involves many actors and must also involve the public.

An obtained permit sets out the scope of the activity and includes the conditions for the activity. On the other hand, the permit protects the operator from claims or actions due to disturbances caused by the activity, provided the activity is conducted in compliance with the permit's conditions.

On-shore wind power with the tower's total height exceeding 120m (to the tips of the upward-extended blades) requires a permit for "hazardous activities".

Off-shore wind power requires a permit for "water operations" and a permit for "hazardous activities". In addition, the applicant for the permit must also have a right of disposition of the water. Research, constructions and the lay out of cables on the continental shelf will also require a separate permit which is granted, depending on the extent, by Geological Survey of Sweden or the government.

Hydropower will, in most cases, require a permit for "water operations". It is also common that a separate permit for "hazardous activities" is required. At the moment, the extension of hydropower is relatively low. One major reason is that most rivers that could be useful are protected as a "national interest" under the Environmental Code.

The construction and operation of aerothermal, geothermal and hydrothermal energy facilities will, in most cases, require a permit for "hazardous activities". Smaller facilities will not require a permit but will be subject to a duty of report to a relevant authority.

In addition to permits for "hazardous activities", building permits can be required for the construction of renewable energy facilities. However, windmills that have obtained a permit for "hazardous activity" do not require a building permit.

Solar parks generally do not need a building permit if they are built outside of a detailed planning area. However, the transformer station for the solar cells requires a building permit. A report to the county administrative board also needs to be made. Even if the land is not classified as a protected area, there may be a requirement to report the installation to the authorities.

4.2 What are the primary consents and permits required to construct, commission and operate distributed/C&I renewable energy facilities?

Distributed energy facilities will, in most cases, be considered "water operations" and/or "hazardous activities" – thus subject to what has been described above in question 4.1. However, small facilities will, in some cases, not require a permit, but will instead be subject to a duty to notify the relevant authority. What is considered a small facility depends on factors such as the amount of energy used in MW or the size and scope of the facility. One single windmill not taller than 50 metres will be exempted from requiring a permit for "hazardous activities".

Most conceivable C&I renewable energy facilities will be considered "hazardous activities" and thus will be subject to what has been described above in question 4.1.

Building permits may also be required for a variety of smaller, distributed facilities. For example, the installation of solar cells on buildings may require a building permit. A permit is not required to use and operate solar energy.

4.3 What are the requirements for renewable energy facilities to be connected to and access the transmission network(s)?

The construction and operation of transmission networks in Sweden is regulated through permits. A permit is thus required for the construction/lay out of transmission networks. Such permit is applied for to the Energy Market Inspectorate.

An energy facility has the right to be connected to a transmission network on fair conditions. The energy facility will in that case be obliged to pay a connection fee and a transmission fee. The connection fee and conditions for connection can be subject to review by the Energy Market Inspectorate.

4.4 What are the requirements for renewable energy facilities to be connected to and access the distribution network(s)?

As stated above, an energy facility has the right to be connected to a transmission network on fair conditions. The prerequisite for this is that the energy facility fulfils the technical requirements stipulated by the network operator, those being not unreasonable.

4.5 Are microgrids able to operate? If so, what is the legislative basis and are there any financial or regulatory incentives available to promote investment in microgrids?

As a general rule, a permit is required for the construction/lay out of microgrids serving to the transmission of electricity for third parties. Such a permit is applied for to the Energy Market Inspectorate.

However, there are exceptions that apply for the lay out of certain networks for the production of energy. The relevant provision is found in section 22a of the Ordinance (2007:215) on exemptions from the requirement for a grid concession in accordance with the Electricity Act (1997:857). The provision states that an internal grid that connects two or more electrical installations for production, which constitutes a functional unit, may be built and used without a permit concession. This provision has mainly been applied for windfarms; however, it is in principle applicable for solar energy, minor hydropower facilities and other facilities for renewable energy.

4.6 Are there health, safety and environment laws/regulations which should be considered in relation to specific types of renewable energy or which may limit the deployment of specific types of renewable energy?

There is no specific legislation for renewables (except for taxes and some incentive systems). The activities will be covered by the legislation that applies for the different kind of facilities and distribution. There is no limit on how much renewable energy may be produced or sold on the market. In theory, 100% of energy distributed could be renewable energy.

Specific types of activities and operations require different permits, and will be subject to different conditions.

5 Storage

5.1 What is the legal and regulatory framework which applies to energy storage and specifically the storage of renewable energy?

At this point, there is no regulation that specifically regulates energy storage in general. However, the storage of heat in soil, a water area or in groundwater for an added amount of energy of more than 3,000 MWh requires notification to the competent authority. Furthermore, there is regulation regarding the possibility of receiving state subsidy when storing own-produced energy.

5.2 Are there any financial or regulatory incentives available to promote the storage of renewable energy?

The government decided during 2016 on an ordinance for subsidies for the storage of self-produced electricity. It will make it easier for private individuals to take advantage of their photovoltaic systems. In 2021, the government decided that this incentive for storage shall be replaced by tax deductions for green technology. Therefore, private individuals that invest in systems for the storage of own-produced electricity have the opportunity to apply for a 50% reduction of the cost for work and material, with a maximum amount of 50,000 SEK.

6 Foreign Investment and International Obligations

6.1 Are there any special requirements or limitations on foreign investors investing in renewable energy projects?

There are no special requirements or limitations on foreign investment in renewable energy projects. Investments from non-EU investors may, however, be audited by the Inspectorate of Strategic Products. In its audit, the inspectorate has the right to require certain documents from the investor. The inspectorate may also be obligated to provide information about investors to other EU Member States upon request. However, there is no mandate for the inspectorate, at this moment, to block a foreign investment.

6.2 Are there any currency exchange restrictions or restrictions on the transfer of funds derived from investment in renewable energy projects?

There are no such special restrictions for investments in renewable energy.

6.3 Are there any employment limitations or requirements which may impact on foreign investment in renewable energy projects?

There are no limitations that specifically apply to foreign investments. However, work-permits and visas may be required for non-EU citizens. Further, specific rules regarding taxation must be observed.

6.4 Are there any limitations or requirements related to equipment and materials which may impact on foreign investment in renewable energy projects?

There are no specific limitations or requirements with impact. Equipment and materials must comply with national law and EU law – which apply indiscriminately for national companies and citizens, EU citizens and EU companies as well as foreign individuals or actors.

7 Competition and Antitrust

7.1 Which governmental authority or regulator is responsible for the regulation of competition and antitrust in the renewable energy sector?

The Swedish Competition Authority is the responsible authority.

7.2 What power or authority does the relevant governmental authority or regulator have to prohibit or take action in relation to anti-competitive practices?

The Swedish Competition Authority has the mandate to scrutinise anti-competitive practices, with the power to block mergers and acquisitions and to impose prohibitions, fines and penalties.

7.3 What are the key criteria applied by the relevant governmental authority or regulator to determine whether a practice is anti-competitive?

The Swedish Competition Act and the EU's competition rules contain two core prohibitions – one prohibiting anti-competitive cooperation between undertakings and one prohibiting undertakings in a dominant position from abusing their market power.

Chapter 2, Section 1 of the Swedish Competition Act and Art. 101 of the Treaty on the Functioning of the European Union (TFEU) prohibit anti-competitive cooperation between undertakings that significantly hinders or distorts competition. The rules prohibit various types of market distorting cooperation, such as cartels, collusion, price agreements, information exchange or exclusivity agreements. For cooperation to be illegal, competition must have been significantly restricted or distorted.

Chapter 2, Section 7 of the Swedish Competition Act and Art. 102 of the TFEU prohibit undertakings in a dominant position from abusing their market power. Whether an undertaking has a dominant position is assessed by several factors, the market share being one such factor. A market share above 40% may often be considered a dominant position, but several circumstances are assessed. However, dominance is not illegal in itself. What is prohibited is the abuse of one's market power; for example, by imposing unfair prices or unfair trading conditions or applying dissimilar conditions to equivalent transactions with other trading parties.

8 Dispute Resolution

8.1 Provide a short summary of the dispute resolution framework (statutory or contractual) that typically applies in the renewable energy sector, including procedures applying in the context of disputes between any applicable government authority/regulator and the private sector.

Permits for "hazardous activities" or "water operations" are applied for to relevant authorities or to a competent public court, depending on the particular activity. Claims regarding environmental liability will also be tried by those authorities and/or courts.

Disputes regarding the terms for the access to a transmission or distribution network can be resolved by a complaint to the Energy Market Inspectorate. Decisions by the inspectorate may be appealed to the courts.

Civil disputes between private actors can be solved in the public courts or in arbitration. This is also the case when a public body has acted as a "private actor", for instance if real estate property has been sold by a public body in a civil contract and a dispute arises involving the sale of the property.

Disputes between consumers and companies acting in the energy market can be resolved by the National Board for Consumer Disputes. The decision that the board takes is, however, a "recommendation" and it cannot be appealed. Any of the parties may resort to the public courts after a decision from the board.

8.2 Are alternative dispute resolution or tiered dispute resolution clauses common in the renewable energy sector?

The most common alternative dispute resolution is through arbitration clauses. Arbitration is the normal way for dispute resolution. Mediation can be used but is not normally the sole means of resolving a dispute. When the public sector is a party to contracts, disputes are usually resolved in public courts.

8.3 What interim or emergency relief can the courts grant?

The Swedish Civil and Administrative Courts (depending on the origin of dispute) can grant interim reliefs, injunctions and suspensions. The possibility and requirements for obtaining an interim decision will vary depending on the proceedings and objective of the interim measure. In civil disputes, a security for possible damage sustained by the other party will be required by the party requesting the interim decision.

8.4 Is your jurisdiction a party to and has it ratified the New York Convention on the Recognition and Enforcement of Foreign Arbitral Awards and/or the Convention on the Settlement of Investment Disputes between States and Nationals of Other States and/or any significant regional treaty for the recognition and enforcement of judgments and/or arbitral awards?

Yes. In addition, Sweden is a party to relevant European conventions and regulations regarding enforcement and recognition of judgments and awards.

8.5 Are there any specific difficulties (whether as a matter of law or practice) in litigating, or seeking to enforce judgments or awards, against government authorities or the state?

There are no particular difficulties in litigating or seeking to enforce judgments against the state and other authorities in Sweden.

8.6 Are there examples where foreign investors in the renewable energy sector have successfully obtained domestic judgments or arbitral awards seated in your jurisdiction against government authorities or the state?

We are not aware of any such case.

9 Updates and Recent Developments

9.1 Please provide a summary of any recent cases, new legislation and regulations, policy announcements, trends and developments in renewables in your jurisdiction.

Recently, new legislation has been established with the purpose of promoting energy production from renewable sources. The law gives the government the opportunity to regulate on deadlines for authorities' handling of cases and the provision of information. The legislation is in line with Article 16 in Directive (2018/2001) on the promotion of the use of energy from renewable sources.

Furthermore, new regulation regarding extended exemption from energy tax for self-produced electricity has been established. The regulation falls in line with the government's ambition to make it easier and more profitable to invest in renewable energy for private use.

Since 1 April 2021, new diesel- and petrol-powered cars will be affected by an increased tax for the first three years when the vehicle is put on the road.

The Swedish Energy Agency has assessed COVID-19 and considers that the pandemic has not affected energy supply to any great extent. The supply of energy has remained high on a national level, as well as on a global level. The pandemic has primarily had an economical effect on the energy industry; the ability to supply energy to customers has not been affected. However, the authority notes that it cannot be ruled out that the pandemic may adversely affect energy supply.

Rudolf Laurin has significant experience as an advisor in environmental and energy matters. He assists and acts as counsel with regard to all aspects of a project ranging from strategic considerations to commissioning. In particular, Rudolf has considerable industry expertise within all forms of power and heat production projects from biomass, waste, natural gas, liquefied natural gas, biogas and wind power, to power transmission, all forms of waste management, manufacturing and quarries. Rudolf is ranked in internationally renowned ranking guides.

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1 Overview of the Renewable Energy Sector

1.1 What is the basis of renewable energy policy and regulation in your jurisdiction and is there a statutory definition of 'renewable energy', 'clean energy' or equivalent terminology?

The United Arab Emirates (the "**UAE**") was established in 1971 as a federation of emirates. There are seven emirates, each with its own Ruler: Abu Dhabi; Ajman; Dubai; Fujairah; Ras Al Khaimah ("**RAK**") (which joined the federation in 1972); Sharjah; and Umm Al Quwain.

The UAE has both federal- and emirate-level laws and regulations that govern its renewable energy regime. It has developed policies as part of its strategy to diversify its economy away from oil and gas.

The UAE launched its Energy Strategy 2050 in 2017, the first unified energy strategy in the UAE based on supply and demand, which aims to deliver clean, secure, affordable energy and reduce greenhouse gases. In addition, strategies have been set at emirate level; for example, Dubai has an Energy Strategy 2050, which includes even more ambitious targets than the UAE Energy Strategy 2050.

The UAE has no statutory definition of "renewable energy", or an equivalent.

1.2 Describe the main participants in the renewable energy sector and the roles which they each perform.

The main governmental participants in the renewable energy sector in the UAE are typically the same entities which participate in the conventional electricity generation, transmission and distribution sectors.

The Federal Ministry of Energy and Infrastructure regulates the sector at a federal level. Electricity services are expressly reserved to the Federal Government in accordance with article 120 of the UAE Constitution. However, notwithstanding such exclusive jurisdiction, there are different authorities across the emirates in the UAE in the renewable energy sector which govern the process of generation, transmission and distribution of electricity. As the most significant emirates in terms of economic activities and development of renewables, this chapter will primarily focus on the regimes applicable in the Emirates of Abu Dhabi and Dubai.

At a federal level, the main participants in the renewable energy sector are the Ministry of Energy and Infrastructure and the Federal Electricity and Water Authority ("**FEWA**").

The Ministry of Energy and Infrastructure is responsible for establishing policies for, among other things, the electricity sector in the UAE and compliance with such policies. However, the Ministry of Energy and Infrastructure has limited influence in directing policy and implementing projects in the Emirates of Abu Dhabi and Dubai and primarily focuses on addressing the growing electricity demand in the Northern Emirates. The Ministry of Energy and Infrastructure works together with FEWA to implement the Federal Government's electricity policy in the Northern Emirates.

FEWA was established pursuant to Federal Decree No. 3 of 2004 (as amended) (the "**FEWA Law**"). FEWA is the entity responsible for the generation, transmission and distribution of water and electricity, including renewable energy, in the Northern Emirates. FEWA is authorised to establish private power generation plants in the Northern Emirates. A number of such projects have been developed. Under the FEWA Law, the General Authority has sole responsibility for providing electricity and water to citizens at prices achieving equality among them throughout the state.

Abu Dhabi

The main participants in the renewable energy sector in Abu Dhabi are the Abu Dhabi Department of Energy ("**Abu Dhabi DOE**"), the Emirates Water and Electricity Company ("**EWEC**") and Abu Dhabi Power Corporation ("**AD Power**"), as well as private sector participants.

Abu Dhabi DOE was established in 2018 pursuant to Law No. 11 of 2018 (the "**DOE Law**") to control and supervise participants in the energy sector. In the same year, Law No. 20 of 2018 (the "**EWEC Law**") established EWEC as the provider of water and electricity. Abu Dhabi's electricity was thus restructured in 2018 such that:

- the Abu Dhabi DOE is the single regulator of the electricity and water sector in Abu Dhabi (in place of Abu Dhabi Water and Electricity Authority ("**ADWEA**") and the Regulation and Supervision Bureau);
- Abu Dhabi Water and Electricity Company was replaced by EWEC; and
- the commercial participation of Abu Dhabi in the sector was transferred from ADWEA, a government authority, to AD Power.

The Abu Dhabi DOE is the entity responsible for granting generation and production licences; its role includes the organisation of the energy sector in all aspects through the development of policies, standards, regulations, decisions and executive and operational circulars, to control, supervise and license the energy sector. The "energy sector" is defined broadly under the DOE Law to include the generation, storage, transportation, distribution, supply, sale and purchase of electricity of all kinds (including clean, renewable and traditional).

EWEC was established to replace the Abu Dhabi Water and Electricity Company and has the power to enter into contracts to produce and distribute water and electricity in Abu Dhabi. Under the EWEC Law, EWEC is the sole provider of water and electricity within the geographical scope to be determined by Abu Dhabi's Executive Council and is responsible for ensuring the supply of water and electricity to meet demand, unless the "Side Sales System" is implemented (as to which, please see question 3.1 below). EWEC has an express obligation to adopt policies to diversify the sources of water and electricity production capacity to achieve economic, environmental and social sustainability, as well as encourage investment by, and partnership with, the private sector.

AD Power is a government corporation owned by Abu Dhabi Development Holding Company, a government-owned company mandated to owning, overseeing and operating development-related state-owned enterprises in a number of sectors, including utilities. AD Power was established, among other things, to invest in projects and establish subsidiaries.

Abu Dhabi has also established the Abu Dhabi Future Energy Company ("**Masdar**") to assist the UAE "in the global energy sector, while supporting the diversification of both its economy and energy sources for the benefit of future generations". Masdar set up Masdar City in 2009, which includes the first grid-connected renewable energy project in the UAE.

Dubai

The main participants in the renewable energy sector in Dubai are the Supreme Council of Energy (the "**Dubai SCE**"), the Regulatory and Supervisory Bureau (the "**Dubai RSB**") and Dubai Electricity and Water Authority ("**DEWA**"), as well as private sector participants.

The Dubai SCE was established in Dubai in 2009 pursuant to Dubai Law No. 19 of 2009 to, among other things, ensure effective planning for the energy sector in the Emirate of Dubai and to regulate rights and duties of energy service providers, including any public or private entity licensed to generate, transmit and distribute electricity to consumers. The mandate of the Dubai SCE includes ensuring compliance by energy service providers with the policies approved for the energy sector, amicable resolution of disputes that may arise between energy service providers, proposing the required level of government support for the energy sector to the Dubai Executive Council and ensuring an adequate and continuous supply of electricity at economical prices.

The Dubai RSB was established in 2010 pursuant to the Dubai Executive Council Resolution No. 2 of 2010 (the "**RSB Resolution**"). The Dubai RSB forms part of the Dubai SCE and is, among other things, responsible for regulating the electricity sector in the Emirate of Dubai, including setting out the economic, technical, environmental and safety standards, establishing quality standards, developing the tariff structure and supervising licensed entities to ensure that they are in compliance with the approved standards. The Dubai RSB considers and approves licensing requests in accordance with the approved standards and controls and supervises compliance of licensees in the Emirate of Dubai.

DEWA was established in 1992 pursuant to Dubai Law No. 1 of 1992 (as amended). DEWA is a public authority wholly owned by the Government of Dubai. It benefits from corporate status and is financially and administratively independent from the Government of Dubai. DEWA is responsible for setting up, managing, operating and maintaining power generation and water desalination stations, water reservoirs, and power and water transportation and distribution networks and systems in the Emirate of Dubai. DEWA is the entity in the Emirate of Dubai which is exclusively authorised, among other things, to establish, manage, operate, maintain and own electricity generation plants, power transmission and distribution networks in the Emirate of Dubai and to initiate and manage projects related to electricity generation in order to meet public needs and the development requirements of the Emirate of Dubai.

Northern Emirates

In the Emirate of Sharjah, Sharjah Electricity and Water Authority ("**SEWA**") was established in 1995 pursuant to Decree No. 1 of 1995 (as amended) and is responsible for the generation, transmission and distribution of electricity. SEWA is authorised to set electricity tariffs and connection fees, subject to the approval of the Ruler. SEWA's Vision 2025 includes the aim of transforming Sharjah into a "green giant" and ensuring carbon neutrality in the emirate, including prioritising the synergy between energy efficiency and renewable energy.

In the Northern Emirates of Fujairah, RAK and Umm Al Quwain, FEWA is responsible for the generation, transmission and distribution of electricity.

In addition, in RAK, RAK Electricity and Water Authority ("**RAK Authority**") was established in 2013, pursuant to RAK Decree No. 4 of 2013, to regulate the ownership, management, operation and maintenance of power generation plants, desalination plants, water fields and power transmission and distribution networks located in the Emirate of RAK. RAK Authority is responsible for ensuring that the electricity sold to consumers is sold on a fair and transparent basis. RAK Authority does not have detailed regulatory powers comparable with those held by the Abu Dhabi DOE or the Dubai RSB. While RAK Authority must ensure fair and transparent pricing for consumers and references various standards, there are no express provisions relating to the regulation of generation entities and ensuring competition in the sector.

1.3 Describe the government's role in the ownership and development of renewable energy and any policy commitments towards renewable energy, including applicable renewable energy targets.

Large, utility-scale renewable energy projects are procured through government-owned entities. The government, whether at a federal or emirate level, has a controlling interest in utility-scale projects. Private sector participation in utility-scale projects is in partnership with government or government-owned entities, typically holding an interest of 40% or 49%; however, this is currently limited to generation only.

The key deliverable of the UAE Energy Strategy 2050 is for the UAE to produce 50% of its energy targets from "clean sources". The strategy divides the 2050 targets as follows: 44% of energy from renewable sources; 6% from nuclear energy; 38% from natural gas; and 12% from clean fossil energy.

In addition, some of the emirates have set targets. For example, Dubai has set targets under its Energy Strategy 2050, which included 7% clean and renewable energy by 2020 (this target was exceeded with Dubai achieving 9% renewable energy in its energy mix at the end of 2020), increasing to 25% by 2030 and 75% by 2050. RAK, under its Energy Efficiency and Renewables Strategy 2040, has set targets of 30% energy savings, 20% water savings and 20% contribution from renewables by 2040, with a target of 44% of energy coming from renewable sources by 2050.

2 Renewable Energy Market

2.1 Describe the market for renewable energy in your jurisdiction. What are the main types of renewable energy deployed and what are the trends in terms of technology preference and size of facility?

The main type of renewable energy deployed in the UAE is solar energy. In particular, Dubai and Abu Dhabi have pursued ambitious solar energy projects as part of their energy diversification strategies, with large utility-scale solar photovoltaic ("**PV**") and concentrated solar power ("**CSP**") projects.

In Dubai, following an initial foray into solar with a 13MW solar PV plant which became operational in 2013, Phase II of Dubai's Mohammed bin Rashid Al Maktoum Solar Park was tendered as a 100MW solar PV power project in 2014; the project achieved a record-breaking tariff in the absence of subsidies and doubled its size to 200MW, becoming operational in 2017. Phase III followed in 2016, a massive 800MW of PV and another record-breaking tariff, the third and final stage of which was completed in 2020. This was followed in 2017 by Phase IV, a 700MW CSP project upsized to 950MW (100MW CSP tower, 600MW CSP parabolic trough and 250MW solar PV), which is the largest single-site CSP project in the world and, on its completion, will have the largest energy storage capacity in the world of 15 hours, allowing for energy availability around the clock. In 2020, DEWA successfully closed the 900MW Phase V, attracting (at that time) the lowest ever tariff bid for solar PV.

In Abu Dhabi, the Masdar City 10MW solar PV plant became operational in 2009, the first grid-connected renewable energy project in the UAE. Another Masdar project, the Shams 1 solar power project, a 100MW CSP plant, using parabolic trough technology, became operational in 2013. In 2019, the Sweihan solar PV power project, which was tendered in 2016, became operational, having previously achieved a record tariff, and the project was upsized from the initial 350MW to a colossal 1,177MW. In 2020, EWEC closed the 2GW solar PV project in Al Dhafra, which will become the world's largest single site solar PV plant.

A number of the emirates are considering solar energy, both solar PV and CSP, and are carrying out feasibility studies in relation to the feasibility of solar projects, such as floating solar PV, as well as considering other types of renewable energy, including wind energy and waste-to-energy, some of which are currently under procurement.

2.2 What role does the energy transition have in the level of commitment to, and investment in, renewables? What are the main drivers for change?

The UAE ranks as one of the top jurisdictions in the world when it comes to proven oil and natural gas reserves. The economy has been heavily dependent on its hydrocarbon resources, both as an energy resource and for revenue; however, this dependence has reduced significantly in recent years. Integral to the energy transition in the UAE, therefore, is the UAE's Energy Strategy 2050, which ultimately aims to set a foundation for the UAE in a post-oil world.

The UAE Energy Strategy 2050 aims to diversify the UAE energy sector towards a low-carbon mix, with the aim of producing 50% of its energy targets from "clean sources" by 2050, reducing energy demand and reducing emissions. Adding more clean energy into the mix also means a decreased reliance on natural gas, which currently accounts for more than two-thirds of the UAE's primary energy sources.

The energy transition strategy takes into account the international environmental commitments made by the UAE as well as economic planning for growth across different business sectors. The strategy focuses on three key areas: increasing the efficiency, diversification and security of energy; integrating new energy and transport solutions; and researching and developing innovative sustainable solutions. It aims to build on the knowledge and expertise of its experienced oil and gas sector and to complement, rather than compete with, the oil and gas sector.

2.3 What role, if any, has civil society played in the promotion of renewable energy?

There are various non-profit organisations which are proactive in liaising with both public and private sector stakeholders to facilitate the promotion of renewable energy in the UAE (and the region), including the Clean Energy Business Council, the Middle East Solar Industry Association, the EU-GCC Clean Energy Network and Emirates Environmental Group.

2.4 What is the legal and regulatory framework for the generation, transmission and distribution of renewable energy?

The UAE has introduced a number of laws at a federal and emirate level to regulate the generation, transmission and distribution of renewable energy. Details on the applicable laws are set out in question 1.2 above. Please see also question 3.4 below in relation to C&I/distributed solar energy/rooftop solar.

The transmission and distribution of electricity (including electricity generated from renewables) in the UAE remains state-owned and controlled. In Abu Dhabi, the Abu Dhabi Transmission and Despatch Company ("**Transco**") is responsible for operating Abu Dhabi's transmission networks and supplies electricity to two distribution companies (Abu Dhabi Distribution Company ("**ADDC**") and Al Ain Distribution Company ("**AADC**")), both wholly owned by the Abu Dhabi DOE.

In Dubai and Sharjah, respectively, DEWA and SEWA own the transmission and distribution networks. In the Northern Emirates, FEWA is responsible for the transmission and distribution of electricity; however, Transco is also involved in the development and operation of some of the transmission networks in the Northern Emirates.

Finally, the Emirates National Grid ("**ENG**") aims to interconnect the four main authorities in the UAE (Abu Dhabi DOE, DEWA, FEWA and SEWA) and therefore enable the sharing of power between the UAE's seven emirates and the formation of an integrated power system. Renewable energy sources are increasingly contributing to the ENG; however, nuclear power, which has been operational in the Emirate of Abu Dhabi since 2020, will play an increasingly important role in contributing to the ENG, with the Barakah nuclear plant supplying up to 25% of the UAE's electricity needs once all phases of the plant are operational.

2.5 What are the main challenges that limit investment in, and development of, renewable energy projects?

The UAE's ambitious targets are encouraging widespread investment in renewable energy projects in the UAE. However, C&I/rooftop solar investment is more limited due to the applicable regulations (please see question 3.4 below for further details), and foreign investment has been traditionally limited by both procurement requirements and the laws limiting foreign ownership (please see question 6.1 below regarding the latter and recent changes).

2.6 How are large utility-scale renewable power projects typically tendered?

Large utility-scale renewable power projects are typically tendered through a competitive bidding process run by the Abu Dhabi DOE, DEWA, SEWA or FEWA, depending on the emirate. The applicable municipality may also tender a project, such as a waste-to-energy project.

In Abu Dhabi, projects are tendered under Abu Dhabi Law No. 2 of 1998 (the "**Abu Dhabi IPP Law**"), which governs independent (water and) power projects ("**IPPs**") in the Emirate of Abu Dhabi. In Dubai, projects are tendered under Law No. 6 of 2011 (the "**Dubai IPP Law**"), which governs IPPs in the Emirate of Dubai. Contracts are awarded based on a competitive bidding process leading to long-term power purchase agreements, where EWEC and DEWA are the respective (single buyer) offtakers.

2.7 To what extent is your jurisdiction's energy demand met through domestic renewable power generation?

The majority of the UAE's energy demand is met through natural gas power generation and, as stated above, around a quarter of the UAE's generation needs will be met by nuclear power once all phases of the Barakah nuclear plant are operational. However, central to the UAE's Energy Strategy 2050, the UAE is aiming to increase the demand met through domestic renewable power generation and reduce the carbon footprint of its power generation processes.

3 Sale of Renewable Energy and Financial Incentives

3.1 What is the legal and regulatory framework for the sale of utility-scale renewable power?

The Abu Dhabi electricity sector is structured on a single buyer model. In accordance with the Abu Dhabi IPP Law, all utility-scale renewable power generation capacity is purchased by EWEC under a long-term power purchase agreement (except where the Side Sales System applies). The electricity is sold to ADDC and AADC via an annually adjusted bulk supply tariff for onward sale to consumers. ADDC and AADC pay Transco use of system tariffs for using the Transco transmission system to transport electricity to the distribution systems.

Under the EWEC Law, EWEC is the sole provider of water and electricity production capacity in the Emirate of Abu Dhabi, unless the Side Sales System applies. The Side Sales System is the sale of water or electricity, by the entities licensed to produce, to persons other than EWEC and is implemented upon the recommendation of the EWEC's shareholders, subject to the consent of the Abu Dhabi DOE. As of the date of writing, we are unaware of any sales being permitted under the Side Sales System in Abu Dhabi.

Dubai also operates a single buyer model. In accordance with the Dubai IPP Law, DEWA purchases all utility-scale renewable power generation capacity under a long-term power purchase agreement. DEWA is also responsible for transmission and distribution. In Dubai, projects falling under the Dubai IPP Law are exempt from the application of Dubai Law No. 22 of 2015 on public private partnerships.

Sharjah and the Northern Emirates also operate single buyer models, with SEWA and FEWA purchasing the utility-scale renewable generation Emirates, respectively.

3.2 Are there financial or regulatory incentives available to promote investment in/sale of utility-scale renewable power?

As part of the IPP structure, financial benefits are offered through take-or-pay protection and deemed payment mechanisms to cover private participants in the event of grid failure (subject to certain limitations and conditions) or political *force majeure*/change in law scenarios. There are currently no financial or regulatory incentives that are specific to utility-scale renewable power; however, Abu Dhabi recently launched a clean energy certificate scheme which, among other things, is aimed at attracting investment in the sector in Abu Dhabi.

In August 2021, Abu Dhabi DOE launched a Regulatory Policy for Clean Energy Certificates (the "**CEC Policy**"). The CEC Policy sets out the regulations and principles for implementing a clean energy certificates scheme in Abu Dhabi, providing an accreditation system based on the internationally recognised attribute tracking system for renewable energy certificates developed by the International Renewable Energy Certificate Standard Foundation (the "**I-REC Standard**"). The Abu Dhabi DOE is the issuer authorised to issue Clean Energy Certificates ("**CECs**") in Abu Dhabi; I-REC Standard is responsible for providing a single central registry platform, the I-REC Registry; and EWEC will act as the single registrant for the electricity injected into the grid from Abu Dhabi DOE-licensed generation entities and will ensure that all generation plants producing clean energy in Abu Dhabi are listed in the I-REC Registry. Participants may be businesses/consumers/end customers that obtain CECs through the I-REC Registry platform. The CECs will be issued by Abu Dhabi DOE in units of MW/h upon receiving a request from the EWEC as the single registrant and participants can then purchase the CECs and allocate beneficiaries. Once the "clean energy" is fed into the grid, the CECs can be traded as credits to claim the environmental and social benefits of low carbon energy consumption.

3.3 What are the main sources of financing for the development of utility-scale renewable power projects?

For utility-scale renewable power projects which are developed as IPPs, the applicable sponsors will secure long-term limited or non-recourse project financing from local or international commercial banks and, in some cases, overseas export credit agencies.

3.4 What is the legal and regulatory framework applicable to distributed/C&I renewable energy?

In Abu Dhabi, the Small-scale Solar PV Energy Netting Regulation was issued in 2017. The regulation sets out an energy netting (net-metering) system, whereby owners are credited for any surplus electricity produced by their solar PV panels beyond what is used in their own premises. If the solar PV panels produce more energy than required, the owner can automatically feed any excess into the grid and the owner will be credited to the value of what is fed into the grid.

The Small-scale Solar PV Energy Netting Regulation applies to distribution companies, owners, "Producers" (being any persons other than DEWA that generate solar energy and connect it to the Distribution System), licensed contractors, and any other persons involved in the connection of small-scale solar PV generation systems to the distribution network and/or entering into an energy netting arrangement with the

distribution companies. It is limited to small-scale solar PV electricity generators connected to the distribution network and which do not exceed an aggregate capacity of 5MW capacity in a single premises.

In Dubai, as part of encouraging residential and commercial buildings to make use of solar panels, Dubai passed Executive Council Resolution No. 46 of 2014 concerning the Connection of Generators of Electricity from Solar Energy to the Power Distribution System in the Emirate of Dubai ("**Resolution 46**"), known as the Shams Dubai, a distributed renewable energy regime. Resolution 46 sets out the requirements for both residential and commercial solar power generating units connecting to the Distribution System and applies to all Producers, including in special development zones and free zones.

Under Resolution 46, Producers (building owners or tenants) can generate electricity using a solar PV system on their premises with any excess generation being exported to the Distribution System. The net-metering credit is a direct exchange of values; for each kWh of excess energy, a kWh is credited for future use, with no expiry (except if terminated). DEWA is the regulator for the purposes of Resolution 46.

Under Resolution 46, Producers can generate electricity using a solar PV system on their premises with any excess generation being exported to the Distribution System. DEWA can cap the amount of electricity that may be exported to the Distribution System by each Producer. The electricity generated must be either consumed by the Producer at the premises associated with the relevant consumption account (not at other premises which the Producer may own) or, if there is an excess, exported to the Distribution System.

On 11 May 2020, the Government of Dubai and DEWA issued a Communication to the Solar Industry on Shams Dubai which provided, among other things, that ground-mounted projects are no longer envisaged under Shams Dubai and that the maximum capacity to be installed in a plot is capped at 2,080 kW (lower limits can apply based on the customer's total connected load in the plot, as per the connection conditions).

3.5 Are there financial or regulatory incentives available to promote investment in distributed/C&I renewable energy facilities?

Dubai has established the Dubai Green Fund to provide access to loans for investors in the renewable energy sector, which acts as an investment arm of DEWA. The Dubai Green Fund offers loans to companies in the clean energy sector and includes, for example, investment in the energy efficiency projects (including rooftop solar) at Dubai International Airport and Jebel Ali Free Zone Authority.

3.6 What are the main sources of financing for the development of distributed/C&I renewable energy facilities?

Distributed renewable energy is typically privately funded.

3.7 What is the legal and regulatory framework that applies for clean energy certificates/environmental attributes from renewable energy projects?

The Dubai Carbon Centre of Excellence is the exclusive issuer of renewable energy certificates in the UAE following an agreement with the International Renewable Energy Certificate Standard ("**I-REC**"). I-REC is a standard used for systems tracking environmental and economic attributes and greenhouse gas from energy.

3.8 Are there financial or regulatory incentives or mechanisms in place to promote the purchase of renewable energy by the private sector?

The purchase of electricity is not permitted by the private sector (please see above).

4 Consents and Permits

4.1 What are the primary consents and permits required to construct, commission and operate utility-scale renewable energy facilities?

A licence (or formal exemption) from the Abu Dhabi DOE, Dubai RSB or FEWA (depending on the emirate in which the facility is based) will need to be obtained. These will be project specific, but typically include a requirement for an environmental impact assessment and a construction or building permit, as well as having a valid trade licence and commercial registration. In addition, a number of no objection certificates may be required, for example, from Civil Defence, the Civil Aviation Authority and Etisalat.

Under the DOE Law, the Abu Dhabi DOE is responsible for licensing all institutions, entities, companies and persons working in the energy sector (which includes the generation, transmission, distribution and storage of renewable energy) and monitoring their commitment to providing the optimum level of quality services in accordance with the legislations in force, and in coordination with the relevant authorities. Under article 9 of the DOE Law, an establishment or individual is prohibited from engaging in any activity in the energy sector in Abu Dhabi without obtaining the required licence from the Abu Dhabi DOE.

Under the RSB Resolution and the Dubai IPP Law, the Dubai RSB is responsible for licensing Regulated Activities. No public or private entity (excluding DEWA which is exempt) may conduct Regulated Activities without an RSB licence, which is issued on the basis of technical, financial and administrative criteria. A "Regulated Activity" refers to any activity related to generating electricity, desalinating and adding minerals to water, or a combination of generating electricity and desalinating and adding minerals to water, for the purpose of supplying the transmission system with produced electricity and/or water in Dubai.

4.2 What are the primary consents and permits required to construct, commission and operate distributed/C&I renewable energy facilities?

Please see question 3.4 above. There are also specific licensing requirements for contractors supplying and installing distributed renewable energy facilities. For example, in Abu Dhabi, the distribution company is responsible for the certification of solar PV integrators in accordance with a designated registration scheme. In Dubai, under Resolution 46, any entity supplying, installing and/or operating and maintaining a solar PV system pursuant to Resolution 46 must be registered and qualified as a consultant/contractor; namely, licensed by the Dubai Department of Economic Development and approved by DEWA as a consultant/contractor.

4.3 What are the requirements for renewable energy facilities to be connected to and access the transmission network(s)?

Connection to the transmission network requires compliance with the technical standards. In Abu Dhabi, the Abu Dhabi Transmission Code sets out the conditions for connection to the transmission system, demand forecasts, operational planning, operating margin and demand control. Similarly, the Abu Dhabi Distribution Code sets out the requirements for connection to the distribution system, demand and generation forecasts, operational planning, testing and monitoring.

For distributed energy, in Abu Dhabi, the owner may apply for the connection of a small-scale solar PV generation to the distribution network. However, the owner cannot enter into an energy netting arrangement with the distribution company unless there is an electricity supply agreement under the owner's name for the same premises and linked to one metered service point. A PV Connection Agreement between the owner or Producer and the distribution company sets out the terms and conditions for the solar PV connection and generation to the distribution network and the energy netting arrangement.

In Dubai, the Independent Water and Power Producers Code issued in January 2020 by the Dubai RSB applies to all independent power producers connected to the transmission system. The code includes the Electrical Connection Conditions Code which applies to DEWA and to generators, specifying the minimum technical, design and operational criteria which must be complied with by generators seeking to be connected to the transmission system, and the minimum technical, design and operational criteria which must be complied with by DEWA.

Also in Dubai, the RSB Renewables Standards set out a common set of requirements for renewable resource-generating facilities connected to DEWA transmission and distribution systems and set up a common framework for grid connection agreements between the network operator and the renewable resource-generating facility owners. The RSB Renewables Standards detail technical requirements in relation to the protection scheme, power quality, normal and emergency modes of operation, modes of operating and metering.

Finally, under Shams Dubai, a person or entity may not connect its facility to the distribution system without obtaining the prior consent of DEWA, subject to the requirements set out in Resolution 46. Such connection will be subject to the terms of a connection agreement with DEWA.

4.4 What are the requirements for renewable energy facilities to be connected to and access the distribution network(s)?

Please see above.

4.5 Are microgrids able to operate? If so, what is the legislative basis and are there any financial or regulatory incentives available to promote investment in microgrids?

Microgrids are not permitted to operate, since business-to-business distribution and sales other than to the applicable state-owned monopoly singe-buyer offtaker in an emirate are not permitted.

There are no financial or regulatory incentives available to promote investment in microgrids.

4.6 Are there health, safety and environment laws/regulations which should be considered in relation to specific types of renewable energy or which may limit the deployment of specific types of renewable energy?

We are unaware of any health and safety or environmental regulations that would distinguish between different types of renewable energy projects. The relevant health, safety and environment regulations may, however, be developed further in light of the increased focus on renewables and, in particular, hydrogen projects.

5 Storage

5.1 What is the legal and regulatory framework which applies to energy storage and specifically the storage of renewable energy?

In Abu Dhabi and Dubai, the Abu Dhabi DOE and the Dubai RSB, respectively, regulate the storage of energy as part of their broader mandates to regulate the energy sector in these emirates.

5.2 Are there any financial or regulatory incentives available to promote the storage of renewable energy?

There are currently no financial or regulatory incentives available to promote the storage of renewable energy.

6 Foreign Investment and International Obligations

6.1 Are there any special requirements or limitations on foreign investors investing in renewable energy projects?

The previous requirement under Federal Law No. 2 of 2015 (the "**Commercial Companies Law**") that all entities must be majority owned by UAE nationals or wholly owned UAE entities was amended by the Federal Decree Law No. 26 of 2020 (the "**2020 Law**"), which introduced landmark amendments to the Commercial Companies Law. The 2020 Law amended 51 articles of the Commercial Companies Law and introduced three new articles. The most substantive change was the removal of the general requirement for a UAE national (or company wholly owned by UAE nationals) to own 51% of the share capital of a UAE company. In addition, the general requirement for a UAE national (or company wholly owned by UAE nationals) to act as a service agent of UAE onshore branch offices was removed. Foreign investors may also own 100% of certain UAE businesses by way of a single shareholder company.

Significantly, however, the blanket application of foreign ownership restrictions were removed by the 2020 Law. Rather, the default position is now that all companies may be wholly owned by non-UAE nationals, unless there is a specific restriction to the contrary. Further, the measures are subject to the UAE Cabinet, in conjunction with a new committee to be formed by the Cabinet, preparing a list of activities with "strategic interest". Article 5 of the Amending Law states that no amendments may be made to the memorandum of association, or equivalent document, of an existing company which prejudice UAE national ownership if the company carries out activities of strategic interest, without the consent of the competent licensing authority. Therefore, companies that conduct activities having a strategic interest may be subject to a minimum UAE ownership requirement, as determined by the relevant economic department in each emirate.

As of the date of writing, each of the Economic Departments in Abu Dhabi and Dubai have published a list of activities which may be 100% foreign owned. Significantly, these include the following.

In Abu Dhabi:

- civil works of energy generation construction stations;
- power generation plants maintenance;
- wholesale of electricity generation, transmission and distribution equipment trading;
- electricity transmission;
- electricity distribution;
- electricity plants and networks operation and maintenance;
- solar panels manufacturing and solar panels assembling; and
- wind instruments manufacturing.

In Dubai:

- power generation;
- power stations contracting and repairing;
- solar panels manufacturing and solar panels assembling;
- solar energy systems and components trading;
- power generation, transmission & distribution equipment trading;
- power generators and transformers assembly;
- landfill waste gas recovery;
- green hydrogen production; and
- energy storage units manufacturing.

Notwithstanding the above relaxations in foreign ownership, government procurements will typically include some form of UAE ownership requirement in practice, often held through a government or government-owned entity.

Finally, there are a number of free zones which not only provide tax holidays but also permit 100% foreign ownership of companies. The free zones are generally sector/activity specific. As a general rule, an entity licensed in one of the free zones should only conduct business within the confines of that free zone or outside the UAE.

6.2 Are there any currency exchange restrictions or restrictions on the transfer of funds derived from investment in renewable energy projects?

The UAE dirham ("**AED**"), the official currency of the UAE, is pegged to the US dollar.

There are certain restrictions under anti-money laundering and terrorist financing provisions pursuant to the UAE's international obligations. Cabinet Decision No. 10 of 2019 concerning the EWEC Law places various obligations, including the requirement that wire transfers exceeding AED 3,500 be accompanied by certain details of the originator of the funds. It further provides that customer due diligence should be carried out where occasional transactions take place for amounts equal to or exceeding AED 55,000 (such transaction could be a single transaction or several that appear to be linked) or where occasional transactions are carried out in the form of Wire Transfers for amounts equal to or exceeding AED 3,500. Suspicious transactions should be reported to the Financial Intelligence Unit.

6.3 Are there any employment limitations or requirements which may impact on foreign investment in renewable energy projects?

There are a number of requirements, including for foreign employees to hold a valid employment visa and work permit.

In addition, Emiratisation is increasingly significant and there are both statutory and contractual requirements to both hire and train UAE nationals. There are restrictions regarding the termination of employment for UAE nationals. In addition, under the long-term, IPP power purchase agreements, there is typically a contractual obligation on the developer to give a preference to UAE labour, supervisory, professional and other personnel, provided that such personnel are at least as reasonably favourable to the developer as others available, taking into account price, quality, reliability and schedule.

6.4 Are there any limitations or requirements related to equipment and materials which may impact on foreign investment in renewable energy projects?

At a federal level, Cabinet Resolution No. 10 of 2020 concerning the UAE Control System for Solar Products provides that a certificate of conformity must be obtained, and continuous conformity for products must be adhered to, before connecting to the grid. "Product" is defined as solar products including all appliances, equipment, storage batteries and materials related to the process of generating electric energy using solar cells. The resolution is intended to apply to all solar energy products offered, including the free zones, except for large-scale solar projects.

There are also controls at an emirate level. For example, under Resolution 46, in relation to distributed solar, the solar PV system and any equipment forming part of the system or the installation must comply with DEWA's certification process. DEWA publishes a list of equipment meeting eligibility requirements. The standards and accreditation requirements for equipment are set out in Annex C to the DEWA Standards for Distributed Renewable Resources Generators.

In addition, under the long-term, IPP power purchase agreements, there is typically a contractual obligation for the developer to give a preference to the use of construction equipment and other equipment, materials and products produced and manufactured in the UAE, provided that such equipment, materials and products are at least as reasonably favourable to the developer as others available, taking into account price, quality, reliability and schedule.

7 Competition and Antitrust

7.1 Which governmental authority or regulator is responsible for the regulation of competition and antitrust in the renewable energy sector?

UAE Federal Law No. 4 of 2012 on the regulation of competition (the "**Competition Law**") entered into force in February 2013. The Competition Law regulates restrictive agreements, abuse of market power and merger control. Cabinet Decision No. 13 of 2016 established the jurisdictional threshold triggering a mandatory notification requirement: a merger or acquisition must be notified if the overall market share of the involved parties in the relevant market exceeds 40% and the concentration may affect competition. Whether the relevant threshold is met depends on the definition of the relevant market. Where the threshold is met, a notification is technically required within a specified period. Notifications are suspensory; therefore, following a notification, the concerned parties must not carry out any action or procedure to complete the transaction before the concentration has been formally cleared.

Under the Competition Law, any agreement, practice or business related to a certain commodity or service where another law or regulation grants organisation of its competition rules to sectoral regulatory bodies, is exempted from the application of the provisions of the Competition Law, except where such

sectoral regulatory bodies request that the Ministry of Economy undertake such issue in whole or in part and the Ministry of Economy approves such request. This exclusion extends to activities related to the production, distribution and transmission of electricity and water and would therefore include the renewable energy sector. Therefore, to the extent that renewable energy activities are regulated (as is the case in, for example, Abu Dhabi through the Abu Dhabi DOE and in Dubai through the Dubai RSB), the provisions of the Competition Law should not apply.

In Abu Dhabi, pursuant to the DOE Law, the Abu Dhabi DOE may impose administrative fines for breach of the DOE Law or licence/exemption conditions. It can also issue notices, warnings, as well as mandatory financial, administrative and technical supervision, suspension of activities, suspension or cancellation of a licence, and temporary or permanent closure of the entity. In Dubai, under the Dubai IPP Law, licensed entities, which fail to comply with a violation notice, may be subject to a fine by the Dubai RSB, which also has the power to suspend a licence for a period not exceeding three months or cancel a licence.

To the extent that the Competition Law applies, the UAE Competition Committee is the competent body responsible for enforcement of the Competition Law.

7.2 What power or authority does the relevant governmental authority or regulator have to prohibit or take action in relation to anti-competitive practices?

Please see question 7.1 above.

7.3 What are the key criteria applied by the relevant governmental authority or regulator to determine whether a practice is anti-competitive?

In practice, the single buyer, transmission, distribution and supply networks are controlled through price control reviews. For example, in Abu Dhabi, the Abu Dhabi DOE has the power to set (subject to Executive Council approval) fees, tariffs and prices related to its competences. In Dubai, the Dubai Executive Council Decision No. 16 of 2011 governs the applicable electricity and water tariffs in Dubai, applying a slab tariff, which includes the right for DEWA to charge a fuel surcharge.

8 Dispute Resolution

8.1 Provide a short summary of the dispute resolution framework (statutory or contractual) that typically applies in the renewable energy sector, including procedures applying in the context of disputes between any applicable government authority/regulator and the private sector.

Any decisions or disputes that affect a particular renewable energy project are governed in accordance with the terms of the applicable contract.

UAE Federal Law No. 6 of 2018 concerning arbitration (the "**Arbitration Law**") entered into force on 16 June 2018 and is based on the UNCITRAL Model Law. The Arbitration Law repealed the provisions contained within the arbitration chapter of the UAE Federal Law No. 11 of 1992, as amended (the "**Civil Procedure Code**") and applies to any arbitration conducted inside the UAE, unless: the parties agree to submit the dispute to the provisions of another arbitration law (subject to public policy requirements); it is an international commercial arbitration conducted abroad where the parties agree to submit the arbitration to the provisions of the Arbitration Law; or it is an arbitration arising out of a dispute concerning a legal relationship of a contractual or non-contractual nature and regulated by the laws in force in the UAE, except as expressly excluded otherwise. The Arbitration Law sets out the requirements for arbitration agreements, the appointment of the arbitral tribunal, arbitral proceedings, arbitral awards and enforcement of arbitral awards. It introduced mechanisms aimed at improving the efficiency and finality of the arbitral process, incorporating general international arbitration principles such as the doctrine of separability.

The Dubai International Financial Centre and the Abu Dhabi Global Market both operate as common law jurisdictions in matters of civil law and both have their own arbitration laws which will apply with arbitral proceedings with their judicial seat in the Dubai International Financial Centre or the Abu Dhabi Global Market (as applicable).

8.2 Are alternative dispute resolution or tiered dispute resolution clauses common in the renewable energy sector?

Yes, alternative dispute resolution and tiered dispute resolution clauses are common in the energy sector. Power purchase agreements typically include tiered dispute resolution commencing with amicable dispute resolution, followed by a technical expert decision and finally arbitration.

8.3 What interim or emergency relief can the courts grant?

Articles 18(2) and 21 of the Arbitration Law provide that tribunals and courts can order interim and conservatory measures in support of arbitral proceedings, where appropriate, either at the request of a party or on its own motion. Such measures include: preservation of evidence and goods constituting the subject matter of the dispute; maintenance of assets and funds from which an award may be satisfied; maintenance or restoration of the *status quo* pending final determination of the tribunal; and action to prevent current or imminent harm or prejudice to the arbitral process itself (or refraining to act, as applicable).

8.4 Is your jurisdiction a party to and has it ratified the New York Convention on the Recognition and Enforcement of Foreign Arbitral Awards and/or the Convention on the Settlement of Investment Disputes between States and Nationals of Other States and/or any significant regional treaty for the recognition and enforcement of judgments and/or arbitral awards?

On 21 August 2006, the UAE acceded to the 1958 New York Convention on the Recognition and Enforcement of Arbitral Awards ("**New York Convention**"). The New York Convention entered into force in the UAE on 19 November 2006. In 2010, the Fujairah Court of First Instance recognised and enforced a foreign arbitral award pursuant to the New York Convention, understood to be the first case of enforcement of a foreign award pursuant to the New York Convention.

Both the Dubai and Abu Dhabi Courts have since recognised and enforced foreign arbitral awards pursuant to the New York Convention; however, in a system of non-binding precedent, it should be noted that there have been some inconsistent judgments which have refused enforcement of foreign awards in favour of domestic dispute resolution.

The UAE ratified the Convention on the Settlement of Investment Disputes on 23 December 1981 and the International

Centre for Settlement of Investment Disputes ("**ICSID**") Convention entered into force in the UAE on 22 January 1982.

The UAE is also a party to the 1983 Riyadh-Arab Agreement for Judicial Co-operation (the "**Riyadh Convention**") and the 1996 Gulf Co-operation Council Convention for the Execution of Judgments, Delegations and Judicial Notifications (the "**GCC Convention**"). The Riyadh and GCC Conventions provide, among other things, for the recognition and enforcement of civil judgments amongst contracting parties.

8.5 Are there any specific difficulties (whether as a matter of law or practice) in litigating, or seeking to enforce judgments or awards, against government authorities or the state?

It is not possible to enforce judgments that seek to seize property owned by the state. Article 247(1) of the Civil Procedure Code provides that "public property owned by the state or one of the emirates" may not be seized for the purposes of enforcement. "Public property" is defined under the UAE Civil Transactions Code (Federal Law No. 5 of 1985, as amended) as all real property or movables owned by the state or public judicial persons, allocated in fact or in law for the public benefit.

In Dubai, in accordance with Dubai Law No. 3 of 1996 (as amended) (the "**Dubai Government Lawsuits Law**"), any lawsuits against the Ruler require the approval of the Ruler. In addition, any lawsuit against the Government of Dubai and any department thereof must follow the procedures set out in the Dubai Government Lawsuits Law. Article 3 *bis* of the Dubai Government Lawsuits Law, among other things, prohibits the recovery of debts or obligations of the Ruler or the Government by attachment, sale, by auction or taking possession in any other legal manner, of the properties and assets of the Ruler or the Government.

Regarding the enforcement of foreign judgments, whether against a government authority, state organ or private entity, article 235 of the Civil Procedure Code provides that judgments and orders made in a foreign country may be executed in the UAE under the same conditions provided for in the law of that country for the execution of judgments and orders issued in the UAE. Thus, there is a requirement for reciprocal treatment.

A number of conditions must also be satisfied, in practice affording UAE courts a wide discretion to reject enforcement of a foreign judgment on the basis of conflict or contradiction with previously passed orders or judgments of UAE courts and/or violation of public policy or public order. As a result, in the absence of a treaty between the UAE and the country concerned on mutual recognition and enforcement of judgments, in practice there are limited circumstances when a foreign judgment is enforceable in the UAE.

8.6 Are there examples where foreign investors in the renewable energy sector have successfully obtained domestic judgments or arbitral awards seated in your jurisdiction against government authorities or the state?

We are unaware of any such instances in the renewable energy sector.

9 Updates and Recent Developments

9.1 Please provide a summary of any recent cases, new legislation and regulations, policy announcements, trends and developments in renewables in your jurisdiction.

Renewable energy provides a platform for both energy and economic diversification in the UAE. As the country strives to diversify from an oil and gas-based economy, the UAE has set ambitious renewable energy targets, with a commitment to achieve 44% renewable energy sources by 2050. The UAE, and particularly the Emirates of Abu Dhabi and Dubai, continue to forge ahead with impressive renewables projects, which are leading not just on a regional scale but globally, with new technologies, project size and the tariffs that have been achieved. The focus is very much on solar energy (both solar PV and CSP); however, there are also up-and-coming opportunities in respect of green hydrogen, wind, and waste-to-energy.

The amendments to the Commercial Companies Law may have a limited impact in relation to renewables activities, where they are the subject of public procurements, but otherwise could provide boost opportunities for foreign investors in the sector.

Finally, the repeal of UAE Federal Law No. 15 of 1972 on boycotting Israel is opening up relations between the UAE and Israel and is expected to enable trade opportunities, including in the renewable energy sector.

Note

This chapter is not intended to provide legal or other advice and readers should not take, or refrain from taking, action based on its content. Please see https://www.dentons.com for legal notices.

The laws referenced in this chapter are English translations of the original Arabic language laws. Where there is a conflict between the English translation and the original Arabic language law, the Arabic language law prevails.

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Mhairi has advised on a number of ground-breaking renewable energy projects in the Middle East. In the UAE, this has included advising on the DEWA's landmark CSP project, Phase IV of Dubai's Mohammed bin Rashid Al Maktoum Solar Park, as well as Phases II and III. In Abu Dhabi, she advised on the Sweihan solar PV IPP. Mhairi has also advised on a number of commercial and industrial ("**C&I**") projects in different emirates across the UAE.

Mhairi is a member of the Board and Vice-Chair of the Clean Energy Council, a non-profit organisation providing a forum for both private and public sector organisations participating in the clean energy sector across the MENA region.

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Dentons has been operating in the UAE (through its offices in Abu Dhabi and Dubai) since 1968. Since then, the firm has been involved in numerous landmark events, including acting as counsel to the late Sheikh Zayed bin Sultan Al Nahyan and helping to draft the treaty that united the emirates. The two offices operate together to provide regional and international clients with the benefits of a fully integrated practice and have advised on many major renewable projects in the UAE and the wider region. In the UAE, the Dentons team has worked on the Shams 1 CSP project and the Sweihan solar PV IPP in Abu Dhabi as well as the Dubai solar PV and CSP IPPs.

The team advises governments, multinational organisations, developers, utilities, banks, landowners and contractors on all aspects of solar project development and investments, both utility-scale and C&I.

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1 Overview of the Renewable Energy Sector

1.1 What is the basis of renewable energy policy and regulation in your jurisdiction and is there a statutory definition of 'renewable energy', 'clean energy' or equivalent terminology?

The Promotion of the Use of Energy from Renewables Sources Regulations 2011 (SI 2011/243) applies the definition set out in Directive 2009/28/EC (**Renewable Energy Directive**) on the promotion of the use of energy from renewable sources. This defines "*energy from renewable sources*" as "*energy from renewable non-fossil sources, namely wind, solar, aerothermal, geothermal, hydrothermal and ocean energy, hydropower, biomass, landfill gas, sewage treatment plant gas and biogases*", each of which is then defined separately.

This legislative framework required the government to ensure that renewable energy comprised 15% of the UK's total energy mix by 2020. The Renewable Energy Directive has now been superseded by Directive (EU) 2018/2001 (**RED2**). The deadline for transposition of RED2 into national law was after the UK's withdrawal from the EU and, to date, RED2 has not been transposed into UK law. Therefore, ongoing policy and regulation of renewable energy is instead derived from retained EU law and UK statute, notably the UK's binding commitments to:

- cut greenhouse gas emissions by 78% by 2035 compared to 1990 levels in the Carbon Budget Order 2021 (SI 2021/750); and
- achieve a 100% reduction of greenhouse gas emissions by 2050 compared to 1990 levels (the "net zero" target) in the Climate Change Act 2008 (2050 Target Amendment) Order (SI 2019/1056).

There are various other policies, incentives, requirements and regulations that are detailed throughout this chapter below.

1.2 Describe the main participants in the renewable energy sector and the roles which they each perform.

Governmental participants

The Department for Business, Energy and Industrial Strategy (**BEIS**) is responsible for overseeing the electricity sector, including in relation to renewable energy. BEIS was formed in 2016 following the merger of the Department of Energy and Climate Change and the Department for Business and Innovation.

BEIS is supported by other public bodies, including:

- **The Gas and Electricity Markets Authority (GEMA)**: GEMA has primary responsibility for regulation of the energy sector. Its powers and duties are derived from UK statute (including the Gas Act 1986, the Electricity Act 1989 (**Electricity Act**), the Utilities Act 2000, the Competition Act 1998, the Enterprise Act 2002 and the Energy Acts of 2004, 2008, 2010 and 2011), together with directly effective European Community legislation that was retained by the UK after its exit from the EU.
- **The Office of Gas and Electricity Markets (Ofgem)**: a non-ministerial government department. GEMA delegates regulation of the renewable energy sector to Ofgem. Ofgem administers environmental programmes and sustainability schemes on behalf of the government under its E-Serve business unit (see questions 3.5 and 3.7 for more detail). Key duties and functions concerning electricity include:
  - regulating distribution and transmission networks;
  - granting licences;
  - protecting the interests of existing and future electricity (and gas) consumers;
  - ensuring that electricity wholesale and retail markets are competitive; and
  - managing the commercial tender process for offshore transmission projects.

Private participants

- **Generation companies**: following privatisation of the generation industry in the 1990s, an increasing number of generating companies have been established, including the "big six" – British Gas, e.on, EDF, RWE npower, Scottish Power and SSE.
- **Transmission companies**: the transmission network is owned and maintained by regional transmission companies: National Grid Electricity Transmission plc for England and Wales; Scottish Power Transmission Limited for southern Scotland; Scottish Hydro Electric Transmission plc for northern Scotland and the Scottish islands groups; and Northern Ireland Electricity for Northern Ireland. The National Grid Electricity System Operator (**NGESO**) is responsible for controlling the stable and secure operation of the national electricity transmission system as a whole.
- **Suppliers** – Energy is purchased from the wholesale market by suppliers (or self-supplied by the big six), and then sold to customers.

1.3 Describe the government's role in the ownership and development of renewable energy and any policy commitments towards renewable energy, including applicable renewable energy targets.

Renewable energy assets will continue to be owned and developed by the private sector with the support of the government in order to satisfy its binding commitments to reduce UK greenhouse gas emissions, as described in question 1.1.

In December 2020, BEIS published a white paper titled "Powering our Net Zero Future" (**Energy White Paper**) setting out how it intends to meet these targets and building on the government's "Ten Point Plan for a Green Industrial Revolution" (**Ten Point Plan**) published in November 2020. Key features of the Energy White Paper and the Ten Point Plan include:

- targeting 40GW of installed offshore wind capacity by 2030 through £20 billion of private investment;
- investing £1 billion in the UK's energy innovation programme to develop future renewable technologies such as green hydrogen, with the aim of 5GW of low-carbon production capacity by 2030;
- developing a biomass strategy, particularly in relation to biomass with carbon capture and storage;
- aiming to bring at least one large-scale nuclear project to the point of final investment decision by the end of the current Parliament;
- increasing the proportion of sustainable biomethane in the gas grid; and
- increasing the funding available to study the use of hydrogen in homes and consulting on the role of "hydrogen-ready" appliances.

2 Renewable Energy Market

2.1 Describe the market for renewable energy in your jurisdiction. What are the main types of renewable energy deployed and what are the trends in terms of technology preference and size of facility?

The UK is particularly well placed to take advantage of wind power, with some of the best conditions in Europe and high average wind speeds. As a result, onshore and offshore wind farms together are the largest source of renewable energy in the UK, with 11.8% of aggregate UK generation (including from fossil fuels) coming from offshore wind projects and 13.4% from onshore wind projects in Q1 2021. Examples include Orsted's Hornsea One, located 120km off the Yorkshire coast in England, which is currently the world's largest offshore wind farm with a capacity of 1.2GW, and the Dogger Bank project which, when completed, will be the world's largest offshore wind farm with a capacity of 3.6GW.

Bioenergy (biomass or waste-fuelled plant) projects are the UK's second-largest contributors to renewable energy generation after wind, providing 12.3% of UK electricity generation in Q1 2021. These include the Drax Power Station in Yorkshire, formerly the UK's largest coal-fired power station, where four of the six boilers have been converted to biomass, with a combined capacity of 2.6GW. The two remaining coal units ceased commercial operations in March 2021 and the plant is piloting a carbon capture and storage scheme in order to create negative-emissions power generation.

Hydropower and solar photovoltaic (**PV**) projects contribute a smaller (but still significant) percentage of UK renewable energy and tend to be smaller in scale (the majority being less than 10MW).

2.2 What role does the energy transition have in the level of commitment to, and investment in, renewables? What are the main drivers for change?

In 2019, following Parliament's declaration of a "climate emergency" and recommendations from the independent Committee on Climate Change, the government legislated for net zero greenhouse gas emissions by 2050, as discussed in question 1.1.

One of the principal ways in which the UK proposes to meet the 2050 net zero target is by increasing the use of renewable energy. The Energy White Paper, discussed in detail in question 1.3, sets out how the UK will invest in renewable energy in order to support the energy transition.

2.3 What role, if any, has civil society played in the promotion of renewable energy?

Civil society has been key to the promotion of renewable energy in the UK, with the environment consistently polling as one of the top three issues for the British public. This can be seen by the strong environmental, social and governance (**ESG**) movement in the UK, with investors putting almost £1 billion a month on average into investment funds that apply ESG criteria in 2020. The rise of responsible investing, together with a strong activist shareholder culture in the UK, benefits renewable energy in the UK.

In addition, at a community level, there has been a noticeable growth of on-site distributed renewable generation projects in recent years (both residential and commercial), which is underpinned by general environmental concerns and technological innovation, as well as by government policy.

2.4 What is the legal and regulatory framework for the generation, transmission and distribution of renewable energy?

The Energy Act 2013 (**Energy Act**) is the principal legislation relating to renewables, establishing a legal framework with a key aim to secure affordable and low-carbon electricity. The central provisions of the Energy Act relating to renewable energy include the introduction of:

- provisions to enable the Secretary of State to set a decarbonisation target range in secondary legislation (as discussed in question 1.1);
- a statutory framework for Contracts for Difference (**CfD**) (see question 3.2 for more detail);
- the Capacity Market, being a market to ensure the security of electricity supply based on the government's forecast of electricity demand;
- renewables obligations certificates (see question 3.7 for more detail); and
- access to markets via long-term contracts for independent renewable generators (including power purchase agreements (**PPAs**)), and through liquidity measures to enable the government to improve the liquidity of the electricity market.

The Electricity Act is the principal legislation governing electricity generation generally, including from renewable sources. Subject to applicable exemptions, an electricity generator requires a generation licence from Ofgem to operate. See question 4.1 for more detail.

2.5 What are the main challenges that limit investment in, and development of, renewable energy projects?

The challenges include:

- Uncertainty as to the long-term laws, policies and the associated incentives relating to the renewable sector that may be adapted by successive governments is a challenge to any investment modelling. For example, onshore wind projects benefitted from certain government subsidies which were then removed in 2016, and then, in early 2020, onshore wind subsidies were revived.

- Intermittency of output (given that renewable sources, by their nature, will vary and not be continuous) presents an issue for renewables integrating into a stable power supply. This can be mitigated, to some extent, with energy storage systems. However, whilst the technology is developing rapidly and the costs are falling, such storage systems can be expensive (particularly on large-scale projects).
- Much of the technology involved with renewables project is new or rapidly evolving and there is an investment risk associated with any nascent technology, including in respect of deployment issues and risk of obsolescence.
- Grid inflexibilities mean that integration of variable renewable sources into grid infrastructure creates increased complexity, including with respect to balancing supply and demand.

2.6 How are large utility-scale renewable power projects typically tendered?

The CfD scheme is the government's main mechanism for supporting low-carbon electricity generation (see question 3.2 for more detail).

CfDs are awarded in a series of competitive auctions, which drives efficiency and cost reduction. To date, there have been three successful CfD allocation rounds (2015, 2017 and 2019). The fourth allocation round, planned for December 2021, is expected to include auctions in different pots: one for "established" technologies (including onshore wind, which was excluded from the previous round); one for less-established technologies (such as floating offshore wind); and a third for offshore wind projects.

2.7 To what extent is your jurisdiction's energy demand met through domestic renewable power generation?

The share of UK electricity generated from renewable sources has increased dramatically in recent years, with a 500% increase in the amount of renewable capacity connected to the National Grid from 2009 to 2020.

In 2020, electricity from renewable sources became the largest source of electricity in the UK for the first time in history, providing 42.9% of all UK power, with fossil fuels (primarily natural gas) accounting for 38.5%. The Q1 2021 figure is slightly lower, at 41.6%, as a result of less-favourable weather conditions.

3 Sale of Renewable Energy and Financial Incentives

3.1 What is the legal and regulatory framework for the sale of utility-scale renewable power?

The Energy Act and related secondary legislation provide the main legal and regulatory framework for the sale of utility-scale renewable power in the UK and implement the UK's Electricity Market Reform policy. The Energy Act supplements the Electricity Act and the Utilities Act 2000, which provide a legal and regulatory framework for the wholesale electricity market generally in the UK.

3.2 Are there financial or regulatory incentives available to promote investment in/sale of utility-scale renewable power?

The primary incentive schemes related to renewable energy include:

The Renewable Obligation (RO): the RO scheme, which came into effect in 2002 in England, Wales and Scotland, followed by Northern Ireland in 2005, was previously the main financial mechanism to incentivise large-scale renewable electricity projects in the UK (see question 3.7 for more detail). The RO scheme closed to all new generating capacity on 31 March 2017 and has now been replaced by the CfD scheme.

The CfD scheme: the CfD scheme is the primary mechanism to incentivise new low-carbon electricity generation. The CfD is a quasi-PPA between an eligible generator and the Low Carbon Contracts Company (**LCCC**), a wholly government-owned company established under the Energy Act. Generators with a CfD sell their electricity into the wholesale electricity market in the typical way; the CfD then pays the difference between an estimate of the market price for electricity and the generator's lowest estimate for the costs of developing, financing and operating the given technology (the strike price). When the market price is below the strike price, the generator receives a top-up payment from the LCCC for the additional amount. However, when the market price is above the strike price, the generator must pay back the difference to the LCCC. Although a CfD is a private law contract between a low-carbon electricity generator and the LCCC, it is issued under a detailed statutory framework under the Energy Act.

The Offtaker of Last Resort (OLR): the OLR scheme aims to promote the availability of PPAs. It is intended as a last resort to help independent renewable generators who cannot get a PPA through the usual commercial means by providing eligible generators with a guaranteed "back-stop" route-to-market at a specified discount to the market price.

3.3 What are the main sources of financing for the development of utility-scale renewable power projects?

The offshore wind sector currently represents the primary source of financing activity for large-scale renewable projects in the UK. A low interest rate environment coupled with a large number of lenders looking to participate in this sector has provided project developers with favourable conditions to finance their projects in recent years. To date, the main source of debt financing has been commercial banks; however, we have seen participation from export credit agencies (the Japanese ECA JBIC lent to the Moray East offshore wind farm in 2018). In recent years, we have also seen investment activity from new entrants to the market, such as pension funds (Danish pension funds PFA and PKA invested in the Walney Extension offshore wind farm in 2017) and infrastructure investors (Dalmore Capital Limited and Pensions Infrastructure Platform acquired a minority stake worth £701 million in 24 UK wind farms owned by EDF in 2018).

3.4 What is the legal and regulatory framework applicable to distributed/C&I renewable energy?

Distributed and C&I renewable energy facilities are subject to the same legal and regulatory framework as utility-scale renewable energy facilities with respect to the sale of electricity, participation in the wholesale market and connection to distribution and transmission networks.

3.5 Are there financial or regulatory incentives available to promote investment in distributed/C&I renewable energy facilities?

Available incentives include:

Feed-in Tariffs (FiT): the FiT scheme supports investment in small-scale renewable and low-carbon electricity generation

projects up to 5MW capacity. It offers long-term support to projects and provides generation and export tariffs based on the costs of generation for the following technologies: solar PV; onshore wind power; hydropower; anaerobic digestion; and micro combined heat and power (up to 2kW). The FiT scheme closed to new entrants on 31 March 2019 but continues to support existing generation for up to 25 years.

Smart Export Guarantee (SEG): following the closure of the FiT scheme to new installations, supplier-led SEG was introduced on 1 January 2020. Under the SEG, licensed electricity suppliers (with 150,000 domestic customers or more) are required to offer small-scale low-carbon generators a price per kWh for electricity exported to the National Grid. Remuneration is available to solar PV, wind, anaerobic digestion and hydro generators of up to 5MW in capacity, and micro combined heat and power installations up to 50kW. Mandated suppliers are required to provide at least one SEG compliant tariff. They are free to determine the price and length of the contract, provided that remuneration is greater than zero at all times.

3.6 What are the main sources of financing for the development of distributed/C&I renewable energy facilities?

The majority of smaller-scale distributed and C&I renewable energy facilities have been financed on balance sheet; however, project finance has grown in importance for investments in this sector. To date, the majority of this project finance debt has been provided by commercial banks, either on a standalone project or portfolio basis.

3.7 What is the legal and regulatory framework that applies for clean energy certificates/environmental attributes from renewable energy projects?

The RO scheme applies to large-scale renewable electricity projects in the UK creating a market for the sale of environmental attributes. The scheme obliges UK electricity suppliers to source an annually increasing proportion of the electricity supplied to customers from renewable sources.

Ofgem issues Renewable Obligation Certificates (**ROCs**) to qualifying renewable generators in respect of the electricity they generate. Such generators can then sell those ROCs to suppliers or traders as tradable commodities. Different renewable types receive different numbers of ROCs depending on their costs and size. Suppliers are then obligated to meet individual targets by purchasing ROCs either from renewable generators directly or from traders and brokers in the ROCs market. Ultimately, ROCs are used by suppliers to demonstrate that they have met their annual obligation.

This scheme closed to all new generating capacity on 31 March 2017. Projects that have been accredited before this date will be supported until 20 years from the date of accreditation or 31 March 2037, whichever is earlier.

3.8 Are there financial or regulatory incentives or mechanisms in place to promote the purchase of renewable energy by the private sector?

The Renewable Heat Incentive (**RHI**) is a financial incentive to encourage the uptake of renewable heat by businesses, public sector and non-profit organisations and homeowners. The non-domestic RHI was introduced in 2011, with the domestic RHI following in 2014. The schemes are designed to help bridge the gap between the costs of fossil fuel heating technologies and low-carbon alternatives. Participants receive a tariff, set in pence per kilowatt hour of heat used, for either seven (domestic RHI) or 20 years (non-domestic RHI), which is set at a level to cover the additional costs of the renewable heating system.

4 Consents and Permits

4.1 What are the primary consents and permits required to construct, commission and operate utility-scale renewable energy facilities?

In England, utility-scale projects with more than 50MW of capacity, or 100MW for offshore wind, are subject to the Planning Act 2008 (**Planning Act**) and are deemed "nationally significant infrastructure projects" requiring specific consent from the Planning Inspectorate which acts on behalf of the Secretary of State for BEIS. This excludes electricity storage projects (except for pumped hydro), which were recently carved out of this regime.

Consent is required under the Electricity Act for utility-scale projects which are not subject to the Planning Act or the Town and Country Planning Act 1990 (**TCPA**), such as offshore wind projects with a generating capacity of greater than 1MW but less than 100MW. Applications under the Electricity Act are considered by the Secretary of State for BEIS.

The installation of the project will need to comply with development regulations, including the Construction (Design and Management) Regulations 2015 which sets construction requirements and restrictions.

The Electricity Act provides that it is an offence to generate electricity for the purposes of supply to any premises without a licence or exemption. Licences are granted by Ofgem. The Secretary of State for BEIS may grant specific or class exemptions to this requirement.

The Electricity (Class Exemptions from the Requirement for a Licence) Order 2001 (SI 2001/3270) (**Class Exemptions Order**) provides a number of class-based exemptions to the general licensing requirements under the Electricity Act. Smaller utility-scale generators may benefit from the "Class A" exemption, for facilities which do not at any time provide electric power in excess of 10MW (for facilities with a declared net capacity of greater than 100MW) or 50MW (for facilities with a declared net capacity of less than 100MW).

In addition, generators must comply with relevant health and safety legislation and industry codes in order to operate their facilities, such as the Balancing and Settlement Code, the Connection and Use of System Code (**CUSC**) and the Distribution Use of System Agreement.

4.2 What are the primary consents and permits required to construct, commission and operate distributed/C&I renewable energy facilities?

In England, distributed and C&I renewable energy facilities are likely to fall beneath the 50MW threshold under the Planning Act and will instead be subject to approval under the TCPA. Onshore wind farms, including facilities with generating capacity in excess of 50MW, are subject to the TCPA planning regime due to the perceived increased local impact caused by their construction and operation. Planning applications under the TCPA are made by generators to the local planning authority.

Certain microgrids with a generating capacity of 50kW or less may benefit from permitted development rights where planning

permission is deemed to have been granted without the need for an application to the local planning authority.

The requirement for a generation licence under the Electricity Act applies equally to distributed renewable energy facilities, although distributed renewable energy facilities are likely to benefit from the Class A exemption under the Class Exemption Order.

Generators of distributed renewable energy must also comply with relevant industry codes in order to operate their facilities, as described in question 4.1.

4.3 What are the requirements for renewable energy facilities to be connected to and access the transmission network(s)?

In England, the Conditions of Electricity Transmission Licences (**CETL**) provides the standard terms of the licence, and the CUSC provides the commercial framework between NGESO and users of the National Grid.

Generators seeking access to the National Grid must make an application under the CETL to NGESO. If the application meets the requirements of the CETL and CUSC, NGESO must make an offer to the applicant as soon as practicable, offering connection to the National Grid. The offer of connection comprises:

- a construction agreement in respect of the relevant connection facilities;
- a connection agreement governing the relationship between the generator and NGESO; and
- an accession agreement to CUSC.

4.4 What are the requirements for renewable energy facilities to be connected to and access the distribution network(s)?

The UK's distribution networks are operated by two sets of operators: 14 distribution network operators (**DNOs**), who operate larger distribution networks; and independent distribution network operators (**IDNOs**) who operate smaller networks within areas covered by DNOs.

In order to be connected to and access distribution networks, the renewable energy facility must apply to the relevant DNO or IDNO in accordance with the requirements of the Electricity Act. The DNO or IDNO must then offer connection terms to the facility as soon as practicable, subject to certain exemptions.

4.5 Are microgrids able to operate? If so, what is the legislative basis and are there any financial or regulatory incentives available to promote investment in microgrids?

Microgrids may operate in the UK and are subject to the same legal and regulatory regime as distributed renewable energy facilities.

Until 2019, generators using microgrids were able to benefit from the FiT scheme, now replaced by the SEG scheme (see question 3.5 for more detail).

4.6 Are there health, safety and environment laws/regulations which should be considered in relation to specific types of renewable energy or which may limit the deployment of specific types of renewable energy?

The development of renewable energy projects requires infrastructure, and all construction projects in the UK must comply with the Construction (Design and Management) Regulations 2015 which form the key health and safety framework for the construction industry. More generally, the UK also has extensive health and safety regulations to ensure employers are responsible for the health and safety of their employees and those impacted by their business.

Whilst environmental laws generally encourage renewables development (see question 1.1), the planning consent process (see question 4.1) requires the consideration of environmental and social matters, and most utility-scale projects will also require an environmental impact assessment to assess the environmental risks of the project. Applications for large-scale projects will not be permitted if in an Area of Outstanding Natural Beauty or in a National Park, and wind projects are subject to further scrutiny in respect of protecting wildlife and (for offshore projects) marine conservation.

5 Storage

5.1 What is the legal and regulatory framework which applies to energy storage and specifically the storage of renewable energy?

Electricity storage (including the storage of renewable energy) is currently treated as a type of electricity generation. Accordingly, the applicable legal and regulatory framework that applies to electricity storage is currently the same as that applicable to electricity generation. Although the Electricity Act does not currently include a specific definition of electricity storage, the government has indicated that it intends to rectify this.

The provisions relating to generation licences (and exemptions), planning permission and construction described at question 4.1 also apply to electricity storage projects.

All electricity storage projects will also need a completed lease on satisfactory terms in relation to the land in which it is located and, in respect of battery storage projects, must comply with various UK, European and international standards on battery matters.

5.2 Are there any financial or regulatory incentives available to promote the storage of renewable energy?

Energy storage systems benefit from the FiT scheme (provided applications have been submitted prior to 31 March 2019) and the RHI scheme as described at question 3.5 as well as, for storage co-located with a renewable asset, SEG payments.

Additionally, in March 2021, BEIS launched the Longer Duration Energy Storage Demonstration competition for up to £68 million to be awarded to technologies that can demonstrate the capability of first-of-a-kind energy storage facilities with a longer duration.

6 Foreign Investment and International Obligations

6.1 Are there any special requirements or limitations on foreign investors investing in renewable energy projects?

There are no particular restrictions on foreign investment of UK renewable energy projects.

However, Ofgem, currently together with the European Commission (subject to any Brexit-related developments), is required to undertake an assessment as to whether foreign

ownership or control of a renewable power project poses a risk to security of supply.

Additionally, in April 2021, the National Security and Investment Act 2021 came into force, strengthening the government's powers to scrutinise transactions and projects on national security grounds, particularly in key areas (including certain parts of energy sector, and specifically organisations owning large-scale power generation of greater than 1GW). Following voluntary notification or "call-in" by the government, a full national security assessment may be made, which may result in the transaction or project being blocked or permitted, subject to certain conditions.

6.2 Are there any currency exchange restrictions or restrictions on the transfer of funds derived from investment in renewable energy projects?

No exchange control restrictions affect inward or outward investment (direct or portfolio), the repatriation of income or capital, the holding of currency accounts, or the settlement of currency trading transactions.

6.3 Are there any employment limitations or requirements which may impact on foreign investment in renewable energy projects?

No sectors of the economy are restricted to UK nationals or require majority equity holdings or other specified holdings by UK nationals. In practice, foreign companies can obtain work permits for foreign employees by demonstrating that their skill level or experience cannot be found among UK nationals.

6.4 Are there any limitations or requirements related to equipment and materials which may impact on foreign investment in renewable energy projects?

In respect of imports from outside the UK, there may be an obligation to comply with import licensing requirements and customs tariffs.

Aside from general restrictions applicable to materials that are harmful to health and safety and the environment, there are no other legal restrictions that apply to equipment or materials required to construct or operate renewable energy projects.

7 Competition and Antitrust

7.1 Which governmental authority or regulator is responsible for the regulation of competition and antitrust in the renewable energy sector?

The relevant authorities are:

- the UK Competition and Markets Authority (**CMA**); and
- Ofgem.

Under the Enterprise and Regulatory Reform Act 2013, both the CMA and Ofgem have concurrent powers to apply competition law in the renewable energy sector.

7.2 What power or authority does the relevant governmental authority or regulator have to prohibit or take action in relation to anti-competitive practices?

The CMA and Ofgem have a broad range of powers in respect of actual or suspected anti-competitive behaviour. These include the ability to:

- conduct market studies and, if appropriate, make a market investigation reference under which the CMA conducts an in-depth investigation into any feature, or combination of features, of a market in the UK;
- investigate suspected infringements (including by conducting "dawn raids");
- give specific directions to end anti-competitive behaviour;
- impose financial penalties of up to 10% of an undertaking's annual group worldwide turnover; and
- apply to the court for an order to disqualify an individual from acting as a director for up to 15 years.

In addition, the CMA has the power under the Enterprise Act 2002 to prosecute for criminal cartel offences (which covers agreements relating to price-fixing, market/customer sharing, output limitation or bid-rigging).

7.3 What are the key criteria applied by the relevant governmental authority or regulator to determine whether a practice is anti-competitive?

UK competition law prohibits anti-competitive agreements and conduct which amounts to an abuse of a dominant position.

Anti-competitive agreements

Agreements and concerted practices which, by object or effect, appreciably prevent, restrict or distort competition are prohibited. This captures formal written agreements as well as informal oral agreements and even tacit understandings between businesses.

Some agreements, such as price-fixing or market-sharing cartels, are considered anti-competitive by nature, regardless of their actual effect. Other arrangements, such as exclusive purchasing or supply obligations, will only be prohibited where there is an actual anti-competitive effect. An exemption is available in certain circumstances where it can be demonstrated that the anti-competitive effects of a particular agreement or conduct are outweighed by the pro-competitive benefits for consumers.

Abuse of a dominant position

An undertaking will be considered to hold a dominant position where it has the ability to behave independently of competitive pressures. Factors such as market share, size and number of competitors, barriers to market entry and customer buyer power are all relevant to assessing dominance.

Examples of abuse of a dominant position include charging unfair prices (either excessively high for consumers, or excessively low to drive out competitors), imposing other unfair trading conditions or refusing to supply existing customers without justification.

8 Dispute Resolution

8.1 Provide a short summary of the dispute resolution framework (statutory or contractual) that typically applies in the renewable energy sector, including procedures applying in the context of disputes between any applicable government authority/regulator and the private sector.

Judicial review in the national courts may be available to challenge decisions made by the government or other public bodies (including Ofgem). An application for judicial review must be made promptly and in any event within three months of the decision being challenged (subject to a few exceptions, where a shorter time limit applies). A number of such challenges have been brought in relation to renewables.

Where the rights and obligations of the participants in a renewables project are governed by contract, the agreed dispute resolution mechanism will apply. For example, the CfD standard terms and conditions provide for disputes to be finally resolved via the London Court of International Arbitration (**LCIA**) or, for certain types of dispute, expert determination.

8.2 Are alternative dispute resolution or tiered dispute resolution clauses common in the renewable energy sector?

Yes. For example, the CfD standard terms and conditions provide for most types of dispute between the LCCC and the generator to be referred first to their senior representatives. If no amicable resolution can be achieved within a minimum period of 30 days, the dispute can then be referred to expert determination or LCIA arbitration as appropriate.

8.3 What interim or emergency relief can the courts grant?

The English courts have a broad discretion to grant interim or emergency relief. Such relief may take the form of: (i) interim injunctions ordering a party to carry out a specific act or to refrain from carrying out a specific act (such as commencing proceedings in a foreign court); (ii) freezing orders preventing the dissipation of assets; (iii) orders for the preservation of evidence; (iv) orders for the disclosure of documents; and (v) orders in support of arbitral proceedings.

Some contracts related to the development of renewables projects provide for disputes to be resolved by arbitration. Where that is the case, the possibility of interim or emergency relief under the applicable institutional rules (if any) should be considered.

8.4 Is your jurisdiction a party to and has it ratified the New York Convention on the Recognition and Enforcement of Foreign Arbitral Awards and/or the Convention on the Settlement of Investment Disputes between States and Nationals of Other States and/or any significant regional treaty for the recognition and enforcement of judgments and/or arbitral awards?

The UK has signed and ratified both the New York Convention on the Recognition and Enforcement of Foreign Arbitral Awards (**New York Convention**) and the Convention on the Settlement of Investment Disputes between States and Nationals of Other States (**ICSID Convention**).

Its ratification of the New York Convention is subject to the reciprocity reservation (meaning it will only recognise and enforce awards made in the territory of another contracting state).

Following expiry of the Brexit transition period (on 31 December 2020), the Recast Brussels Regulation and the 2007 Lugano Convention ceased to apply to the UK. On 1 January 2021, the UK acceded to the 2005 Hague Convention on Choice of Court Agreements (**Hague Convention**) in its own right. However, the Hague Convention is narrower in scope than the Recast Brussels Regulation or the 2007 Lugano Convention. The UK has also applied to join the 2007 Lugano Convention in its own right; a decision on its application is awaited.

8.5 Are there any specific difficulties (whether as a matter of law or practice) in litigating, or seeking to enforce judgments or awards, against government authorities or the state?

Neither the UK government nor UK public bodies are immune to litigation in the UK. Both frequently appear as defendants in UK litigation and are often held to account by the national courts.

8.6 Are there examples where foreign investors in the renewable energy sector have successfully obtained domestic judgments or arbitral awards seated in your jurisdiction against government authorities or the state?

Various judicial review proceedings have been brought against the government to challenge decisions it has made in relation to renewable energy policy and specific projects. Whilst we have not seen examples of foreign investors successfully utilising this procedure to reverse a government decision, following the commencement of legal action against the Secretary of State for BEIS by Banks Renewable Limited, the UK government announced a policy U-turn that would lift its ban of onshore wind projects from government-backed contracts support, which resulted in Banks Renewable Limited withdrawing its legal challenge. Companies have also succeeded in challenging decisions made by Ofgem regarding renewable energy subsidy schemes (see question 9.1 below).

9 Updates and Recent Developments

9.1 Please provide a summary of any recent cases, new legislation and regulations, policy announcements, trends and developments in renewables in your jurisdiction.

The government published its Ten Point Plan and the Energy White Paper in Q4 2020 and the Smart Systems and Flexibility Plan in July 2021, setting out its plan for the energy transition, including developing a smart system framework to build a flexible grid and allocating further funding for offshore wind, hydrogen and other renewables investments – all to drive its net zero energy system. The Ten Point Plan and the Energy White Paper are discussed in detail in question 1.3.

The case of *R (on the application of Gravis Solar 1 Ltd) v Gas and Electricity Markets Authority* [2021] EWHC 490 concerned Ofgem's decision to withdraw a company's RO accreditation. The company in question had provided inaccurate information to obtain the accreditation. The English High Court ruled that, in the circumstances, Ofgem had acted proportionately in deciding to withdraw the accreditation.

In *Havant Biogas Ltd & Ors v Gas & Electricity Markets Authority* [2021] EWHC 84, the claimants succeeded in their judicial review claim to quash a decision by Ofgem not to register them as part of a subsidy scheme promoting renewable energy.

Renewable energy made up 42.9% of the UK's electricity generation in 2020, breaking all previous UK annual records. We expect this record to be broken repeatedly in the short term as the UK government continues to promote investment in renewable energy technology. We also expect that electric vehicles, residential solar and battery storage will continue to gain prominence in the UK as a medium for the ongoing transformation of the energy sector.

Oliver Irwin advises lenders and sponsors on the development and financing of cross-border projects across a broad range of industries, many of which are the first of its kind in their industry. He has significant experience advising on multi-sourced project financings involving export credit agencies, multilaterals and development finance institutions. He is also a regular speaker at industry conferences.
IFLR1000 has identified Oliver as a "Rising Star" or "Highly Regarded" every year since 2013, and he has been ranked by *Chambers UK* each year since 2012. He is ranked as a "Next Generation Partner" for Projects, Energy & Natural Resources: Infrastructure in *The Legal 500 United Kingdom* (2018–2021) and was nominated by in-house counsel and peers to appear in *Euromoney*'s 2015, 2016 and 2017 "Rising Stars" Expert Guides. Oliver was recognised by *Law360* as a 2019 MVP for Project Finance and serves on *Law360*'s 2020 Project Finance Editorial Advisory Board (2020–2021).

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Nicholas Neuberger is a corporate lawyer with a particular focus on international transactional matters within the energy sector. He has advised on a wide range of cross-border acquisitions in both the public and private sectors, having worked on deals and projects in more than 25 jurisdictions.
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Robert Meade acts on international disputes in the energy sector, as well as disputes related to infrastructure, construction and international trade. His experience includes representing clients on construction disputes concerning renewable power projects and in relation to issues arising under CfDs. He has also acted on UK public procurement disputes and related judicial review challenges. Robert was recognised as a "Rising Star" in *The Legal 500*'s 2019 International Arbitration Powerlist: United Kingdom and described as "*one of the most promising young counsel on the London scene*".

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1 Overview of the Renewable Energy Sector

1.1 What is the basis of renewable energy policy and regulation in your jurisdiction and is there a statutory definition of 'renewable energy', 'clean energy' or equivalent terminology?

The basis for renewable energy policy and regulation is both on a federal level and a state level. There is no uniform federal statutory definition of 'renewable energy'; however, at the state level, there are various definitions for specific types of 'renewable energy' technology.

1.2 Describe the main participants in the renewable energy sector and the roles which they each perform.

The main participants in the renewable energy sector are:

- Sponsor of the project – the developer of the project.
- Banks – they provide debt to the Sponsor for the development of the project.
- Tax Equity Investor – an investor in the project that partners with the Sponsor by providing tax equity financing to the project.
- The Independent Engineer – they provide consulting.
- Operations and Maintenance Service Provider.

1.3 Describe the government's role in the ownership and development of renewable energy and any policy commitments towards renewable energy, including applicable renewable energy targets.

There are specific federal mandates and specific state mandates that differ based on the technology.

2 Renewable Energy Market

2.1 Describe the market for renewable energy in your jurisdiction. What are the main types of renewable energy deployed and what are the trends in terms of technology preference and size of facility?

Generally, the main types of renewable energy are wind, solar, energy storage, electric vehicles and the surrounding infrastructure together with hydrogen.

2.2 What role does the energy transition have in the level of commitment to, and investment in, renewables? What are the main drivers for change?

There is a huge commitment to the energy transition. The main drivers are the changes in shareholders' and investors' attitudes towards the energy transition. The COVID-19 pandemic, along with the strong climate changes – wildfires, hurricanes and flooding – made such changes acute.

2.3 What role, if any, has civil society played in the promotion of renewable energy?

Shareholders and consumers are accelerating the growth of renewable energy.

2.4 What is the legal and regulatory framework for the generation, transmission and distribution of renewable energy?

At the federal level, the Federal Energy Regulatory Commission (FERC) regulates the transmission and distribution of energy. There are also regulatory and legal frameworks at the state level. The federal and state frameworks are not always consistent.

2.5 What are the main challenges that limit investment in, and development of, renewable energy projects?

The main challenge is financing a viable project.

2.6 How are large utility-scale renewable power projects typically tendered?

Utility-scale renewable power projects are typically tendered either by auction or bilaterally.

2.7 To what extent is your jurisdiction's energy demand met through domestic renewable power generation?

In 2019, renewable energy sources accounted for approximately 11% of total U.S. energy consumption and about 17% of electricity generation, according to preliminary data from the U.S. Energy Information Administration.

3 Sale of Renewable Energy and Financial Incentives

3.1 What is the legal and regulatory framework for the sale of utility-scale renewable power?

The legal and regulatory framework for the sale of utility-scale renewable power is primarily driven by FERC and specific state regulatory laws.

3.2 Are there financial or regulatory incentives available to promote investment in/sale of utility-scale renewable power?

Yes. At the federal level, tax credits are available as incentives. At the state level, there are various state tax credits, property exemptions and other state-specific credits.

3.3 What are the main sources of financing for the development of utility-scale renewable power projects?

The main sources of financing are project financing, debt and tax credits.

3.4 What is the legal and regulatory framework applicable to distributed/C&I renewable energy?

The legal and regulatory framework for the sale of distributed/C&I renewable power is primarily driven by FERC and state-specific regulatory laws.

3.5 Are there financial or regulatory incentives available to promote investment in distributed/C&I renewable energy facilities?

Please see question 3.2 above.

3.6 What are the main sources of financing for the development of distributed/C&I renewable energy facilities?

Usually, the main sources of financing for the development of distributed/C&I renewable energy facilities are balance sheet financing, strategic partnerships, tax credits and state-specific credits.

3.7 What is the legal and regulatory framework that applies for clean energy certificates/environmental attributes from renewable energy projects?

These are state-driven.

3.8 Are there financial or regulatory incentives or mechanisms in place to promote the purchase of renewable energy by the private sector?

The only incentives are the tax credits and environmental, social, and governance/Impact Principles.

4 Consents and Permits

4.1 What are the primary consents and permits required to construct, commission and operate utility-scale renewable energy facilities?

Permitting is state-specific.

4.2 What are the primary consents and permits required to construct, commission and operate distributed/C&I renewable energy facilities?

While permitting is state-specific, major consents include consent for the Power Purchase Agreement, lease estoppels (for site control) and/or consent for the Energy Performance Certificate and/or Interconnection Agreement.

4.3 What are the requirements for renewable energy facilities to be connected to and access the transmission network(s)?

Renewable energy facilities must have FERC approval and/or specific state regulatory approval, or an exemption.

4.4 What are the requirements for renewable energy facilities to be connected to and access the distribution network(s)?

Please see question 4.3.

4.5 Are microgrids able to operate? If so, what is the legislative basis and are there any financial or regulatory incentives available to promote investment in microgrids?

Yes – these are state-specific.

4.6 Are there health, safety and environment laws/regulations which should be considered in relation to specific types of renewable energy or which may limit the deployment of specific types of renewable energy?

Health and safety is paramount in the U.S. and we have many laws and regulations designed to protect consumers, workers and end users of renewable energy. However, there are no specific laws designed just for the renewable energy industry. Regardless, the greatest specific hazards in renewable energy are to its workers – mainly fall hazards and electrical currents.

Between geothermal pumps and wind turbines, renewable energy features unique equipment and tools. For example, solar energy requires an array of photovoltaic modules to source power; thus, workers must know how to install them. This task requires specific knowledge and experience in order to avoid mishaps. Anyone who misuses machinery can expose themselves to safety risks. Otherwise, workers can fall victim to thermal burns, toxic chemicals and more.

In addition, those in the renewable energy sector are as prone to falls as workers who deal with fossil fuels. Wind power, for example, has the most job growth in clean energy alongside solar power. However, wind may also be the most dangerous sector regarding falls. Many wind turbines start at 250 feet tall, which means people who work on them must be as cautious as possible. Consequently, fall arrest devices are crucial.

As the clean energy industry develops, renewable energy companies must create safety measures. Authorities such as the Occupational Safety and Health Administration offer helpful and actionable procedures for all energy workers, which is a solid place to start.

5 Storage

5.1 What is the legal and regulatory framework which applies to energy storage and specifically the storage of renewable energy?

Please see question 4.3.

5.2 Are there any financial or regulatory incentives available to promote the storage of renewable energy?

Please see question 3.8.

6 Foreign Investment and International Obligations

6.1 Are there any special requirements or limitations on foreign investors investing in renewable energy projects?

Yes – depending on the location, the foreign investor's previous energy transactions in the U.S. and the specific country of the foreign investor, the Committee on Foreign Investment in the United States (CFIUS) may limit foreign investment and must give its approval.

6.2 Are there any currency exchange restrictions or restrictions on the transfer of funds derived from investment in renewable energy projects?

Yes. There are restrictions by various laws concerning money laundering, which are not limited to renewable energy projects.

6.3 Are there any employment limitations or requirements which may impact on foreign investment in renewable energy projects?

Not for employment; however, CFIUS may impact foreign investments.

6.4 Are there any limitations or requirements related to equipment and materials which may impact on foreign investment in renewable energy projects?

Yes – President Trump issued an Executive Order that impacts equipment imported to the U.S. that was manufactured outside of the U.S.

7 Competition and Antitrust

7.1 Which governmental authority or regulator is responsible for the regulation of competition and antitrust in the renewable energy sector?

The Hart–Scott–Rodino (HSR) Antitrust Improvements Act regulates competition and antitrust.

7.2 What power or authority does the relevant governmental authority or regulator have to prohibit or take action in relation to anti-competitive practices?

The authorities can deny approval.

7.3 What are the key criteria applied by the relevant governmental authority or regulator to determine whether a practice is anti-competitive?

Unless an exemption applies, pre-merger HSR notification is required if the transaction meets three tests: (1) the Commerce Test; (2) the Size of Transaction Test; and (3) the Size of Person Test.

8 Dispute Resolution

8.1 Provide a short summary of the dispute resolution framework (statutory or contractual) that typically applies in the renewable energy sector, including procedures applying in the context of disputes between any applicable government authority/regulator and the private sector.

Usually, the process starts with an internal dispute resolution procedure.

8.2 Are alternative dispute resolution or tiered dispute resolution clauses common in the renewable energy sector?

Disputes are commonly resolved either by litigation or arbitration.

8.3 What interim or emergency relief can the courts grant?

The courts can grant Specific Performance.

8.4 Is your jurisdiction a party to and has it ratified the New York Convention on the Recognition and Enforcement of Foreign Arbitral Awards and/or the Convention on the Settlement of Investment Disputes between States and Nationals of Other States and/or any significant regional treaty for the recognition and enforcement of judgments and/or arbitral awards?

Yes, the U.S. has ratified both conventions.

8.5 Are there any specific difficulties (whether as a matter of law or practice) in litigating, or seeking to enforce judgments or awards, against government authorities or the state?

The difficulties depend on whether the cause of action is federal- or state-specific.

8.6 Are there examples where foreign investors in the renewable energy sector have successfully obtained domestic judgments or arbitral awards seated in your jurisdiction against government authorities or the state?

It is possible, but fairly rare.

9 Updates and Recent Developments

9.1 Please provide a summary of any recent cases, new legislation and regulations, policy announcements, trends and developments in renewables in your jurisdiction.

Recently, renewable energy outpaced coal by supplying 23% of U.S. power generation. We have seen declining costs and increased capacity for renewable energy and increased capacity for energy storage.

Mona E. Dajani focuses her global practice on project finance, corporate finance, mergers & acquisitions, sustainable finance, portfolio acquisitions, tax equity, construction and/or restructuring for government and private clients involving energy and infrastructure projects. In her over 20 years of practice, she has led numerous financing and acquisition/disposition and project development transactions involving solar, wind, hydrogen, hydroelectric, geothermal, biomass, waste to energy and Net Zero disruptive technology, such as connectivity, autonomous driving and e-mobility, as well as gasification, transmission lines, and oil and gas pipelines. She has substantial experience with respect to syndicated loan and debt capital markets transactions, sustainable finance, ESG, syndicated commercial bank debt, commercial paper programmes, and arranging capital for new and established energy and infrastructure companies. She has represented a wide variety of commercial and public institutions, sponsors, utilities, financial institutions, underwriters, energy and clean technology companies, private equity funds, investment banks and multilateral agencies in transactions throughout the Americas, Europe, Asia and the Middle East.

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Wintertons

Nikita Madya

1 Overview of the Renewable Energy Sector

1.1 What is the basis of renewable energy policy and regulation in your jurisdiction and is there a statutory definition of 'renewable energy', 'clean energy' or equivalent terminology?

Renewable energy policy and regulation is set out in the National Energy Policy, 2012 (NEP) and the National Renewable Energy Policy, 2019 (NREP). The NEP recognised the importance of developing a comprehensive renewable energy policy in order to enhance the contribution of renewable energy to the overall energy supply in Zimbabwe. The NREP sets out in detail the ambitious targets of the government in the development of renewable energy and its contribution to the overall electricity supply in Zimbabwe. The NREP defines "renewable energy" as referring to "small hydro (equal to or less than 30MW), solar, wind, geothermal, biofuels and biomass and other such clean energy sources approved by the Ministry responsible for Energy in Zimbabwe". The definition leaves room for the Ministry of Energy to designate other energy sources as renewable energy at some future date. The Energy Regulatory Authority Act (Chapter 13:23) (ZERA Act), which establishes the Zimbabwe Energy Regulatory Authority (ZERA), has a statutory definition of renewable energy. Renewable energy is defined in the Act as "energy generated from natural resources such as sunlight, wind, rain, water, tides, geothermal heat, plants and biomass which are naturally replenished, and "renewable energy source" shall be construed accordingly". The definition is comprehensive and seeks to identify renewable energy by having reference to the nature of its sources and the key characteristic of it being capable of replenishment. This naturally excludes from its scope energy derived from coal, for instance.

There are other regulations that have their own variant of what renewable energy is. For instance, the Electricity Solar Water Heating Regulations, 2019 (SI 235 of 2019) defines renewable energy as "all non-fossil sources including, biomass, geothermal, small hydro power, solar, wind, sewage treatment and plant gas". There is no doubt that the various definitions all have common elements; namely, that the source of the energy is such that it cannot be depleted through use and is an alternative to the fossil fuel-based energy forms.

1.2 Describe the main participants in the renewable energy sector and the roles which they each perform.

The major participants are the Ministry of Energy and Power Development (MOEPD), ZERA, the public utility Zimbabwe Power Company (ZPC), Zimbabwe Electricity Transmission and Distribution Company (Private) Limited (ZETDC), a number of Independent Power Producers (IPPs), Zimbabwe National Water Authority (ZINWA), and the Zambezi River Authority (ZRA). The MOEPD has overall responsibility for the energy sector in Zimbabwe. It is responsible for policy formulation and implementation, an oversight role over the government-owned utilities (ZETDC and ZPC), ZRA jointly with Zambia and the activities of ZERA. It is also responsible for regional and international cooperation on renewable energy issues. ZETDC and ZPC are wholly owned by ZESA Holdings (Private) Limited, which in turn is wholly owned by the government. ZPC owns the electricity generation assets and is responsible for electricity generation. It also owns the Kariba Hydro power stations, which presently generate approximately 50% of the electricity generated in Zimbabwe. ZETDC is the utility that owns the transmission and distribution infrastructure in Zimbabwe. All renewable energy generated, if not off-grid, is transmitted through ZETDC's transmission and distribution infrastructure. ZRA is the authority jointly set up by Zambia and Zimbabwe to manage the Kariba Dam water source and the Zambezi River which is jointly controlled by the two countries. It determines how much water can be made available for power generation to ZPC and its Zambian counterpart.

ZINWA controls all inland dams and water sources and is responsible for giving the rights to use water in such sources for any purpose including the generation of power.

Various IPPs are also a significant group in the renewable energy space. These are licensed to generate electricity and the majority operate within the renewable energy space. They are issued with generation licences which entitle them to generate electricity, either for their own use or for sale to ZETDC or other third parties. It is anticipated in the NREP that the IPPs will play a significant role in achieving the ambitious targets set for renewable energy.

The Rural Electrification Fund (REF) was established in terms of the Rural Electrification Fund Act (Chapter 13:20). The Rural Electrification Agency (REA) was established under this Act. Among other things, REA is responsible for ensuring that rural areas, with an electricity penetration rate of *circa* 13%, have access to electricity, especially through the deployment of off-grid solar solutions. REA is also responsible for developing the grid infrastructure in rural areas to ensure that electricity reaches even the most remote parts of the country.

Another significant player in the renewable energy sector is the Environmental Management Agency (EMA) established in terms of the Environmental Management Act (Chapter 20:27) (EMA Act). Its role is to ensure that renewable energy projects, among other responsibilities, are carried out in a manner that ensures that the environment is protected and any adverse impact on the environment is reduced.

1.3 Describe the government's role in the ownership and development of renewable energy and any policy commitments towards renewable energy, including applicable renewable energy targets.

The government, through the MOEPD, is responsible for policy formulation and ensuring that the policy is implemented by the organisations responsible for doing so. The government is also responsible for ensuring that the necessary legislation to give effect to the policies put in place is enacted.

As part of its policy formulation role, the government formulated the NEP in 2012 and then the NREP in 2019. The NREP took into account other policy measures and commitments of the government to the international community on the need to reduce greenhouse gases. The NREP was based on the Nationally Determined Contributions (NDCs) interventions that the government committed itself to and submitted to the United Nations Framework Convention on Climate Change (UNFCCC). The NDCs recognised the energy sector as a major greenhouse gas contributor, hence the need to develop a policy that ensures that the energy sector reduces its greenhouse gas emissions by focusing on renewable energy.

The NREP set the target of achieving an installed renewable capacity of 1,100MW or 16.5% of the overall electricity supply in Zimbabwe, whichever is the greater, by 2025. By 2030, the target is that the installed renewable energy capacity should be 2,100MW or 26.5% of the overall electricity supply. These targets exclude the large hydro power stations of more than 30MW. As indicated above, the NREP includes small hydro power stations of less than 30MW in the definition of renewables. Accordingly, any hydro power project that is more than 30MW will not be considered in determining whether the targets have been met. Most of the generation capacity to achieve these targets will therefore be anticipated to come from the IPPs. There is nothing, however, that stops ZPC from establishing its own renewable energy plants.

The NREP also aims to have installed 250,000 solar geysers by the year 2030 in new and old buildings, to increase the use of institutional and domestic biogas digesters, to deploy the use of solar mini grids, off-grid solar solutions and solar water pumping solutions, and generally to increase the use of renewable technologies. The policy aim is to increase the electricity penetration rates in both rural and urban areas.

The government has also undertaken to increase the purchase of renewable energy generated electricity by the government-owned utilities in order to encourage further investments.

Investment incentives are also promised to investors in renewable energy to ensure that investment in renewable energy is profitable, in order to attract more funding.

2 Renewable Energy Market

2.1 Describe the market for renewable energy in your jurisdiction. What are the main types of renewable energy deployed and what are the trends in terms of technology preference and size of facility?

At present, the major hydro power station at Kariba, which is owned by ZPC, supplies over 50% of the total power generated in Zimbabwe. Its output is, however, affected by weather patterns. A poor rain season has the potential to reduce the power generated from the hydro power station, as was the case in 2018 and 2019.

IPPs occupy the remainder of the renewable energy market. The combined output from the IPPs is at present only 130MW. These IPPs include Kupinga Renewable Energy, Green Fuel (bagasse), Distributed Power Africa (solar), Centragrid (solar) and UK-based PGI Group Limited renewable energy projects run by Nyangani Renewable Energy (Private) Limited, which include Riverside Solar Power Station (Pvt) Ltd (2.5MW) (solar), Nyamingura Mini Hydro Station (1.1MW) (hydro), Dura Power Station (2.2MW) (hydro), Pungwe A Power Station (2.725MW) (hydro), Pungwe B Power Station (15MW) (hydro), Pungwe C Power Station (3.75MW) (hydro) and Hauna Power Station (2.3MW) (hydro). There are other companies that produce power mainly for their own consumption. These include Nottingham Estate (1.5MW), Hippo Valley Estates (33MW) (bagasse), Triangle Estates (45MW) (bagasse) and Border Timbers (wood waste). There is also a trend for most mining companies to default to solar energy sources by constructing their own off-grid solar plants. This has been necessitated by the need to bridge the gap between their power needs and the supply from the utilities.

2.2 What role does the energy transition have in the level of commitment to, and investment in, renewables? What are the main drivers for change?

The energy transition from fossil-based fuels driven by the need to reduce carbon emissions is central to the government's commitment to policy changes in the energy sector towards renewables. The government of Zimbabwe's NDCs submitted to the UNFCCC recognise the commitment to the decarbonisation of the energy sector. The commitment of the government as set out in the NREP is to encourage investments in renewable energy, provide incentives to the investors in the sector, encourage the public utility to support the initiatives by procuring power from renewables, give priority dispatch from renewable energy generators and support off-grid renewable projects in rural areas. While the commitment expressed in the NREP has ambitious targets of getting at least 16.5% of all electricity supplied from renewables by 2025 and 26.5% by 2030, the actual investment is expected to be driven by the private sector. Faced with acute power shortages, the government encouraged the use of solar technologies and removed import duties on solar products.

The government at present has limited resources and it is unlikely to invest on its own. It is hoped, however, that sufficient incentives will be put in place in order to make it worthwhile for private investors to put money into such projects. It is also expected that as and when the Batoka hydrological project is commissioned, an additional 800MW of power will be added to the national grid and will provide an incentive to the retirement of the old coal-fired power plants at Hwange.

2.3 What role, if any, has civil society played in the promotion of renewable energy?

Civil society organisations have played a part in promoting the renewable energy agenda. Organisations involved in the protection of the environment and the climate change agenda have been at the forefront of pushing for the adoption of renewable energy. The message became easy to promote in the face of acute power shortages, as most businesses and households were forced to adopt solar technologies as a way of dealing with the power shortages.

2.4 What is the legal and regulatory framework for the generation, transmission and distribution of renewable energy?

The legal and regulatory framework for the generation, transmission and distribution of energy has not yet been made specific

to renewable energy. The process of acquiring the generation licence is still largely the same as that for fossil fuel-based energy generators. The principal law governing the construction and operation of generation facilities is section 42 of the Electricity Act (Chapter 13:19), as well as the Electricity Licensing Regulations, 2008 as amended by Statutory Instrument (SI) 55/2015 and SI 101/2021.

Under section 42(1) of the Electricity Act, a generation licence authorises the licensee to construct, own, operate and maintain a generation station for the purposes of the generation and supply of electricity, subject to any terms and conditions imposed by ZERA and without contravention of the other provisions in the Electricity Act.

In terms of section 42(2) of the Electricity Act, the holder of a generation licence may supply electricity to any transmission, distribution or supply licensee who purchases electricity for resale and, with the approval of the Commission, to any one or more consumers, subject to the terms and conditions imposed by ZERA and without prejudice to any other provisions in the Electricity Act.

In terms of section 11 of the Licensing Regulations, anyone who operates an electric generator (including standalone generators) that is capable of generating, distributing or transmitting in excess of 100 kW must obtain a licence under section 40 of the Electricity Act, unless they can demonstrate to ZERA that the generator in question is for the sole use of their household or business. The notification must occur within 60 days of acquiring the generator. ZERA may order and conduct an inspection and, if it determines that the generator is for personal use, will issue an indefinite permit with conditions to comply with public safety standards and to permit further inspection by ZERA.

The principal laws are as follows:

- the Electricity Act (Chapter 13:19);
- the ZERA Act;
- the Electricity Licensing Regulations; and
- the SI 55 of 2015 Electricity Licensing Regulations Amendment.

The Electricity (Net Metering) Regulations, 2018 permit consumers with excess power generated from renewable energy to feed in the excess power into the grid. The excess power will then be set-off against the power consumed by the customer from the utility during the period when the customer's power generation is below its demand.

2.5 What are the main challenges that limit investment in, and development of, renewable energy projects?

The major challenges to the investment in renewable energy have been the lack of clear and coherent policies that encourage investments in Zimbabwe generally. Investments in generation plants are long-term decisions and require policies that guarantee to the investors that their investments are secure and that the utilities will honour their obligations, and if that fails, the government will step in. This has been lacking in Zimbabwe. The government itself has defaulted on many of its obligations to international institutions which has meant that there is no comfort in any such guarantees. Zimbabwe is generally regarded as a high-risk investment destination. This has also meant that borrowing for projects in Zimbabwe will command a high premium for those investors willing to take the risk. This has meant that many of the licensed IPPs have not been able to attract investors for their projects. The never-ending changes in the policies, particularly relating to exchange control, has made it difficult for investors to keep pace and develop proper models for funding. Many IPPs are now threatened with cancellation of their licences as the investment climate continually changes and parties are forced to go back to the drawing board to remap their plans in the face of policy changes.

Another major limitation is the acute shortage of foreign currency in Zimbabwe. There is no guarantee for most investors that they will be able to repatriate their profits and capital from Zimbabwe due to foreign currency shortages. The policy inconsistencies in this area have also meant that it is impossible to plan with any degree of certainty.

While limited funding could be sourced from local funders such as pension funds, the failure to convert such funding into foreign currency to import much of the equipment required has resulted in this being a viable option.

2.6 How are large utility-scale renewable power projects typically tendered?

The present regulatory environment does not have specific tendering procedures for energy projects. What has typically been happening is that an entity, after being issued with a generation licence, will approach ZETDC to negotiate a power purchase agreement (PPA). Due to shortages of power, ZETDC has invariably accommodated such unsolicited offers. Tendering has, however, been undertaken for contracts to construct the power plants for ZPC as the power generation unit of ZESA.

The Public Procurement and Disposal of Public Assets Act (Chapter 22:23) (PPDPA Act) regulates the tendering process in Zimbabwe. The utility concerned, through its procurement unit, would prepare the tender documents and invite bids. After the bids are received and adjudicated, the successful bidder would be announced. The unsuccessful bidders are given the right to challenge such awards in the event that it is believed that the process was not carried out properly.

2.7 To what extent is your jurisdiction's energy demand met through domestic renewable power generation?

Renewable energy, including large-scale hydro projects, currently contributes at least 68% of the energy requirements. This is largely due to the Kariba Power Station now operating at near-full capacity as the Kariba Dam received significant inflows this season. There is a power deficit in Zimbabwe as the thermals currently contribute around 378MW. The balance is met through imports from South Africa and Mozambique and demand-side management through load shedding. The situation is made worse by the fact that the thermal power is generated from plants that are past their design life and are beset with constant breakdowns.

3 Sale of Renewable Energy and Financial Incentives

3.1 What is the legal and regulatory framework for the sale of utility-scale renewable power?

The Electricity Act regulates the sale of power in Zimbabwe. The power is sold to ZETDC which also owns and operates the grid transmission and distribution system in Zimbabwe. A generator of renewable power would negotiate a PPA with ZETDC in advance of the construction of the generation facility. The PPA would then be approved by ZERA provided its terms and the agreed tariff meet the requirements of ZERA.

Generally, ZERA would be looking at ensuring that the generator receives a reasonable return on its investment and ZETDC receives the power at a tariff that would ensure that it can be sold to the consumer at a reasonable tariff.

3.2 Are there financial or regulatory incentives available to promote investment in/sale of utility-scale renewable power?

Utility-scale projects are generally accorded National Project Status which will enable them to import much of the equipment duty-free. Due to high duties, an exemption from the payment of the duties can make a huge difference to the profitability of a project. Power generation projects are also exempted from income tax for the first five years of commencing their operations. The income would be taxable at a lower rate of 15% for the next five years thereafter compared to the general tax rate of other companies at 25%.

3.3 What are the main sources of financing for the development of utility-scale renewable power projects?

Utility-scale renewable power projects are largely funded from borrowing from international banks and resources provided by the project companies. The NREP proposes a number of schemes aimed at according specific projects Prescribed Asset Status to enable pension funds and insurance companies to invest in such projects.

3.4 What is the legal and regulatory framework applicable to distributed/C&I renewable energy?

The Electricity Act and the Electricity Licensing Regulations constitute the legal and regulatory framework for distributed/C&I renewable energy. The developer would be required to apply for the generation licence and will typically be issued with a generation licence for captive consumption of a particular buyer. The practice, however, is to have an open licence that permits the developer to sell to more than one customer and to sell the excess power to the power utility. The same process of applying for the licence as applies in non-distributed/C&I renewable energy would also apply. ZERA retains the power and authority to approve the prices at which the energy is sold.

3.5 Are there financial or regulatory incentives available to promote investment in distributed/C&I renewable energy facilities?

There are no specific financial or regulatory incentives targeted at distributed/C&I investment. There is power deficit in the market. The drive towards distributed/C&I is motivated by the need of corporate and industrial companies for guaranteed power and to plug the supply gap from the power utility. The import of the equipment enjoys the same incentives as other imported equipment, particularly for solar power.

3.6 What are the main sources of financing for the development of distributed/C&I renewable energy facilities?

This is usually funded by developers using their own resources, borrowings from external parties and, in some cases, resources from local pension and insurance companies.

3.7 What is the legal and regulatory framework that applies for clean energy certificates/environmental attributes from renewable energy projects?

Clean energy certificates are not yet provided for in our jurisdiction. The transition to renewable energy is still under way in a country that still experiences power shortages. Sadly, the NREP did not deal with the issuance of clean energy certificates.

3.8 Are there financial or regulatory incentives or mechanisms in place to promote the purchase of renewable energy by the private sector?

At present, the government encourages the deployment of solar technologies by offering duty-free imports in respect of solar products. This is to make them affordable and enable their rapid deployment. As indicated above, due to the shortage of power in general, the focus appears to be on ensuring that adequate power is made available first.

4 Consents and Permits

4.1 What are the primary consents and permits required to construct, commission and operate utility-scale renewable energy facilities?

The licensing process required for renewables in order for one to construct, commission and operate utility-scale renewable energy facilities is similar to the process for non-renewables, with minor variations in relation to the specific requirements for the energy type proposed. Essentially, one must obtain a generation licence issued by ZERA in terms of section 42 of the Electricity Act as read together with the ZERA Act and the Electricity Licensing Regulations. In order for ZERA to consider the application for a generation licence, one would need to also have satisfied other requirements. These include: the requirements of the EMA Act by securing the Environmental Impact Assessment Certificate; a Grid Impact Assessment Study would need to have been commissioned providing details of the connection that can be permitted to the national grid; land lease/ownership or land use permit; and water extraction permit.

4.2 What are the primary consents and permits required to construct, commission and operate distributed/C&I renewable energy facilities?

Distributed/C&I renewable energy facilities require the same consents and permits as utility-scale renewable facilities. One requires a generation licence issued by ZERA. In terms of section 40 of the Electricity Act as read together with section 11 of the Licensing Regulations, anyone who operates an electric generator (including standalone generators) that is capable of generating, distributing or transmitting in excess of 100 kW must obtain a licence under section 40 of the Electricity Act. The practice is to acquire the licence in the name of the C&I entity while a third party provides the funding to set up the facility.

4.3 What are the requirements for renewable energy facilities to be connected to and access the transmission network(s)?

ZETDC currently owns and controls the national transmission network. Any generation facility intending to connect to

the network would be required to first commission ZETDC to undertake a Grid Impact Assessment Study that will determine the impact of the intended connection to the national grid and what can be done to ensure the continued integrity of the national network. ZETDC determines the maximum power connection that it can offer from a particular location and may determine that the generator must construct a transmission line to the nearest connection point that may offer a stable connection as required in terms of the Grid Code, 2017. Once the connection parameters are agreed, the generator and ZETDC will then sign a Transmission Connection Agreement.

4.4 What are the requirements for renewable energy facilities to be connected to and access the distribution network(s)?

The requirements to be connected to and to access the distribution networks are the same as those required for one to access the transmission system. ZETDC owns the distribution network. The parties would be required to comply with the technical requirements in the Grid Code.

4.5 Are microgrids able to operate? If so, what is the legislative basis and are there any financial or regulatory incentives available to promote investment in microgrids?

Microgrids are not specifically mentioned in the Electricity Act. The legislative framework exists for one to hold generation, transmission and distribution licences and to be able to operate a microgrid. The focus in Zimbabwe has been to ensure that electricity is available due to the present electricity deficit that exists in the country. The NREP seeks to promote investments in renewable energy, and it is hoped that specific incentives will be put in place for the operation of microgrids, especially in remote areas where the national transmission infrastructure is not yet available. At present, only ZETDC holds the right to transmit and distribute electricity, as it is the sole owner of the assets for distribution, transmission and supply functions.

4.6 Are there health, safety and environment laws/regulations which should be considered in relation to specific types of renewable energy or which may limit the deployment of specific types of renewable energy?

The EMA Act provides for the sustainable management of natural resources and for the protection of the environment in accordance with global commitments. Energy is a prescribed activity under Schedule 1 of the Act; thus, it is mandatory for environmental impact assessments of all energy projects to be undertaken, including mitigation measures. An Environmental Impact Assessment Certificate for the project would need to be issued before the project can commence. If EMA is not satisfied that the renewable energy cannot be constructed in a manner that ensures that the environmental concerns are addressed, it cannot be approved.

5 Storage

5.1 What is the legal and regulatory framework which applies to energy storage and specifically the storage of renewable energy?

Please see question 4.6 above.

5.2 Are there any financial or regulatory incentives available to promote the storage of renewable energy?

There are no specific financial or regulatory incentives in place presently. With projects of this nature, it is possible, in line with the policy directives in the NREP, for one to apply for National Project Status. The MOEPD should be able to support such an application. Once such a project is granted National Project Status, import duties on the capital goods would be waived in terms of sections 140 and 141 of the Customs and Excise (General) Regulations. It would also be possible to negotiate specific waivers of certain taxes and other government levies.

6 Foreign Investment and International Obligations

6.1 Are there any special requirements or limitations on foreign investors investing in renewable energy projects?

There are no restrictions on foreign investors investing in renewable energy. The Zimbabwe Investment and Development Agency Act (Chapter 14:37) (ZIDA Act) empowers the Zimbabwe Investment and Development Agency (ZIDA) to issue investment licences to both local and international investors in a non-discriminatory manner. Specific sectors have been reserved for investment by locals only, due to the Indigenisation and Economic Empowerment Act; renewable energy projects are not part of these sectors.

6.2 Are there any currency exchange restrictions or restrictions on the transfer of funds derived from investment in renewable energy projects?

The ZIDA Act offers guarantees and assurances that, in respect of all investments for which licences have been secured under the Act, the investors may, without restriction or delay in freely convertible currency, transfer funds into and out of Zimbabwe in respect of contributions to capital, such as:

- principal and additional funds to maintain, develop or increase the investment;
- proceeds, profits from the asset, dividends, royalties, patent fees, licence fees, technical assistance and management fees, shares and other current income resulting from any investment under this Act;
- proceeds from the sale or liquidation of the whole or part of an investment or property owned by an investment;
- payments made under a contract entered into by the investor or investment, including payments made pursuant to a loan agreement;
- payments resulting from any settlement of investment disputes pursuant; and
- earnings and other remuneration of foreign personnel legally employed in Zimbabwe in connection with an investment subject to any laws in force at the time.

In cases of serious balance-of-payments or external financial difficulties, the government may temporarily restrict payments or transfers related to investments, provided that such restrictions are imposed on a non-discriminatory and good faith basis.

6.3 Are there any employment limitations or requirements which may impact on foreign investment in renewable energy projects?

The ZIDA Act permits an investor to appoint, regardless of their nationality, any qualified individual as a senior manager,

technical and operational expert or advisor with respect to the investment in accordance with the laws of Zimbabwe. Work permits would be required for such employees. Outside of the employees permitted in terms of the ZIDA Act, work permits are issued on the basis that the skills or expertise possessed by the person being employed are not available in Zimbabwe. There are certain fields which may have additional requirements in the field. One such example is the Engineering Council Act (Chapter 27:22). Furthermore, the by-laws prescribe that locals must be involved in the project as a condition of the issuance of the registration and the practising certificate to the foreign firm. This would, therefore, affect engineers involved in an Engineering, Procurement, and Construction (EPC) capacity. The Engineering Council would need to be satisfied that the skills being brought in are not available in Zimbabwe.

6.4 Are there any limitations or requirements related to equipment and materials which may impact on foreign investment in renewable energy projects?

Most of the equipment and materials for renewable projects are imported into Zimbabwe. They are required, therefore, to comply with the national standards. For this purpose, goods and materials with a value of more than USD1,000 are required to be subjected to a pre-shipment conformity assessment and to be issued with a Certificate of Conformity in terms of the Control of Goods Act Open General Import Licence (Standards Assessment) Notice, 2015 (SI 132 of 2015). If the pre-shipment is not carried out in the country of origin, it will be subject to such assessment prior to customs clearance at the port of entry and will be subject to a penalty equivalent to 15% of the cost, insurance, and freight (CIF) value of the goods. The Minister of Industry and Commerce may, on application, grant an exemption.

7 Competition and Antitrust

7.1 Which governmental authority or regulator is responsible for the regulation of competition and antitrust in the renewable energy sector?

The principal obligations to monitor competition and antitrust behaviour in the energy sector lie principally with ZERA, subject to the overall control of the Competition and Tariff Commission (CTC) established in terms of the Competition Act (Chapter 14:28).

7.2 What power or authority does the relevant governmental authority or regulator have to prohibit or take action in relation to anti-competitive practices?

Section 59(1) of the Electricity Act gives ZERA the ongoing responsibility to monitor whether electricity services are being provided competitively, to determine whether any electricity service in respect of which prices or tariffs are fixed by ZERA can be provided competitively, and to provide a report on these matters, at least annually, to the Minister.

Subject to Ministerial approval, ZERA may exempt a regulated service from price or tariff regulation and determine the time and circumstances in which this would be permissible.

ZERA has powers to restrict the introduction of competition in certain areas, or of certain licensees or customers, on either a temporary or permanent basis.

ZERA determines the preconditions and any transitional arrangements required in order for a regulated service to be offered competitively, which may include codes of conduct, rules relating to access to information, access to the electric system, and constraints against undue price discrimination in the offering of services.

ZERA also has the responsibility to monitor electricity undertakings and markets, and is entitled to require information from licensees, to undertake enquiries and hearings, and to establish or contract with an independent entity to provide monitoring services.

In terms of section 59(7) of the Electricity Act, ZERA is obliged to provide evidence to CTC of the presence or possible development of market power in the operation of the licensed undertakings or electricity markets.

ZERA has the ongoing responsibility to consider issues associated with the competitive provision of electricity services and the prevention or mitigation of market power in its decisions and orders regarding matters such as licence applications, the grant of licences, licence terms and conditions, the setting of prices and tariffs, and whether to approve a merger, acquisition or affiliation, among others.

In terms of section 59(8) of the Electricity Act, if ZERA determines that there is any problem related to the development or unfair exercise of market power, it may do the following, with the agreement of CTC:

- issue such cease and desist orders as may be required upon the licensee or licensees concerned;
- levy monetary penalties upon the licensee or licensees concerned; and
- refer the matter to CTC for investigation.

Once the issue is referred to CTC, it will have the power to investigate any restrictive practices. Where uncompetitive behaviour is noted, CTC has extensive powers to redress the situation, including giving orders and directives for such conduct to be terminated, refuse to approve the merger of any businesses, impose fines and take any such other action that it deems appropriate to bring an end to the conduct complained of.

7.3 What are the key criteria applied by the relevant governmental authority or regulator to determine whether a practice is anti-competitive?

Section 32(1) of the Competition Act sets out the factors to be considered by CTC in determining whether a restrictive practice, merger or monopoly situation is or will be contrary to the public interest. CTC is obliged to take into account everything it considers relevant in the circumstances, and shall have regard to the desirability of:

- maintaining and promoting effective competition between persons producing or distributing commodities and services in Zimbabwe;
- promoting the interests of consumers, purchasers and other users of commodities and services in Zimbabwe, in regard to the prices, quality and variety of such commodities and services; and
- promoting, through competition, the reduction of costs and the development of new techniques and new commodities, and of facilitating the entry of new competitors into existing markets.

In cases involving a person with substantial market control, a restrictive practice will be regarded as contrary to the public interest, unless:

- the restrictive practice is reasonably necessary, having regard to the character of the commodity or service to which it applies, to protect consumers or users of the commodity or service, or the general public, against injury or harm;

- the termination of the restrictive practice would deny to consumers or users of a commodity or service to which the restrictive practice applies other specific and substantial benefits or advantages enjoyed or likely to be enjoyed by them, whether by virtue of the restrictive practice itself or by virtue of any arrangement or operation resulting therefrom;
- the termination of the restrictive practice would likely have a serious and persistently adverse effect on the general level of unemployment in any area in which a substantial proportion of the business, trade or industry to which the restrictive practice relates is situated; and
- the restrictive practice does not directly or indirectly restrict or discourage competition to a material degree in any business, trade or industry and is not likely to do so.

There may also be other situations in which a restrictive practice will be regarded as contrary to the public interest.

8 Dispute Resolution

8.1 Provide a short summary of the dispute resolution framework (statutory or contractual) that typically applies in the renewable energy sector, including procedures applying in the context of disputes between any applicable government authority/regulator and the private sector.

Both the ZERA Act and the Electricity Act give ZERA the power to mediate and arbitrate disputes among and between licensees and consumers. Section 63 of the Electricity Act provides for the resolution of disputes between licensees. If the dispute is not resolved amicably, it will be referred to ZERA for a determination, with each party having the opportunity to make representations. Any party who is not happy with the decision would be entitled to appeal to the Administrative Court. In addition to the statutory processes, it is uncommon that in contractual relations between government entities, the agreement would provide for arbitration proceedings in Zimbabwe. These will be carried out in terms of the Arbitration Act (Chapter 7:15). Zimbabwe adopted (with amendments) the Model Law on International Commercial Arbitration adopted by the United Nations Commission on International Trade Law on 21 June 1985, to give effect to the Convention on the Recognition and Enforcement of Foreign Arbitral Awards adopted in New York on 10 June 1958. Accordingly, foreign investors are free to resort to international arbitration, and awards from such arbitration proceedings are recognised and enforced in Zimbabwe.

In disputes with the government of Zimbabwe, access to the High Court and the Constitutional Court is generally available.

8.2 Are alternative dispute resolution or tiered dispute resolution clauses common in the renewable energy sector?

Alternative dispute resolution clauses are common in contracts in the renewable energy sector. This largely depends on the preference of the parties. The custom is to adopt the practices that are common in other jurisdictions, as the EPC contractor, the supplier of plant and equipment, and the operations and maintenance (O&M) contractor are typically a foreign entity.

8.3 What interim or emergency relief can the courts grant?

The court may grant an interdict, which is an order either compelling an authority to do something (mandatory interdict) or prohibiting a certain act pending the adjudication of a dispute (prohibitory interdict). Another form of urgent relief that can be granted by a court is a spoliation order, which is an order directing the return of possession where one has been unlawfully deprived of peaceful and undisturbed possession of property, regardless of whether or not the property is theirs. The High Court can grant urgent relief for stay of execution pending an application for rescission of default judgment or where the property to be sold is a private dwelling and there is a reasonable payment proposal.

8.4 Is your jurisdiction a party to and has it ratified the New York Convention on the Recognition and Enforcement of Foreign Arbitral Awards and/or the Convention on the Settlement of Investment Disputes between States and Nationals of Other States and/or any significant regional treaty for the recognition and enforcement of judgments and/or arbitral awards?

Zimbabwe ratified the New York Convention on the Settlement of Investment Disputes between States and Nationals of Other States, which was incorporated into Zimbabwean law by the Arbitration (International Investment Disputes) Act (Chapter 7:03). This deals specifically with investment disputes. The Convention on the Recognition and Enforcement of Foreign Arbitral Awards requires courts of contracting states to give effect to private agreements to arbitrate and to recognise and enforce arbitration awards made in the contracting countries. In terms of Article 3 of the Convention, each contracting state shall recognise arbitral awards as binding and enforce them in accordance with the rules of procedure of the territory where the award is relied upon.

8.5 Are there any specific difficulties (whether as a matter of law or practice) in litigating, or seeking to enforce judgments or awards, against government authorities or the state?

Generally, the court process can be lengthy and frustrating. In enforcing judgments against the government, the State Liabilities Act prohibits the attachment of state assets. One will, therefore, not be able to obtain payment from the government through the normal execution process of attaching and selling government assets. Consequently, the government may simply not honour the judgment, and one has limited scope in getting it enforced if there is resistance.

8.6 Are there examples where foreign investors in the renewable energy sector have successfully obtained domestic judgments or arbitral awards seated in your jurisdiction against government authorities or the state?

Renewable energy is still in its relatively early stages of development and there has been very little litigation. In one matter involving the EPC contractor Intratek Zimbabwe (Private)

Limited, ZPC was sued for breach of the EPC contract after ZPC had cancelled the contract. The High Court held that ZPC was bound by the contract, which was still extant, and directed the parties to finalise the processes leading up to the implementation of the contract. The judgment was taken on appeal and the decision of the Supreme Court is still pending.

9 Updates and Recent Developments

9.1 Please provide a summary of any recent cases, new legislation and regulations, policy announcements, trends and developments in renewables in your jurisdiction.

ZPC shortlisted advisory firms to advise it on the Batoka Gorge hydro power project on the Zambezi River south of the Victoria Falls. This project, a run of the river hydroelectric power project, will provide 2400MW to Zambia and Zimbabwe, who jointly control the Zambezi River through ZRA.

The announcement by the Industrial and Commercial Bank of China in June 2021 that it will no longer fund the USD3 billion coal-fired project was a cause for celebration for the various environmental lobby groups who were opposed to the project as going in the wrong direction and renewed calls for investment in renewable energy sources.

Nikita Madya joined the firm on 1 July 2000 and became a Partner on 1 July 2003. He heads the firm's Energy, Infrastructure and Natural Resources Department and is Co-Head of the Commercial and Corporate Department. He has a large commercial practice and advises several listed and unlisted companies in relation to acquisitions, mergers, disposals and various types of contracts. He is currently involved in greenfield projects in the energy sector, with work covering all aspects, including the construction elements involved in such projects. He has handled several completed transactions for companies listed on the Zimbabwe Stock Exchange, including share option schemes, rights issues, mandatory offers to minorities, Zimbabwe Stock Exchange Rules compliance and related matters. He has acted and continues to act as local counsel for a number of international law firms handling investment transactions into Zimbabwe. He is also involved in advising local, regional and international financial institutions in various loan transactions.

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