We continue to be surprised by the momentum in the energy transition we are witnessing globally and the continued emergence of the Asian renewables sector. In a decade, renewable power will be the cheapest option for new power supply investments in nearly all Asia-Pacific markets. APAC markets are currently averaging +4% growth in renewables in the past five years, compared with +0.5% in Europe.

As countries across the region continue to move ahead with ambitious targets for the amount of energy to be generated from renewables and what appears to be no shortage of ‘dry powder’ available to deploy in the sector, we are continuing to see a significant upward trend in market activity. While this has been led by huge investment in China and India, it is not confined to those countries.

The past 12 months have seen a further increase in the number of renewable and other green energy transactions in the region. While traditional fuel sources, including gas and coal, will continue to be important for many years to come, several major transactions underline what we believe to be a fundamental shift in the outlook for the future energy mix in the region. These include:

- the ongoing growth of the offshore wind sector in Taiwan, with the successful closing of the Yunlin, Formosa 2 and CFXD project financings and launch of the financing process for the next wave of offshore wind projects in Taiwan;
- the continuing development of the offshore wind sector in Japan (including the closing of the first large-scale commercial offshore wind power project in that market), South Korea, Vietnam, Australia, India and elsewhere;
- the increase in fundraising activity in specialist funds and other platforms focused on Asia Pacific renewables; and
- the ongoing issuance of green bonds, including ICBC’s issuance of US$1.58bn of green bonds on the London Stock Exchange – the largest ever green bond listing on the LSE.

Linklaters is proud to have acted on many of the leading deals in the region and continues to advise on the ongoing issuance of green bonds, including ICBC’s issuance of US$1.58bn of green bonds on the London Stock Exchange – the largest ever green bond listing on the LSE.

Our Green Energy practice in Asia Pacific

We were the first firm to establish a dedicated Asia-Pacific Green Energy Group with dedicated renewable energy experts who specialise in the full range of no- or low-carbon energy projects, trading of green energy products, issuance of green bonds, provision of green loans and advising on a broad range of Environment and Human Health, Safety and Security (“EHS”) issues. Our cross-practice group covers the full spectrum of renewables projects including onshore and offshore wind, solar, biomass, biofuels, wave/ tidal, geothermal, hydropower, waste and waste to energy.

We offer clients unrivalled global coverage combining:
- in-depth, local policy and regulatory insight; and
- leading practices for M&A, EHS advisory and financing transactions of all kinds (including the full range of renewable enabling projects, green bonds and green loans).

Our team in Asia Pacific combines top class international experience in cross border transactions (including experience in target destination markets for Asian investment in the energy and utilities sector), with well established expertise within the region. We advise on the laws of England & Wales, New York, Hong Kong, Japan, Singapore and Thailand; in combination with our alliance firms, we also provide clients with integrated advice on the laws of Australia, India, Indonesia and Vietnam.

### Key contacts of our Asia Green Energy practice

<table>
<thead>
<tr>
<th>Name</th>
<th>Email</th>
<th>Role</th>
<th>Contact Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>James McLaren</td>
<td><a href="mailto:james.mclaren@linklaters.com">james.mclaren@linklaters.com</a></td>
<td>Partner, Hong Kong SAR, Asia Head of Green Energy practice</td>
<td>Tel: +852 2842 4106</td>
</tr>
<tr>
<td>John Maxwell</td>
<td><a href="mailto:john.maxwell@linklaters.com">john.maxwell@linklaters.com</a></td>
<td>Partner, Tokyo, Regional Head of Energy &amp; Infrastructure</td>
<td>Tel: +81 3 6212 1227</td>
</tr>
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### Our recent Asian renewables experience

<table>
<thead>
<tr>
<th>Location</th>
<th>Year</th>
<th>Description</th>
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<tbody>
<tr>
<td>Mainland China</td>
<td>2018</td>
<td>Renewable Energy in Mainland China</td>
</tr>
<tr>
<td>South Korea</td>
<td>2018</td>
<td>Renewable Energy in South Korea</td>
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<tr>
<td>Malaysia</td>
<td>2018</td>
<td>Renewable Energy in Malaysia</td>
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<td>Thailand</td>
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<td>Renewable Energy in Thailand</td>
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<tr>
<td>Vietnam</td>
<td>2018</td>
<td>Renewable Energy in Vietnam</td>
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</tbody>
</table>

### Renewable Energy in Australia

- in-depth, local policy and regulatory insight; and
- hands-on knowledge of the requirements of the different renewable energy technologies.

### Renewable Energy in India

- in-depth, local policy and regulatory insight; and
- hands-on knowledge of the requirements of the different renewable energy technologies.

### Renewable Energy in Indonesia

- in-depth, local policy and regulatory insight; and
- hands-on knowledge of the requirements of the different renewable energy technologies.

### Renewable Energy in Japan

- in-depth, local policy and regulatory insight; and
- hands-on knowledge of the requirements of the different renewable energy technologies.

### Renewable Energy in Korea

- in-depth, local policy and regulatory insight; and
- hands-on knowledge of the requirements of the different renewable energy technologies.

### Renewable Energy in Malaysia

- in-depth, local policy and regulatory insight; and
- hands-on knowledge of the requirements of the different renewable energy technologies.

### Renewable Energy in Thailand

- in-depth, local policy and regulatory insight; and
- hands-on knowledge of the requirements of the different renewable energy technologies.

### Renewable Energy in Vietnam

- in-depth, local policy and regulatory insight; and
- hands-on knowledge of the requirements of the different renewable energy technologies.
Our recent Asian renewables experience.

**Thailand**
- The lead arranger and original lender on the financing to Greencorps Power Limited, a project company wholly owned by Gekko Engineering Public Company Limited to construct, develop and operate a 67.5MW wind power project in Nakhon Ratchasima Province, Thailand.
- The fund manager on the establishment of an infrastructure fund for the transfer of solar power assets of approximately 118MW owned by subsidiaries of a Thai listed company engaged in solar and alternative energy.
- Khao Kor Wind Power, a subsidiary of Ratchaburi, on the project contracts and project financing for the 60MW Khao Kor wind power project in Thailand.
- The Senior Commercial Bank Limited as the lead arranger and lender on a proposed financing to Wind Energy Development Company Limited ("WED") to construct, develop and operate a 60MW wind project, comprising three wind power projects (2MW, 8MW and 50MW), in Nakhon Ratchasima Province as well as a mezzanine financing to the sponsor Gekko Energy Public Company Limited to finance its equity contribution into WED for the project.
- Diamond Generating Asia Limited on the THB 1.2bn sale of shares in Natural Energy Development Company Limited and N E T Wind Co. Ltd.
- First Kori Wind Company Limited and KR Two Company Limited, project companies in which Ratchaburi Electricity Generating Holding Public Company Limited and Wind Energy Holding Public Company Limited hold substantial interests, on the THB 6.433bn limited resource financing of a 2 x 103.5MW wind power project in Thailand and on the investment in the project companies as well as on the project contracts, including the turbine supply agreement and permits and licenses and on its mezzanine financing for an equity contribution in the project. These were the first two wind power projects in Thailand and the biggest in South East Asia.
- Global Power Synergy Public Company Limited on its acquisition of a 40% interest in a 55MW solar farm owned by Thai Renewables Co. Ltd.
- Solar Power Co. Ltd. on its THB 3.95bn sale of a 40% stake in three of its solar power projects to Ratchaburi Electricity Generating Holding PLC.
- SPG Power Public Company Limited on its potential public offering and the equity joint venture in relation to the development of its solar farms.
- Kasikornbank Public Company Limited on the project financing of a 1.9WM solar power project in Chonburi province, Thailand.
- An international energy developer on two 28MW solar projects.
- Diamond Generating Asia Ltd. as joint venture partner on the development of one of the largest solar projects in Asia.
- Double A (BK1) Public Company Limited on a THB 1.3bn financing project for a pulp mill project with a design capacity of 472,500 tonnes per annum and an SPP 90MW biomass power plant project in Prachinburi province.
- Deutsche Bank AG, Singapore Branch, in relation to its US$150mn equity financing in Biomass Electric Co. Ltd. for the purpose of financing the development and construction of a 65MW biomass power plant in Prachinburi province.

**Philippines**
- Macquarie Infrastructure Holdings Philippines Pte Ltd. on the US$225mn joint venture with Ayala Corporation and UPC Philippines Wind Holdings Inc. E.V. to invest in wind farms in the Philippines.
- Diamond Generating Asia Ltd. on its investment into the 8.2MW Capulapin wind farm in Ilocos Norte.
- Diamond Generating Asia Ltd. on its joint venture with Michigan Power (entirely owned subsidiary of Michigan Corp) to explore solar power opportunities in the Philippines.
- A major energy company on its bid to acquire a 50% stake in the CEB 720MW hydro project in Luzon, the Philippines.

**South Korea**
- The sponsor on the HINRIN 5kV onshore wind farm project in South Korea.
- A leading offshore wind developer on its market entry into South Korea.
- A bidder on the proposed acquisition of a portfolio of solar and offshore wind assets in South Korea.

**Malaysia**
- The sponsors on the RM840mn Pulau Papan Offshore Wind Farm Project.
- A leading offshore wind developer on its market entry into South Korea.
- A bidder on the proposed acquisition of a portfolio of solar and offshore wind assets in South Korea.

**Indonesia**
- An international energy company on its bid to acquire an interest in a developer of power projects in Indonesia, with an active portfolio of operating and under development projects (thermal and renewables).
- The arrangers on a US$660mn secured loan facility for the purpose of, among others, the financing for the Star Energy Group consortium’s equity contribution towards acquisition of a portfolio of Indonesian geothermal assets currently owned by Chevron and the refinancing of the senior secured notes issued by Star Energy Wongi Winds.
- The lender on the structuring and hybrid – project financing of a greenfield hydro renewables project in Indonesia.
- Ratchaburi Electricity Generating Holding in exploring the possibility of investing into three Indonesian run-of-the-river hydro projects in North Sumatra. One project is in operation and the other two projects are still under construction.
- An international investor on its potential joint venture to develop an onshore windfarm in South Sulawesi, Indonesia.
- The commercial lenders on the US$266mn bank and bond debt financing of a geothermal power plant project in the Oita Prefecture in Kyushu.
- Enel Green Power on the development, in joint venture with Mitsubishi Corporation, of an onshore wind farm project at Akita Port in Japan.
- The sponsors on the acquisition of the 645MW San Juan de Ulua PV farm in Puebla, Mexico.
- The sponsors on the potential financing for a 50MW solar PV project in Mexico.
- The sponsors on the potential financing for a 30MW solar PV project in Brazil.
- A number of renewable energy companies on the proposed joint venture to develop an onshore windfarm in the Pernambuco State in Brazil.
- The sponsors on the acquisition of the 645MW San Juan de Ulua solar power project.
- ING Bank in relation to the €2.7bn project financing of the 640MW Yunlin offshore wind farm project in Taiwan.
- The sponsors on the acquisition of the 11.244MW hydrogen station to be developed by Kohala Hydro Company ("KHC") Ltd.
- CDB as lender, on the US$88mn project financing of the 99.9MW Ulm wind farm project in Inner Mongolia, China.
- The lenders and EKF on the NT$1.5bn project financing of the 81MW Suiyuan wind farm project in Taiwan.
- The sponsors on the acquisition of a 13MW interest in the 110MW Formosa 1 offshore wind farm project in Taiwan.
- A bidder on the proposed acquisition of a portfolio of solar and WTE assets in Taiwan.
- Mitsubishi Co. Ltd. and Makoffit Berhad as sponsors on the development of a wind power project in South Dakota.
- Asian Development Bank on the development and financing of a proposed dual fuel (biomass and coal) co-generation power project in Pakistan.
- Morgan Stanley as lenders on the potential acquisition of a stake in the NT$18.7bn (approx $600m) project financing for the 475MW Keelung offshore wind farm project in Taiwan.
- China Development Bank ("CDB") and Habib Bank Limited as lenders on the project financing of the 1.124MW hydrogen station to be developed by Kohala Hydro Company ("KHC") Ltd.
- Greenko on its acquisition of SunEdison’s operational solar and wind assets in the province of the PRC.
- The developers and lenders on the project financing of a windfarm in 35% interest in the 110MW Formosa 1 offshore wind farm project in Taiwan.
- The special administrative body on the proposed acquisition of a portfolio of solar and WTE assets in Taiwan.
- The sponsors on the acquisition of a 12.3MW interest in the 27.3MW Formosa 1 offshore wind farm project in Taiwan.
- A leading offshore wind developer on its potential renewable energy project in China.
- A leading offshore wind developer on its potential renewable energy project in China.
- The sponsors on the potential acquisition of a portfolio of solar projects in Taiwan.
- The sponsors on the potential financing of a 30MW solar PV project.
- A Japanese megabank on risk allocation mitigation strategies for wind, solar and biomass project finanlings in Japan.
- TheJapanese lender on the financing and hybrid securitisation of a portfolio of PV assets.

**Lao PDR**
- The sponsors on the Nam Thi Thao II hydroelectric project in Laos.
- The international and Thai lenders on the originating of the Thuan Hien Power Project in Laos.
- A group of Thai and international lenders on its potential financing of US$400mn to Electricité du Laos which include our due diligence of various concession agreements of major hydropower projects in Laos.
- The sponsors on the potential financing of a 12MW hydro power project in Laos in connection with the corporate restructuring of GDF Suez.
- Glow Energy Company Limited on the potential investment in a hydropower plant in Laos.
- The sponsors on the project financing of a greenfield hydro power plant.

**Vietnam**
- A bidder on the proposed acquisition of a portfolio of solar and wind assets in Vietnam.
- India-based Adani on several aspects of its joint venture with a Vietnamese partner to carry out solar/wind projects in Ninh Thuan province, Vietnam.
- On the acquisition of a 30MW onshore wind project in Vietnam.
- The sponsors on the joint venture with the energy arm of Philippines’ Ayala Corporation to develop around 135MW of solar power projects in Vietnam.
- DRW and UOB on the US$30mn joint investment in Biloxico Power, which owns and operates a portfolio of hydropower projects across Vietnam, including conducting full due diligence on all the projects.

**Australia**
- Please refer to the credentials set out on page 13.

-EN**
Our recent global renewable experience.

**United Kingdom**
-joint venture and the sponsors in relation to the £2.5bn refinancing of One Bank Street Offshore Wind Farm Limited’s Offshore Wind Farm project located 33km from the Caithness coast in Scotland.
- the lenders on the 480MW refinancing of this portfolio of Portuguese wind farms held by Energe Renewable Group Europe Hold Co S.A.R.L., a Luxembourg subsidiary of First Solar.
-Octopus Renewables on its acquisition from RES of nine wind farms in the UK.
-“Bolide Bank” and “Nordeinde” on a £56m stake in the wind farm located in the North of England.

**Portugal**
-Berner on the analysis of the voluntary programme set out by the Portuguese Government regarding the rescheduling of liabilities who invest in wind farm constructions.
-the lenders on the refinancing of the 40MW windfarm portfolio.
-Magnus Capital Industrial Partners and the Magnus consortium on the acquisition of all operating windfarms held by a manager of almost 550MW as well as several other windfarms under construction (156MW).
-Ascendia Drax PLC and Solar Capital on the financing and construction of three photovoltaic solar farms in Portugal with a total capacity of BMW.
-Gaudi Power Holdings LLC as purchaser and Mandoro Capital as parent company on the acquisition of a 48MW windfarm portfolio in Portugal.
-the lenders on the refinancing and relofunding of a portfolio of nine windfarms located in Portugal with a total installed capacity of about 500MW, and owned by Geran, a Portuguese renewable energy company.
- the arrangers on the €220m facilities agreement for the refinancing of Ancona Wind, a 120MW portfolio of wind assets in Italy.
-Marguerite Adviser S.A. on the €300m acquisition of two greenfield projects for the construction and operation of biomass power plants in Portugal.
-SEMENS – Demetris/merveilles S.A. as sponsors structuring and implementing the partial refinancing of its €1bn project finance portfolio.
-Neos S.A. on the €400m refinancing of its 24.9MW solar photovoltaic power portfolio located in Portugal, through two project bond issues.

**Romania**
-Merit International Power on acquisition and development of a wind power project in Romania.
-the European Bank for Reconstruction and Development (the “EBRD”) on the financing of windfarm projects in Romania.
-Good Energies on the sale of all or part of two windfarm development projects in Romania (Fantanele) and the acquisition of a 40MW windfarm project in Slovakia.

**The Americas**
-DONG Energy Wind Power U.S.A. (now Orsted) as project sponsor and joint venture partner on its 550MW joint venture with鑫能ang Energy to develop, construct and operate a utility-scale offshore wind power project off the coast of Massachusetts.
-Expedit Hordern Denmark and commercial lenders on the development and proposed US$300m financing of the Cape Wind Wind Farm wind farm in the Dutch North Sea.
-the investors on the construction arrangements for Typhoon’s project in the Dutch North Sea.
-NBC in the project financing of the biogas power plant Moonjock.

**Netherlands**
-Anglo Platinum Marketing and Shell Ventures B.V. in their investment in moTo Holding B.V., a company that develops and markets hydrogen compression technology.
-Siemens Project Ventures on the contemplated acquisition of a 40% participation in the 600MW offshore Gemini wind park in the Dutch North Sea.
-the investors on the construction arrangements for Typhoon’s project in the Dutch North Sea.
-NBC in the project financing of the biogas power plant Moonjock.

**Belgium**
-on the creation of a joint venture (GATRIP) for the development of two offshore windfarms in the North Sea with a total capacity of 534MW.
-on the financing of a biogas plant in Ghent, Belgium.
-on biogas plants in four European jurisdictions, including the Netherlands, Germany and Belgium.

**Luxembourg**
-Toke Windfarms Holding Srl on the acquisition of three new offshore windfarm developments.
-South East Infrastructure Equity Finance on the disposal of its renewable assets.
-the government of Luxembourg Environment Minister on the Miéjsche Landf Gas Cryogenie Project.

**Germany**
-Group GPM on the acquisition of a 25% stake in offshore wind farm “Gale Wind 1.”
-the sellers on the planned acquisition of a share in the offshore wind farm “Bismark West II phase 2”, “Deutsche Bucht”, “Nordvorland” and “Bosnien 3/4”.
-RWE on the sale of an 85% equity stake in the offshore windfarm “North Ore One” to Northern Power and the subsequent financing of the offshore windfarm “Statiola” in the German North Sea.
-Windpark Thüngel on the acquisition of the onshore windfarms “Kützenber” and “Hornstemmen” from BORRESL and “Mitts” from own.
-Allianz Global Investors on the acquisition of a 14.2MW wind farm portfolio consisting of 11 wind farms from PNE Wind AG and (ii) on the acquisition of the solar parks Prechsen and Juckers (55MW), the last two ground-mounted solar farms in Germany.
-QCells on the development, financing and sale of some of the largest ground-mounted solar installations in Europe. These include Standerton South (50MW), Zehden (46MW), Finspurg (38MW), Arnstorf (28MW), Bitterfeld (7MW) and Freiburg (5MW).
-Enel Green Power on the acquisition, development and sale of the Windheim geothermal project in Bavaria, Germany – this is the largest geothermal project (in Germany) up to (250MW).

**Spain**
-ABIC on the acquisition of Eolia from Oaktree.
-Marquise and Wien Hesse Infrastructure on the KZ 450m acquisition of all the assets of EON in Spain and Portugal.
-Siemens on the merger of its wind power business with Gamesa Corporation Technologia (a newly merged M&A deal in Spain in 2018, awarded “Deal of the Year” by Expansion).
-GAF and ACS (Cobra) on the takeover bid over S 따라 Brookfield.
-Boenning Capital on the acquisition of 30% of the shares in Grupo T-Solar.
-Centrienergy on the creation and subsequent €650m sale of a Eneya Energy to Forevergreen.
-Financial Reserve on the establishment of the Renewables Reserve joint venture with Enercon to finance the acquisition and development of wind farms in Spain and other jurisdictions.

**Italy**
-SPM Barletta, MIBAN Bank and Societe Generale on the €420m financing of the 480MW San Nazario offshore windfarm, the first offshore wind project to reach financial close in the French market.
-a consortium including EDF, COGEN, MEERWIND and CDC on the financing of a development and construction of a utility-scale offshore wind farm project on the west coast of France launched by the French Environment and Energy Management Agency (ADEME).
-The Bank of Tokyo-Mitsubishi UFJ Ltd, The Royal Bank of Canada, and SPV Barletta, as lead arrangers, on the €220m portfolio refinancing of windfarms in Ireland, UK and France.
-Soros on small aspect of the acquisition and €380m refinancing of five park car solar power plants (S5MW) in France.
-a bidder in relation to the acquisition of Enel Green Power’s French windfarms portfolio (178MW in operation, 18MW in construction and 32MW in development).
-Neos S.A. on the €400m completion of the €360m development of Europe’s largest photovoltaic energy park in Gardanne, France.
-ESPO Global European Fund for Energy, Climate Change and Infrastructure (the Marguerite Fund) on its acquisition and project financing of three photovoltaic solar power plants from EDF Energies Nouvelles, in Toulouse, France, one of Europe’s largest solar plants.
-Uncor as (non-sponsor) on an €80m limited recourse refinancing of one of the largest bio ethanol production plants in France.
-an electricity operator on its bid to acquire Shem (Societe hydroelectrique du M6), StCN’s 820MW hydro subsidiary in France.
-Global Investment S.A as lead arranger and BPI France and La Banque Postale as lenders on their limited recourse financing of a portfolio of 27 windfarms acquired by Enercon in France.
-Societie Generale and BNP Paribas on refinancing of a €80m loan to construction of a 55MW windfarm portfolio of 13 French solar and wind assets owned by the fund Transition Energie France managed by Ac comfortable.
-Renov Solar as sponsor on the €470m reorganisation and limited recourse refinancing of its portfolio of solar plants in operation in France, one of the largest solar assets refinancing in the French market.
Our recent global renewable experience.

Band 1: Projects & Energy - Global
Chambers Global 2020

Band 1: Energy & Natural Resources: Power - UK
Chambers Global 2020

Band 1: Energy & Natural Resources: Renewables & Alternative Energy - UK
Chambers Global 2020

Band 1: Projects - UK
Chambers Global 2020

Band 1: Projects and Infrastructure - Asia-wide
Chambers Asia Pacific 2020

Band 1: Projects - China, India, Indonesia, South Korea, Vietnam
Chambers Asia Pacific 2020

Best Legal Adviser
IJ Investor Awards 2019

Europe Offshore Wind Deals of the Year - NnG and Saint-Nazaire
PFI Awards 2019

Project Finance Team of the Year
IFLR European Awards 2018

Europe Power Deal of the Year: Moray East
PFI Awards 2018

Projects, Energy and Natural Resources: Firm of the Year
The Legal 500 UK Awards 2017 & 2018

European Solar Deal of the Year: Octopus UK Solar Portfolio Refinancing
IJGlobal Europe Awards 2017

European Solar Deal of the Year: Vela Energy Solar PV Portfolio Refinancing
IJGlobal Europe Awards 2016

European Biomass Deal of the Year: Tees Biomass
IJGlobal Europe Awards 2016

Source: Percentage of market share by value of the top five firms for FY 2019 (IJGlobal Infrastructure and Project Finance Report)

Source: Percentage of market share by value of the top five firms for FY 2019 (IJGlobal Infrastructure and Project Finance Report)

“Widely recognised for expertise in new energy projects, one client notes: “They are able to leverage their previous offshore wind experience both in Europe and Taiwan. They’ve been innovative on some structuring components of the project, responsive and able to leverage their vast experience in the sector.””

Chambers Asia Pacific 2020, Projects & Infrastructure: Asia-Pacific Region

Asia Pacific Renewable Energy Insights
Policy developments
In late 2017, the Federal Government announced that it would introduce the Australian National Energy Guarantee (the “National Energy Guarantee”) which was intended to broadly impose the introduction of two new obligations on electricity retailers:

> the Reliability Requirement – aims to ensure there is sufficient dispatchable electricity available to meet peak demand in each region of the Australian National Electricity Market ("NEM") by encouraging investment in dispatchable generation or demand response. This would reduce the risk of a shortfall in electricity generation leading to network congestion or instability; and

> the Emissions Reduction Requirement – aims to ensure generators keep their emissions to a level consistent with meeting the NREU of 2050.

> In September 2019, the Clean Energy Regulator ("CER") approved enough capacity to guarantee that the Large-Scale Renewable Energy Target ("RET") of 33,000 gigawatt hours of additional renewable energy will be met in 2020. The CER has previously estimated that for the 2020 target to be reached, the total new capacity of renewable energy projects that need to be commissioned between 2017 and 2019 was 69,600MW. In August 2019, this milestone was met ahead of schedule. The combination of a stable federal RET and state electricity pricing mechanisms has enabled new project development. As a result, a total of 11,611MW of new large-scale generation capacity has been firmly announced from 2016 to December 2019.

What we are seeing
With a large volume of investment in the Australian Renewable Energy sector in the last few years, we are starting to see a number of trends emerge.

STORAGE
> With the closure of ageing coal fired power stations, and as energy storage technologies continue to advance, there are opportunities for investors to source energy storage projects linked to renewable energy projects.

OFFTAKERS
> Following the trend in the United States and the United Kingdom, Australia is seeing a rapid increase in interest from large corporations seeking to manage electricity pricing and increase green credentials by contracting directly with generators (rather than traditional retailers). This trend is also largely driven on the buyer side by the risk of the RET being repealed or amended. Similarly, generators and investors need to be confident they have a creditworthy offtaker (which is usually satisfied through credit support). These positions are generally accepted by retailers but are sometimes being revisited by market participants with a significant market share and the project servicing a minimum number of customers.

FUINANCING
> Traditionally, and as a function of how financial institutions fund themselves in Australia, most project finance banks have preferred to provide debt maturing at five to seven years post construction. However, with shifting market dynamics created by funding from government entities and a focus on increasing green credentials, financiers are looking for longer term tenors. As a result, financiers are seeking to manage electricity pricing and increase green credentials for projects in the lead up to 2020 when the RET peaks at 400MW. Consequently, financiers are considering financiers are considering extending debt tenors to periods of 15 to 18 years for projects.

INVESTORS
> There is a large volume of investment in Australia in the renewables industry in the lead up to 2020 when the RET peaks at 33,000GWh. As a result, there has also been an increase in investor interest in larger renewable energy projects including merchant deals supported by a parent company guarantee from the Australian Government.

> There has also been an increase in interest in investor interest in new greenfield projects.

INDUSTRY
> The CER has previously estimated that for the 2020 target to be reached, the total new capacity of renewable energy projects that need to be commissioned between 2017 and 2019 was 69,600MW. In August 2019, this milestone was met ahead of schedule. The combination of a stable federal RET and state electricity pricing mechanisms has enabled new project development. As a result, a total of 11,611MW of new large-scale generation capacity has been firmly announced from 2016 to December 2019.
Australia’s foreign investment regime – changes relating to wind and solar farms

On 1 July 2017, a number of changes were introduced by the Australian Government to Australia’s foreign investment regime, including clarifying the treatment of wind and solar power stations.

The changes are a welcome development for Australia’s foreign investment regime, given that there has been substantial debate regarding:

- the classification of the land on which wind and solar power stations are located (namely whether it is agricultural or commercial land); and
- whether the infrastructure relating to a solar or wind power station is a chattel or fixture (land therefore whether the solar and wind power station contributes to the value of the land, and consequently satisfies the applicable monetary threshold).

Previously, the land on which wind and solar power stations are located was ordinarily considered to be:

- where the land was being used (or could reasonably be used) for primary production, agricultural land. Acquisitions of interests in such land attract a monetary threshold of A$15 million* (satisfaction of which is calculated based on the applicant’s cumulative interests in agricultural land); or
- where the land was not being used (and could not reasonably be used) for primary production, vacant commercial land (if the view was taken that the wind and solar farm infrastructure was not a substantive permanent building that could be lawfully occupied by persons, goods or livestock). Acquisitions of interests in such land attract a zero dollar monetary threshold.

Much of the debate related to the treatment of the solar and wind farm infrastructure. i.e. whether these assets are considered chattels or fixtures (which was determined by FIRB on a case-by-case basis). To the extent the solar or wind farm infrastructure was considered a fixture, this infrastructure contributed to the value of the land and therefore the monetary threshold was more likely to be satisfied.

The Federal Government has clarified the treatment of wind and solar power stations by confirming that:

- land is not vacant if there is a wind or solar power station located on the surface of the land; and
- land is not agricultural land provided that the land is not currently being wholly or predominantly used for a primary production business and where:
  - an application has been made to a government authority to establish or operate a wind or solar power station on the land.
  - the whole or predominant use of the land is for a wind or solar power station; or
  - an approval is in place to allow the wind or solar power station to be established or operated on the land; or
  - the land was acquired solely for the purpose of meeting a requirement of the government approval for a solar or wind power station, or its sole or predominant use is for this purpose.

The practical implications of these amendments are that:

- approval has yet to be obtained for the construction of the solar or wind power station on the land; or
- an application for approval has not been made to a government authority to establish the solar or wind power station, the land will continue to be considered agricultural land (assuming the land is used, or could reasonably be used, for a primary production business) and therefore the A$15 million cumulative monetary threshold will apply.

- Where the land is not currently used wholly or predominantly for a primary production business and:
  - approval has been obtained for the construction of a solar or wind power station on the land; or
  - an application for approval has been made to a government authority to establish a solar or wind power station, though construction of a solar or wind power station is not complete, the land will be considered vacant commercial land (unless there is a substantive permanent building on the land that can lawfully be occupied by persons, goods or livestock) and therefore a zero dollar monetary threshold will apply.

- Where a solar or wind power station has been constructed on the land, the land will be considered non-vacant commercial land, in which case, that public infrastructure is located on the land, either:
  - a A$5 million threshold will apply (if the foreign person has a right to occupy the land or be involved in the central management and control of the entity that holds the land); or
  - a A$26 million threshold will apply (if the foreign person has does not have a right to occupy the land or be involved in the central management and control of the entity that holds the land).

For completeness, despite the above, it is noted that the zero dollar threshold will apply in each of the circumstances described above where the acquirer is a foreign government investor.

*Noting that certain privately owned investors from FTA partner countries have a higher threshold (i.e. Chile, New Zealand and United States). Further, for Thailand, where land is used wholly and exclusively for a primary production business, the threshold is A$50 million (otherwise the land is not agricultural land).

January 2020

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 Relevant experience

Allens’ Renewable Energy team brings together extensive experience in dealing with the complex and broad ranging legal issues associated with the development, acquisition and sale of renewable energy assets. We have acted for sponsors, purchasers, vendors and financiers, and advised on all facets: everything from M&A, finance, tax and infrastructure.

Hand in hand with understanding the issues associated with the development and expansion of renewable assets, our team also brings a proven track record in advising on sales and acquisitions of renewable assets.

WESERN AUSTRALIA

- Colligat wind farm
- Emu Downs solar farm
- Emu Downs wind farm
- Flat Rocks wind farm
- Greenough River solar power plant
- Mumbida wind farm
- Northam solar farm
- Ord River hydro plant
- Walkaway wind farm
- Yandin wind farm

SOUTH AUSTRALIA

- Allendale wind farm
- Aurora Solar Energy Project (incl. battery storage)
- Canunda wind farm
- Cathedral Rocks wind farm
- Clements Gap wind farm
- Hallett wind farm
- Naracoorte pumped hydro
- Hornsdale wind farm
- Kanmantoo pumped hydro
- Lake Bonney wind farm
- Lincoln Gap wind farm
- Mt. Miller wind farm
- Olympic Dam solar
- Starfish Hill wind farm
- Tungkette Hill wind farm
- Waterloos wind farm
- Wattle Point wind farm
- Willkogolea wind farm
- Wyalla wind farm

VICTORIA

- Boddington solar farm
- Boddington wind farm
- Buronga wind farm
- Cherry Tree wind farm
- Conguwa solar farm
- Gannawarra solar farm
- Hebel wind farm
- Herang solar farm
- Kiamal solar farm
- Lat Lai wind farm
- Macarthur wind farm
- Moonabool wind farm
- Mortlake wind farm
- Mount Gravatt wind farm
- Morton’s Lane wind farm
- Mt. Mercer wind farm
- Nangalinda wind farm
- Portland wind farm
- Salt Creek wind farm
- Stockyard Hill wind farm
- Solar Systems demonstration project
- Timboon West wind farm
- Toora wind farm
- Waubra wind farm
- Wonthaggi wind farm
- Woodthorpe wind farm
- Yawong wind farm

QUEENSLAND

- Blackwater solar farm
- Bowen solar farm
- Bulli Creek solar farm
- Chinchilla solar farm
- Collinsville solar power station
- Cook Shire / Lakeela solar
- PV/ battery storage/system management plant
- Coopers Gap wind farm
- Darling Downs solar farm
- Forsyth wind farm
- Hamilton solar farm
- Kennedy Energy Park – solar, wind, and battery
- Mclntyre wind farm
- Mount Emerald wind farm
- Oaky solar farm
- Queensland Government wind farm asset sales
- Tenter Creek Farm
- Wellington solar farm
- Wespasolar farm
- Wirrakunda solar farm
- Windy Hill wind farm

NEW SOUTH WALES

- Benyl solar farm
- Biela wind farm
- Boco Rock wind farm
- Boodangora wind farm
- Broken Hill solar power plant
- Crookwell 2 wind farm
- Cullerin Range wind farm
- Glen Innes wind farm
- Darlington Point solar farm
- Goomburra solar farm
- Gullen Range wind farm
- Gunning wind farm
- Manikunda solar farm
- Moree solar farm
- Nyngan solar power plant
- Sapphire wind farm
- Shoalhaven Hydro electricity scheme
- Silvertown wind farm
- Snowy 2.0
- Sunraysia solar farm
- Taralga wind farm
- Trina Solar, rollout of roof-top solar leasing product
- Wellington solar farm
- White Rock solar farm
- White Rock wind farm
- Woodlawn wind farm

TASMANIA

- Cattle Hill wind farm
- Granville Harbour wind farm
- King Island solar power station
- Musselroe wind farm
- Woolnorth Studland Bay wind farm
- Wondunna wind farm
- Whitsunday solar farm
- Wellington solar farm
- West Tamar wind farm
- Wonthaggi wind farm
- Woolnorth Solar Farm

RENEWABLE ENERGY IN AUSTRALIA.
Renewable Energy in Mainland China.

Which sectors are active?

The PRC is the world's largest electricity producer and it is reported that its installed generation capacity exceeds 1,900GW. In 2018, the PRC produced 6,994 billion kWh of electricity. This was mainly produced using coal (70.39%) and hydroelectric power (17.63%). In comparison, wind generation represented 5.23% and solar generation 2.54%. The country's hydroelectric power (17.63%). In comparison, wind generation accounted for 4.21%, and solar energy accounted for 2.53% of the total electricity generation.

In recent years, the Central Government has been actively promoting the use of renewable energy as part of a wider effort to address pollution concerns and comply with China's international commitments with respect to reduction of carbon emissions. The National Energy Administration (the "NEA") issued an energy sector five-year development plan (2016 to 2020) in December 2016 (the "13th Energy FYP").

The 13th Energy FYP contains ambitious targets on research and deployment of energy infrastructure and includes the following objectives for "strong development" of renewable energy: wind energy: developing generating capacity beyond 210GW by 2020 (which requires a 9.9% increase each year (the installed capacity by the end of 2018 was approx. 184GW)), 500MW of capacity coming from offshore wind projects; solar energy: developing generating capacity beyond 110GW by 2020 (which requires a 21.2% increase each year (the installed capacity by the end of 2018 was approx. 175GW)), 500MW of capacity coming from concentrated solar thermal projects; and concentrated solar thermal projects.

The 13th Energy FYP also designated Jiangsu, Guangdong and Fujian provinces as regions where the construction of offshore wind projects will be encouraged. More detailed five-year development plans have been promulgated for hydropower, wind energy and solar energy.

How does the system work?

The power off-takers for renewable energy producers are the grid operators and possibly end-users. Grid operators, grid operators are the primary off-takers for renewable energy. Instead of a unified grid system, power transmission and distribution in the PRC are managed through six regional grids. Five grids are managed by subsidiaries of State Grid Corporation and one (South) is managed by China Southern Power Grid.

End-users, recent reforms have opened the possibility for end-users to enter into power purchase agreements with renewable energy producers directly. Electricity producers (conventional and renewable) in the PRC include:

- The "Big 5": the five major power producers in the PRC are state-owned companies commonly referred to as the "Big 5". They are China Datang Corporation, China Guodian Corporation, China Huadian Group, China Huaguan Group and China Power Investment Corporation.
- Other state-owned companies: State Grid Corporation and China Southern Power Grid have power generation subsidiaries, and so do some other large state-owned companies such as Shenhua. Some regional state-owned companies also engage in power generation.
- Private power producers: a number of private power producers also operate in the PRC.

Regulatory bodies

National Energy Commission

The NEC is a ministerial-level coordinating commission. It is headed by the prime minister and includes high-ranking members (usually ministers) from different departments and ministries, including both the NDRC and NEA.

The NEC is the highest authority in charge of the power and energy sector in the PRC, including renewable energy. It is responsible for formulating national energy development strategies, analyzing material issues which present a threat to energy security and energy development, and coordinating among governmental departments and ministries in respect to major issues concerning domestic development and international cooperation on energy related matters.

National Development and Reform Commission

The NDRC is a ministerial-level agency responsible for a wide range of matters, including national economic planning, regulating foreign investment, approving projects of national importance and enforcing certain aspects of the PRC Anti-Monopoly Law.

National Energy Administration

The NEA was established in 2013 as a vice-ministerial level agency under the NDRC. The NEA's responsibilities include formulating and implementing energy development plans and industrial policies, administering energy sectors including coal, oil, natural gas, power (including nuclear power), and renewable energy; conducting energy forecasting and taking precautionary measures; and participating in the formulation of policies related to energy such as resources, finance and taxation, environmental protection, and addressing climate change.

Local governments and administrative departments

Pursuant to the Renewable Energy Law, administrative departments of local governments in charge of energy are responsible for developing and utilizing renewable energy within their respective jurisdictions and preparing development plans for small-scale renewables projects in rural areas. Local governments and administrative departments are also involved in various aspects of renewable energy projects through their roles in permitting, zoning, construction and safety supervision. In practice, local regulations play an important role in permitting and project development.

Feed-in tariffs

The PRC has implemented power purchase prices akin to feed-in tariffs for an expanding scope of renewable electricity sources since 2009. The NDRC determines and publishes feed-in tariffs for an expanding scope of renewable electricity sources. The tariffs for biomass are currently applicable feed-in tariffs (as of January 2020). The tariffs for each energy source based on its evaluation of the cost of energy generation using that source. From 1 July 2019, tariffs for all wind projects (onshore and offshore) and concentrated solar projects have been determined through a competitive bidding process, subject to caps set by the applicable guideline feed-in tariffs published by the NDRC. The tariffs for biomass and hydropower power plants are set out in notices issued by the NDRC from time to time. We set out below a summary of the currently applicable feed-in tariffs (as of January 2020).

The Central Government has been actively promoting the use of renewable energy as part of a wider effort to address pollution concerns and comply with China's international commitments with respect to reduction of carbon emissions.
Government incentives

In 2005, a Renewable Energy Development Fund was established pursuant to the Renewable Energy Law to provide various incentives to renewable power producers, including:

1. funding the research and development of renewable energy, as well as the relevant exploration and development of information systems;
2. funding renewable power projects relating to biomass production in countryside and pasturing areas, and independent power generation power plants in remote areas and islands;
3. promoting the local manufacture of renewable power equipment;
4. providing allowances to renewable power purchasers calculated by reference to the price difference versus regular power consumption; and
5. providing direct subsidies to renewable power producers (being the difference between the relevant renewable power project’s tariff and the guideline feed-in tariff for coal fire power plants in the same province).

Funding for the Renewable Energy Development Fund mainly comes from two sources: (i) special funding arranged by the provincial governments; and (ii) additional power charges imposed on regular power users.

Topical issues

Blue sky action plan

On 27 June 2018, the State Council issued the "Three-Year Plan To Win the Battle for Blue Skies (Plan for Achieving the Target of Zero Fossil Fuel Emission By 2020)", which reiterated the objective to improve the environment via multiple industrial optimization methods, including further promoting renewable energy. For instance, the three-year plan specifically stipulated that non-petrochemical energy should account for no less than 15% of overall energy usage by 2020. To achieve this, the plan aims, among others, to develop hydropower in an orderly manner, develop nuclear power safely and efficiently, optimise wind and solar energy development, and develop geothermal energy. It also encourages developing biomass energy to provide various incentives to biomass-forming fuel boilers and bio-natural gas where resources are available. The consumption of renewable energy will be further encouraged, and, according to the plan, the problem of curtailing hydro, wind and solar power will be resolved.

Moving to competitive bidding

Since 1 July 2019, tariffs for all wind projects (onshore and offshore) and concentrated solar projects have been determined through a competitive bidding process, subject to caps set by the applicable guideline feed-in tariffs published by the NDRC. The NDRC also encourages competitive bidding for hydropower projects and some provinces have drafted implementation measures in this respect. Compared to the previous rules and policies, where the feed-in tariff for solar and wind power was set at a fixed rate with subsidies from the Renewable Energy Development Fund, the latest pricing mechanism of competitive bidding reflects the trend towards full price marketisation and the expectation that government subsidies and other protections for newly-originated power producers will gradually decrease. Under the new tariff policy, multiple market players are expected to bid for each wind and solar project and bid price uncertainty will likely be the deciding factor in bidding processes. As a result, efficient project construction will play an increasingly important role going forward.

Phasing out of government subsidies for offshore wind projects

Any offshore wind project approved before the end of 2018 will not receive national-level government subsidies unless it is synchronised to the grid before the end of 2020. Similarly, any offshore wind project approved between 1 January 2019 and 31 December 2020 will not receive government subsidies unless it is synchronised to the grid before the end of 2021. Then, from 1 January 2021, central government subsidies will no longer be available for offshore wind projects. That said, while official reports have circumscribed the NEA that emphasises the general phasing-out of the national-level government subsidies, especially for wind projects, in the coming few years, there will remain an expectation for local governments to continue to support projects in their locality on a case-by-case basis.

Curtailment

One of the key issues affecting the development of renewables in the PRC has been the practice of curtailment by grid operators. While the PRC has been actively developing its regional grids and ultimately phasing-out provincial distribution lines, and there has been significant and steady reduction of curtailment over the years, the issue remains an important one for renewable power producers.

According to public reports, 7% of wind energy was curtailed in 2018 (a significant improvement from 12% in 2017) and an average of only 4.2% of wind energy was curtailed in the first three quarters of 2019, with a record low of 0.75% in the second quarter of 2019. However, wind turbines not接入电网. However, the curtailment rate varies significantly between different regions. In 2018, the curtailment rates for wind projects in Xinjiang and Gansu provinces were 26% and 23%, respectively, dropping to 15.4% and 8.9% respectively, for the first three quarters of 2019, while many other provinces managed to keep curtailment rates below an average of 2% for the entirety of 2018.

Curtailment has developed mainly due to a shortage of grid capacity, despite statutory provisions,^{18} and a series of policy documents mandating the off-take and dispatch of renewable energy.

To remedy the issue, in May 2016 the NDRC issued a document known as “Document 625” and introduced a new approach to tackle curtailment. Document 625 does not propose to end curtailment completely, but provides for:
1. a new mechanism for allocating numbers of hours (to be determined by the NDRC and NEA) with guaranteed off-take of renewable energy by grid companies; 2. compensation for renewable power producers when curtailment causes them financial losses (e.g., bearing the costs if the curtailment is due to them generating electricity beyond allocated capacity); and 3. the possibility for renewable power producers to enter into power purchase agreements (with proper dispatch) with end-users for hours not guaranteed by grid companies.

According to Document 625, the NDRC and the competent local authorities will decide and publish the number of hours guaranteed off-take by grid companies for each province.

On 2 April 2018, the NEA issued a notice on Erasing the Burden on Renewables Sector Enterprises,^{19} prescribing a strict implementation by the grid companies of guaranteed hours of off-take of renewable power, a deadline for achieving full-scale compliance by no later than 2020 and a commitment that the NEA will suspend construction of new renewable projects in regions that fail to meet the guaranteed off-take requirements. In addition, the NEA was tasked with monitoring investments into domestic wind power projects and taking precautionary measures to tackle over-investment, and the resulting curtailment issues. For instance, on 5 March 2018, the NEA issued the Notice on the Results of Monitoring and Forecasting Risk of Wind Power Investments in 2017,^{20} in which Gansu, Xinjiang and Jilin provinces were given “Code Red” status. This meant that the local governments in these three provinces were required to suspend, prior approval for wind power projects and construction of the wind projects that had been previously approved were suspended or delayed. The notice also reiterated local authorities’ responsibility to apply the framework set out in Document 625 through local implementation measures, including in respect of the guaranteed off-take rate.

In addition, on 10 May 2019, the NEA and NORDC promulgated a notice on Establishing and Improving the Mechanism of Guaranteeing Renewable Power Consumption, which formally prompted the mandatory offtake of renewable energy. Under this new framework, the province must ensure that the consumption of renewable energy accounts for a certain minimum percentage (measured and assigned by the NEA) of overall power consumed within the province. This minimum consumption percentage comprises two parts: one is for all sources of renewable energy, and the other is for all sources of renewable energy excluding hydropower. As such, provincial governments are now under strict obligations to ensure that every grid companies and other power purchasers offtake a minimum amount of renewable energy (which cannot be limited to hydropower only) to guarantee the mandatory consumption of renewable energy (all sources) for each province in 2019 varied from 10% (Shandong Province) to 80% (Sichuan Province), and the minimum consumption will increase to 15% in 2020 (all sources excluding hydropower) varied from 2.5% (Chongqing Province) to 23% (Gansu Province).^{21}

Foreign investment and services opportunities

The PRC regulates foreign investment through various instruments. One of the most important is the Catalogue of Industries for Guiding Foreign Investment (the “Catalogue”), which defines which industries are prohibited, restricted or encouraged with respect to foreign investment.

Several activities relating to renewable energy (including construction of renewable power plants) are listed under the “encouraged” category in the Catalogue,^{22} and do not require a minimum level of domestic participation. Indeed, the Central Government increasingly seems to be seeking to attract foreign investment in the renewables and green energy sector. For example, the latest revision to the Catalogue added tidal current renewable power plants to the “encouraged” section and the requirement for domestic equity control of grid construction and operation businesses has been removed.

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13 This price range applies to solar power plants that are synchronised to the grid after 1 July 2019. The guideline feed-in tariff for solar power projects are determined among three regions determined by the NDRC based on the respective solar resources and remaining costs, bearing the costs if the curtailment is due to them generating electricity beyond allocated capacity;
14 The discount rate for wind power projects approved after 1 January 2020. The guideline feed-in tariff for onshore wind power varies among four regions determined by the NDRC based on the respective solar resources and remaining costs, specifically being 0.40 yuan/kWh, 0.45 yuan/kWh, 0.42 yuan/kWh and 0.50 yuan/kWh in 2018, and 0.29 yuan/kWh, 0.34 yuan/kWh, 0.38 yuan/kWh and 0.47 yuan/kWh in 2020. The guideline feed-in tariff for all offshore wind power projects is 0.75 yuan/kWh for the year 2020.
15 The feed-in tariff differs among provinces and will be determined by the NDRC based on the respective provincial government subsidies and other protections for newly-originated power producers.
16 The feed-in tariff of wind power for agricultural and forest biomass; the feed-in tariff for other types of biomass varies between 15% and 23%, respectively, dropping to 15.4% and 8.9% respectively, for the first three quarters of 2019, while many other provinces managed to keep curtailment rates below an average of 2% for the entirety of 2018.
21 The Catalogue is a catalogue issued by the NDRC and Ministry of Commerce ("MOFCOM") to regulate foreign investment in certain sectors in the PRC. The Catalogue comprises three sections (i) encouraged; (ii) restricted, and (iii) prohibited investment. See China’s Foreign Investment Regulations for more detail.
22 The “encouraged” category in the Catalogue, which defines which industries are prohibited, restricted or encouraged with respect to foreign investment.
Renewable Energy in India.

Regulatory framework for renewable energy in India

The renewable energy sector in India has witnessed significant growth as well as foreign and domestic interest in the last few years. As of 30 November 2019, the installed capacity of renewable energy in India reached about 100GW is planned for solar power, and 60GW for wind power and its commitment to promote clean energy initiatives has encouraged project sponsors to participate in the Indian renewable sector. In this brochure, we briefly discuss the regulatory regime and key policy initiatives applicable to renewable energy, including the key regulators and administrative authorities involved. We have also highlighted key topical issues that investors consider while doing renewable energy transactions in India.

Key sectoral issues

Financing and investment

> Rapidly declining tariffs influenced by competitive bidding processes have raised concerns on the sustainability and commercial viability of projects.
> Inherent seasonality of power generation adversely impacts cash flows of the renewable energy project during the non-production season.
> Capital expenditure and project costs are significantly higher when compared to conventional power projects.
> Cost of project financing through facilities availed from domestic financial institutions is expensive with sponsors having to bear higher interest rates.

Regulatory and other infrastructure related issues

> Considerable delay in providing grid connectivity except for projects that fall in the dedicated transmission corridor where access to grid infrastructure is swift and efficient.
> Insufficiency of sufficient contiguous land at competitive prices that is required for installation, delays in project acquisition and limited state support in the land acquisition process.

Overview of the applicable legal framework and government policies

The power sector was liberalised in the 1990s and private sector participation to liberalise the power market and privatisation of certain power distribution companies or transmission licensees in regard to any inter-state activities. The respective SERCs are responsible for adjudicating upon disputes involving generating companies in their jurisdiction, and also to refer any disputes to arbitration.

Ministry of New and Renewable Energy ("MNRE")

MNRE is the main administrative body that is responsible for promotion and development and commercialisation of renewable energy. State level nodal agencies have also been set up for the effective implementation of central and state schemes in relation to the promotion of renewable energy.

State Energy Development Agencies

The State Energy Development Agencies ("SEDA") are the state government authorities which are responsible for formulating and implementing renewable energy policies in their respective states in order to promote renewable energy in projects.

Transmission utilities

> Under the Electricity Act, the central government may nominate any government company to be a central transmission utility ("CTU").

Indian Renewable Energy Development Agency ("IREDA")

IREDA is a government company established to promote, develop and extend financial assistance for setting up projects relating to renewable energy in India. IREDA has prescribed detailed norms that set out the terms on which financing facilities are offered to renewable energy project developers. IREDA also plays a key role as a program administrator in respect of certain incentive schemes that have been formulated by the MNRE for solar and wind power projects.

Tariff Issues – renegotiation of power purchase agreements ("PPAs")

There are a number of Indian states where there have been challenges to renewable energy tariffs, including in executed PPAs. While legal challenges in states such as Gujarat have failed for so far, the most recent, and most serious challenge has been in Andhra Pradesh. Pursuant to an order dated 1 July 2019, the Andhra Pradesh Government had constituted the High Level Advisory Committee for PPAs ("NHLC") to review and renegotiate PPAs already in force in order to bring down the high wind and solar energy prices in Andhra Pradesh. Approved by the NHLC, the Indian renewable energy companies recruited legal challenges against the State Government's renegotiation bid, which the Andhra Pradesh Government had no say in the contracts which were signed between the distribution companies and the developers. The Armed Forces (Special Cases) Act, 1973, provides that the state that the Andhra Pradesh High Court, when sitting as the Supreme Court, has the exclusive jurisdiction to try any such disputes. The decision to try the appeals against the Andhra Pradesh Electricity Regulatory Commission ("APERC") for which a timeframe of 6 months (from 24 September 2019) has been set by the GH. The GH has not yet decided any issues, and one decision seems to have been reached on this matter as of yet.

January 2020

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Renewable Energy in Indonesia.

Which sectors are active?

As of the end of 2018, installed capacity in Indonesia is approximately 57.3GW. The majority of production uses coal and gas, while the installed capacity for renewable energy is 10GW. The country's power generation capacity composition, as of the end of 2018, is as follows:

- Coal remains as the main resource for power plants. This is so despite the various forms of renewable energy resources available in Indonesia, ranging from hydro to geothermal power.
- The Minister of Energy and Mineral Resources has issued the new Plan for the Provision of Electricity ("RUPTL") 2019-2028 for PT Perusahaan Listrik Negara ("PLN") under Decree No. 39k/MEM/2019 ("MEMR Decree 2019"). It is a 10-year electricity development plan for PLN. The new RUPTL has the following key points:
  - Capacity targets slightly increased due to revised economic growth targets;
  - New target for the next 10 years: 56.395GW by 2028;
  - Targeted energy mix in 2025:
    - Renewables remains the same (23%);
    - Coal will stay around the same (54.6%);
    - Gas will slightly reduce to 22% (from 22.2%);
    - Oil remains the same (0.4%);
  - The new RUPTL aims to achieve an electrification ratio for Indonesia of 100% by 2020. Based on the RUPTL, to achieve this level of electrification, power plants for a capacity of at least 56.395GW will need to be constructed by 2028, and 5.827GW is expected in operation by 2019. The electrification ratio in September 2019 was at 98.86% and is expected to achieve 100% in 2020.

How does the system work?

PT Perusahaan Listrik Negara ("PLN"), the state-owned operator, owns the vast majority of the power generation capacity, production and transmission networks for electricity. In addition to PLN's own generation, the Government has, for a number of decades, licensed independent power producers ("IPPs") to generate electricity for use in Indonesia. The licences allow the IPPs to generate a stated amount of electricity for use in Indonesia. This electricity must be sold under a power purchase agreement ("PPA") between the IPP and the relevant buyer of electricity which, in practice, is usually PLN. The price at which electricity may be supplied to PLN must be approved by the Ministries of Finance and of Energy and Mineral Resources. Tariffs do not cover the cost of generation. As PLN performs a "Public Sector Obligation", the Government provides substantial subsidies for the difference between generating costs and consumer tariffs. As of October 2018, total installed power generation capacity in Indonesia had the following breakdown of ownership:

- PLN (state-owned operator) – 40,487MW (71.68%)
- IPPs – 13,351MW (23.6%)
- Lease (private power utilities) – 2,672MW (4.7%)

Overview of recent developments in renewables

Under the National Energy Policy (2014), 23% of all electricity must be procured from renewable sources of energy by 2025. The 2019-2028 RUPTL stated a 23% renewables target by 2025. However, despite the increased number of PPAs signed by PLN this target is unlikely to be achieved by the Government.

From 2014 to 2016, tariff regulations were issued for geothermal, mini-hydro, solar, waste to energy, biomass and biogas IPPs. Wind only became subject to a regulated tariff regime in 2017 (see below). Progress has been sluggish due to resistance from PLN owing to the subsidy required to support these tariff regimes. In December 2016, the Indonesian Parliament rejected a proposed renewable energy subsidy to PLN. In 2017, new regulations were released, capping renewables tariffs by reference to PLN generation costs (see below); this was designed to avoid a subsidy to PLN from renewables development.

In 2017, a Presidential Regulation implementing the 2014 National Energy Policy was issued, providing the general long term policy at the national level regarding energy management. This regulation sets out the policy and strategy on national energy management until 2050 (to be revised every five years).

New tariff and procurement regime for renewable energy

Minister of Energy and Mineral Resources No. 50 of 2017 as amended by Regulation No. 53 of 2018 ("Regulation 50/2017")

Regulation 50/2017 took effect on 8 August 2017 and revoked the previous MEMR Regulations No. 12 of 2017 and No. 43 of 2017. This regulator applies to solar PV, hydro, wind, biomass, biogas, waste to energy, geothermal, wave and tidal, and bio fuel. Tariffs are indexed to PLN's generation costs, both locally within the relevant region and nationally. Pursuant to Regulation 50/2017 (i) if the local generation cost is higher than the national average, the tariff is capped at 85% or 100% of the local generation cost, and (ii) if the local generation cost is the same as or lower than the national average, the tariff will be determined by agreement of the parties.

The method of procurement applicable for the different renewable energy projects (i.e. solar PV, wind, hydro, biomass, biogas, wave & tidal and bio fuel) under Regulation 50/2017 is the direct selection method. However, for municipal solid waste and geothermal, in particular in the Sumatra, Java and Bali regions, this new tariff regime does not apply to PPAs already signed, as these will be grandfathered using existing tariffs. The focus is on using renewables in regions where they can lower (or at least not increase) PLN generation costs.

PLN’s generation cost

The Minister of Energy and Mineral Resources ("MEMR") has also issued a new regulation on the mechanism for setting PLN's BPP for particular procurement, both locally and nationally. The BPP will be set annually by MEMR on the basis of a proposal from PLN which references the BPP from the previous year (i.e. the BPP for 2018 will be applied for procurement from April 2019 to March 2020). This regulation does not set out a formula or components for calculating the BPP – it merely stipulates numbers – and there is no detail of the calculation. Exceptions apply to waste to energy and geothermal, in particular in the Sumatra, Java and Bali regions. A new tariff regime does not apply to PPAs already signed, as these will be grandfathered using existing tariffs. The focus is on using renewables in regions where they can lower (or at least not increase) PLN generation costs.

Government incentives and tax breaks

Under Presidential Regulation No. 4 of 2016 on the Development of Electrical Infrastructure as amended by Presidential Regulation No. 14 of 2017 ("Perpres No. 4"). power projects may obtain incentives from the central and/or regional government in the form of, among other things: (i) fiscal incentives, (ii) facilities for licensing and non-licensing and (iii) subsidies.
In addition, based on MOF Regulation No.130/PMK.08/2016 on the Granting of Government Guarantees for the Acceleration of the Development of Electrical Infrastructure (“Regulation 130/2016”), there are two types of fiscal guarantees provided by the Government to support underwritings of power infrastructure development. The first type is the loan guarantee for loans to PLN for development of its own power infrastructure. The second type is the business viability guarantee for IPPs to secure certain payment obligations of PLN. In order to obtain the guarantees as mentioned above, the power projects will have to be included on a list drawn up by PLN. This list is officially approved by the Ministry of Energy and Mineral Resources, and forwarded to the Directorate General of Risk and Financing Management.

The Government has provided: (i) income tax incentives in the form of reductions in taxable income, extended tax loss carry-forward period, accelerated depreciation and amortisation rates, and dividend WHT concessions; and (ii) various concessions on import duties and taxes. However, the ability of Government to achieve its new renewables target may depend on the willingness of the Government to provide further incentives (fiscal incentives or subsidies) to renewables developers.

Topical issues
Foreign ownership limits for small-scale renewables and shareholder structuring
Restrictions on foreign direct investment into a foreign capital investment company are set out in the Presidential Regulation No. 44 of 2016:

- Electricity generation capacity of >10 MW – maximum foreign ownership is 49% (open up to 100% in the first stage and the second stage).
- Electricity generation capacity of 1 MW-10 MW – maximum foreign ownership is 95%, or 100% during the concession period if tender is carried out through the PPP mechanism.
- Geothermal power plants less than or equal to 10 MW (open up to 67%)

The requirement that smaller-scale renewable projects (other than geothermal projects) between 1 MW and 10 MW are subject to a majority domestic ownership requirement gives rise to investment viability and operational challenges for prospective foreign sponsors in these types of projects. However, the Indonesian investment law (Law No. 25 of 2007) does not require that an investor’s economic benefits and returns must correspond to its shareholding portion. It is therefore open to sponsors to seek to:

- re-distribute the economic risks and returns from the project; and
- despite their 49% shareholding, exercise effective management and operational control over the project company.

There are various possible ways to do this (non-voting shares, preference shares, shareholder loans and service agreements, etc.), each raising different issues under Indonesian law that need to be assessed and managed carefully by the sponsors.

New tariff regime
The government is preparing a new presidential regulation on the feed-in tariff for renewable energy and is expected to issue by first quarter of this year. The new feed in tariff will not reference PLN’s BPP as it is applied under the current regulation. This formulation of referencing PLN’s BPP has meant that renewables projects end up competing with coal-fired power plants and as a result are often not commercially viable. Under the draft presidential regulation, the tariff will be divided into two stages, the first stage (covering the first 10-12 years) will have a higher tariff to underpin the investor’s return of investment and debt repayment, and thereafter the tariff will decrease. There is currently no specific information on the relative sizes of the tariff during the first stage and the second stage.

The new feed in tariff will apply to hydro, solar, biomass, and wind, whilst geothermal will have a different tariff structure. However, the new feed in tariff for renewable energy will not apply to existing PPAs.

Risk allocation under the Power Purchase Agreement
The General of Risk and Financing Management.

Regulation of the Minister of Energy and Mineral Resources No.10 of 2017 on Basic Provisions of Power Purchase Agreement (“Regulation 10/2017”) which prescribes certain IPP tariff allocation concepts that PLN must follow for certain power projects was amended by Minister of Energy and Mineral Resources Regulation No. 49/2017 (“Regulation 49/2017”) and Minister of Energy and Mineral Resources Regulation No. 10/2018 (“Regulation 10/2018”). Regulation 10/2018 caused much consternation in the industry, as it appears to codify certain risk allocation principles – particularly with regard to political risk and PLN grid risk – that roll back safeguards that have for years underpinned the bankability of Indonesian IPPs. As a result, Regulation 49/2017 and Regulation 10/2018 were introduced to improve upon the position surrounding risk allocation principles with regards to political risks and government related force majeure for the IPPs. However, there are still some concerns affecting the IPPs under Regulation 10/2017 which remains unchanged in Regulation 49/2017 and Regulation 10/2018 including the absence of deemed dispatch payments to IPPs where a force majeure event affects PLN’s electricity grids.

Currency issues
Indonesian Law No. 7 of 2011 on Currency, together with the implementing regulations issued by Bank Indonesia, imposes certain currency restrictions, including that Rupiah must be used to settle financial obligations within the territory of Indonesia. PBI 173/2015 also provides that business entities must state the price for goods and/or services only in IDR. It is further clarified by SEBI 17/11 that business entities are prohibited from stating the price for goods and/or services simultaneously in both IDR and foreign currency (dual quotation).

BPP figures are denominated in USD and IDR which leaves open the possibility to denominate the tariff in the PPA in USD under Regulation 50/2017 although payable in Rupiah. For recent large-scale power projects, PLN has accommodated sponsor and lender concerns on currency risk inherent in this arrangement by entering into a tripartite converting agreement with a local bank under which PLN will guarantee the USD amount on conversion back from Rupiah. However, we expect that PLN may be reluctant to offer this concession for the smaller-scale renewables developments, and accordingly residual currency risks will need to be assessed and managed carefully by the sponsors.

Land acquisition and spatial layout plans
Power and infrastructure projects in Indonesia continue to be plagued by land acquisition problems, particularly in the populated areas of Java Island.

In 2012, Indonesia enacted a new regulatory framework governing land procurement in the public interest. Power plants and electricity transmission distribution fall within the scope of this law. The recent successful application of these regulations in the context of the Central Java IPP project has given renewed hope that these new laws can actually deliver large-scale infrastructure projects that would once have been incapable of development.

However, another key problem in this area is the misalignment between the national and regional spatial layout plans. The Government has recently introduced amendments to the spatial planning regulatory framework to accelerate amendments to spatial plans and potentially for strategic projects to proceed on the basis of their inclusion in the national spatial layout plan. Nevertheless, only time will tell if these changes will in practice facilitate the issuance of local permits, such as location permits required for land acquisition, that have been held up due to misalignment between the national and regional spatial layout plans.

March 2020
This publication is intended merely to highlight issues and not to be comprehensive, nor to provide legal advice, and its contents should not be relied upon as legal advice, either generally or in relation to any specific transaction.
Renewable Energy in Japan.

We set out below a brief summary of the regulatory regime for the renewable sector in Japan and some topical issues relating to the renewables sector.

**Which sectors are active?**

**Current Energy Mix**

Japan’s main source of energy is thermal power with coal and LNG representing the most prominent source of electricity generated in its current energy mix. Renewable energy (excluding hydro power) has increased from 2.2% in FY2010 to 9.2% in FY2018.

<table>
<thead>
<tr>
<th>Fuel Source</th>
<th>2018 Energy Mix (%)</th>
<th>2018 Renewable Mix (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thermal</td>
<td>76.9</td>
<td></td>
</tr>
<tr>
<td>Nuclear</td>
<td>6.2</td>
<td></td>
</tr>
<tr>
<td>Hydro</td>
<td>7.7</td>
<td></td>
</tr>
<tr>
<td>Renewables</td>
<td>9.2</td>
<td></td>
</tr>
<tr>
<td>PV</td>
<td>65.1</td>
<td></td>
</tr>
<tr>
<td>Wind</td>
<td>7.8</td>
<td></td>
</tr>
<tr>
<td>Geothermal</td>
<td>2.6</td>
<td></td>
</tr>
<tr>
<td>Biomass</td>
<td>24.5</td>
<td></td>
</tr>
</tbody>
</table>

Source: Comprehensive Energy Statistics, Agency for Natural Resources and Energy

**Switching to renewable energy**

Renewable energy consists of 22.4% of the Government’s 2030 Energy Mix plan. While the certified capacity of solar power already exceeds the target amount in the 2030 Energy Mix, wind and biomass energy will need significant investments in order to achieve the respective targets.

<table>
<thead>
<tr>
<th>Fuel Source</th>
<th>2030 Energy Mix (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LNG</td>
<td>27</td>
</tr>
<tr>
<td>Coal</td>
<td>26</td>
</tr>
<tr>
<td>Oil</td>
<td>3</td>
</tr>
<tr>
<td>Nuclear</td>
<td>20-22</td>
</tr>
<tr>
<td>Hydro</td>
<td>8.8-9.2</td>
</tr>
<tr>
<td>PV</td>
<td>7</td>
</tr>
<tr>
<td>Biomass</td>
<td>3.7-4.6</td>
</tr>
<tr>
<td>Wind</td>
<td>1-1.1</td>
</tr>
<tr>
<td>Geothermal</td>
<td>1-1.1</td>
</tr>
</tbody>
</table>

Source: Agency for Natural Resources and Energy

**How does the system work?**

**Certification by METI of a renewable energy generator**

- A renewable energy generator is only eligible for the benefits prescribed under the feed-in tariff scheme if it obtains a certification from METI in respect of the renewable energy facility (the “METI Certification”). The METI Certification is obtained after satisfying certain requirements such as:
  - an ability to generate power on a stable and efficient basis;
  - proper repair and maintenance including the ability to repair the facility within three months;
  - agreed location;
  - output measurement;
  - conversion efficiency;
  - construction and operation costs recorded and provided to METI.
- Since 1 April 2019, the application for the METI Certification must be accompanied by documentary evidence of the consent to the interconnection provided by a utility.
- The METI Certification may be revoked if any of the requirements are no longer satisfied. However, unless revoked, it remains valid for the entirety of the procurement period.
- If there are any material changes in respect of a renewable energy facility including, for example, a change in the proposed capacity of the renewable energy facility that has received a METI Certification, METI must certify the change based on the new specifications of the renewable energy facility. The circumstances in which changes must be certified and in which the tariff may be amended were expanded by regulations introduced on 31 August 2017. The circumstances in which changes will need to be certified and in which the tariff will be changed include the following events:
  - in solar projects with a capacity of less than 100kW, the capacity of the photovoltaic panels is increased by more than 3%.
  - in solar projects with a capacity of greater than 100kW, the capacity of the photovoltaic panels is increased by greater than 3%.
  - the capacity of the photovoltaic panels is decreased by greater than 20% (for example, by reducing the number of photovoltaic panels); or
  - there is a major change in circumstances which requires the existing interconnection agreement to be re-executed. A “major change” is a change in relation to certain important terms and conditions in the interconnection agreement, including:
    - the interconnection agreement is terminated due to, for example, the generator’s failure to pay the cost of constructing the interconnection or failure to comply with the curtailment measures applicable to the renewable energy facility (please see Curtailment below).
    - the generator proposes a change in the grid network to which the renewable energy facility is connected (excluding relocation of the renewable energy facility).
    - the generator proposes a change in the method of constructing new grid lines (i.e. aerial or underground); or
    - the generator proposes a change in the person constructing new grid lines (i.e. from the applicant to the utility).

**Key Parties / Legislation**

**Regulatory bodies**

The Ministry of Economy, Trade and Industry of Japan (“METI”) and the Japanese Agency for Natural Resources and Energy (a governmental agency under the supervision of METI (“ANRE”)) are the key governmental bodies regulating power in Japan. METI is responsible for regulating and prescribing the feed-in tariff regime in Japan, certifying renewable energy generators and prescribing the applicable tariff (in certain cases).

**Power Offtake**

- **Utilities:** The Japanese electricity market has been substantially deregulated and is open to a variety of domestic operators in terms of power generation and retailing (but not in respect of transmission and distribution which are further detailed as below). However, the traditional 10 utility companies are still the main providers of the off-take arrangements for electricity that is generated. These are:
  - Chugoku Electric Power Company (CEPCO);
  - Chubu Electric Power (Chuden);
  - Hokkaido Electric Power Company (Hokuden);
  - Hokkaido Electric Power Company (HEPCO);
  - Kyushu Electric Power (Kyuden);
  - Kansai Electric Power Company (KEPCO);
  - Okinawa Electric Power Company (Okin); and
  - Tokyo Electric Power Company (TEPCO).
- In addition to those utilities, the IPPs (Independent Power Producers) (including, among others, Electric Power Development Co., Ltd. (known as “1-Power”)) is also a distinguished participant in the electricity market.
  - **Grid lines:** Unlike most nations, Japan doesn’t have a single national grid but has separate eastern and western grids for electricity transmission.
  - **Planned separation of power generation from transmission and distribution:** The traditional 10 utility companies listed above have been the exclusive providers of the power transmission and distribution services in their respective territories, however the new regulations taking effect from 2020 will require those services to be provided by a separate corporate entity from a power generator (which may be within a same corporate group) while the exclusivity scheme remains in place. TEPCO, the largest utility company in Japan, has already spun off its electricity transmission business to TEPCO Power Grid, Inc.

**Laws and Regulations**

The Act on Special Measures Concerning Procurement of Electricity from Renewable Energy Sources by Electric Utility Companies ("Renewable Energy Act") and related regulations (including the enforcement ordinances thereof) is the key legislation for the renewable energy businesses in Japan. In addition, the guidelines published by METI in connection with the Renewable Energy Act (including the “Wind Power Business Guidelines”) are also crucial as the failure to comply with these guidelines may result in the revocation of licenses or approvals granted by METI.
Renewable Energy in Japan.

Following concern that in some instances utilities had withheld
minor changes to the renewable energy facility (including a
change to the project site) do not require METI to certify the
changes, and only require a notification to be made to METI.

Feed-in tariff regime (implemented until 1 April 2020)

- Under the feed-in tariff regime, utilities are required to enter
  into a power purchase agreement and an interconnection
  agreement with a renewable generator certified by METI. The
  relevant utility must:
  - take all power produced by the renewable facility (a
    volume guarantee subject to certain exceptions);
  - pay a specified tariff for all power actually received; and
  - offer a connection point to the generator (that the generator
    must pay for).

- The idea is to de-risk renewables from market pricing risks
  based on a pro forma power purchase and interconnection
  agreement prepared by METI with little/no scope for additional
  risk transfer and no capacity payment (i.e. the utility does not
  take resource risk). In our experience, there is little scope to
  negotiate the terms of this pro forma power purchase and
  interconnection agreement.

- Utilities are compensated for purchasing renewable electricity
  by a surcharge imposed on end user consumers, who thereby
  bear the additional cost of the renewable energy.

- Following concern that in some instances utilities had withheld
  interconnection applications from renewable energy generators,
  METI made various changes to the feed-in tariff regime in
  respect of: (i) curtailment, (ii) tariff, (iii) additional refusal rights
  for “designated utilities” (defined as those utilities who have
  exceeded their grid capacity) to enter into an interconnection
  agreement if the generator is unable to demonstrate that it will
  be able to start generating within a certain period after signing
  the interconnection agreement (iv) measures with respect to delays
  in development of projects.

- Once determined, the tariff applies for the duration of the
  procurement period. The feed-in tariff is not automatically adjusted
  by reference to any variable elements such as inflation, retail
  energy price etc.

- Prior to the amendments in January 2015, in principle, the
  tariff was set on the date of application for interconnection to
  the grid line. Following the amendment, the tariff was fixed
  by reference to the date the interconnection agreement was
  entered into between the generator and the relevant utility.
The tariff payable by the utility under the regime up to 2019 is
  specified by METI and we set out below the current tariff table.

<table>
<thead>
<tr>
<th>Type of Renewable Energy</th>
<th>Feed-In Tariff (JPY/kWh) FY2017</th>
<th>Feed-In Tariff (JPY/kWh) FY2018</th>
<th>Feed-In Tariff (JPY/kWh) FY2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solar</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;10kW</td>
<td>25</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>10-500kW</td>
<td>17</td>
<td>17</td>
<td>17</td>
</tr>
<tr>
<td>500-2000kW</td>
<td>18</td>
<td>18</td>
<td>18</td>
</tr>
<tr>
<td>&gt;2,000kW</td>
<td>Reverse Auction (see below)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wind</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Onshore</td>
<td>20</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>Offshore</td>
<td>36</td>
<td>36</td>
<td>36</td>
</tr>
</tbody>
</table>

- It has been reported that METI is planning to introduce a new
  regime to replace the Feed-in tariff regime in 2020 (please see
  Post-Fit Frame Work below).

Revers auction for solar power

(Implemented from 1 April 2017)

- As referred to above, from 1 April 2017 a competitive reverse
  auction process has been introduced for solar projects with
  capacity greater than 2MW.

- Developers who meet certain criteria and pay the required
  deposit will have the opportunity to submit a bid and compete
  for the right to supply a fixed amount of power to the utilities
  at auctions which are expected to be held between one and
  three times per year. Bids in the auction will be accepted
  starting from the lowest until the capacity available at the
  relevant auction is fully proceeded.

- The ceiling bidding price was set at 21JPY/kWh in the first
  auction which took place in November 2017. Only 141MW
  was awarded in November 2017 out of a possible 500MW,
  with surrounding issues such as land grid connection
  and terms of the auction security deposits being cited as
  possible reasons. The maximum bidding price in the auction
  took place in August 2018 was reduced to 15.5JPY/kWh
  (not disclosed in advance of the auction) – each of the 9
  developers taking part in the August 2018 auction exceeded
  this price, and accordingly none of the proposed 250MW
  was awarded. In the third solar power reverse auction which
  took place in November 2018, the whole auctioned amount
  of 106.96MW was awarded with the lowest bidding price of
  14.25JPY/kWh. The first biomass power reverse auction for
  20MW project was held in November 2018, however no bid
  was awarded because all bidding prices exceeded the
  maximum price of 20.60JPY/kWh (not disclosed in advance
  of the auction). According to the minutes of the Calculation
  Committee for Procurement Price, etc. under METI held in
  December 2018, the maximum quota for the reverse auction
  process will be 750MW for 2019.

Marine Renewables Energy Act implemented

Since April 2019

- A new act to allow long-term use of open sea zones for
  offshore wind (Act of Promoting Utilization of Sea Areas
  in Development of Power Generation Facilities Using
  Marine Renewable Energy Resources (“Marine Renewable
  Energy Act”) has been officially enacted and implemented since
  April 2019. It allows wind farm operators to use offshore
  sea areas for a period of 30 years (previously, the right of
  possession in general common sea areas could only be
  retained for 3-5 years).

- Potential operators are set to bid in public auctions for
  the sea areas under the new legislation. The government will
  approve the winner of bids to use the feed-in-tariff price
  which currently stands at JPY 36 (USD 33.9 cents) per kWh.

- As part of the Government’s mid-term energy mix policy, the
  Government is targeting an increase in wind power generation
  to 10GW by March 2031.

- Regarding the status of the selection process of the offshore
  wind power promotion areas under the Marine Renewables
  Energy Act, a press release was published on 30 July 2019
  by METI. The press release listed 11 areas as “areas at a
certain preparatory stage” and among those areas specified
  4 “promising areas”, being (i) Akita, Noshiro-shi, Mitane-cho
  and Ojika-shi offshore area, (ii) Akita, Yurihonjo-shi offshore
  area, (iii) Chiba, Choshi offshore area and (iv) Nagasaki,
  Goto-shi offshore area.

- Among these 4 areas, the Nagasaki, Goto-shi offshore area
  has been officially designated as the promotion area in
  December 2019. The process for designation of the other
  3 areas as promotion areas (including the meetings of the
councils for necessary consultations under the Marine
Renewables Energy Act is under progress.

Topical issues

Curtailment

- In order to avoid excess supply of electricity to the grid lines, utilities are permitted to direct certain renewable energy
generation projects to stop generation by installing solar photovoltaic facilities, wind turbines, and biomass generation facilities (hydro and geothermal are considered as base load electricity and as such are not subject to curtailment).

- Further, while “designated utilities” can impose unlimited
curtailment without financial compensation, there are usually
caps on permitted curtailment before utilities must pay
compensation.

- 30 days p.a. (if interconnection application was accepted before 26 January 2015)

- 360 hours p.a. (for photovoltaic renewables energy) and
  720 hours p.a. (for wind renewables energy) (if interconnection application has been accepted on or after
  26 January 2015)

- Measures for Prompt Commencement of Operation

- If an interconnection agreement is entered into after 1 August 2016, the relevant renewable energy developer (irrespective of
  whether a METI Certificate has been obtained) must prepare a business plan to start operation of the relevant renewable
  energy facility within three years from 1 April 2017 (or from a later date when a new METI Certificate is obtained).

- If it fails to comply with this, the procurement period will be
  shortened. This does not apply if the reverse auction process
  implemented on 1 April 2017 was used to determine the tariff
  of the relevant renewable energy facility.

- Moreover, METI published an announcement on 5 December 2018 setting out certain cut-off periods for solar power
  generation projects which have secured a high feed-in-tariff during FY2012 - FY2014 but not started operation for a
  number of years. The consequence of any failure to commence operation by the cut-off date is a reduction in the feed-in-tariff.

- This policy is applied to solar power generation projects with capacity of 10kW or more which (i) secured the feed-in tariff
  or 40kW or 36hours p.a. (as applicable) during FY2012 to FY 2014, (ii) entered into a connection agreement with the
  relevant transmission and distribution company on or before 31 July 2016 and (iii) submitted its business plan pursuant to
  the feed-in-tariff scheme renewed on 1 April 2017 an or before 30 September 2017.

Introduction of Power Producer’s Basic Charge

- The introduction of the power producer’s basic charges is under discussion and the amount of the basic charge is
  determined by the power producer in proportion to the usage of the transmission and distribution lines for the purpose of
  achieving a later allocation of the burdens in relation to the maintenance, operation and upgrading costs for the
  transmission and distribution systems. According to ANRE the amount of the power producer’s basic charges will be around
  1,800kW annually, payable throughout the project period.

- The application of the additional charges to the existing projects will affect the existing cash flows of the projects
  (which may, if applicable, have been agreed with the relevant financiers at the time of origination). In view of such adverse
  impacts certain mitigation measures are being considered (details not yet available). However, these measures might
  not be available to the projects originated during the period from 1 July 2014 to 30 June 2017 where the profits of the
  renewable energy projects have been adequately secured in determination of the Feed-in-Tariff price. The details of the
  power producer’s basic surcharges and the related mitigation measures are still being discussed by ANRE.
Post-FIT Framework

In accordance with the Renewable Energy Act which provides for a fundamental review of the same by the end of March 2020, a reform towards the post-fit framework is under progress and is expected to take place in 2021. As a part of this process, ANRE announced the referral of renewable technologies to the Renewable Energy Assessment Committee in December 2019, which referred to the feed-in premiums (“FiPP”) approach as the post-fit framework. In the proposed FiPP framework, power generators will receive the difference between the fixed base price and the reference price. The reform proposal discusses two approaches for determining the reference price, namely (a) the floating reference price to be adjusted every 30 minutes in accordance with the market price (where the premiums will fluctuate) and (b) the fixed reference price (where the premiums will be fixed). The details of the reference price is to be determined in consideration of the recommendation from Calculation Committee for Procurement Price, etc.

Power Purchase Agreement and Interconnection Agreement – Key Terms

As referred to above, for projects for which a METI has entered into. The term sheets by the utilities are published on METI’s website. The pro forma power purchase and interconnection agreement will not apply. Each utility has a generator failing to pay the utility for electricity supply. Under the Renewable Energy Act and the Electricity Business Act, a power purchaser and/or the grid line operator may refuse to enter into a power purchase agreement and interconnection agreement unless certain mandatory terms and conditions are incorporated. The pro forma power purchase and interconnection agreement and in practice there is very little scope for the terms of this pro forma agreement to be negotiated.

In respect of projects procured under the reverse auction process, the METI pro forma power purchase and interconnection agreement will not apply. Each utility has provided a term sheet for METI approval on which their interconnection agreement will be entered into. The term sheets by the utilities are published on each utility’s website and are on substantially the same terms as each other and the METI pro forma power purchase and interconnection agreement. A summary of some of the key terms are set out below.

The pro forma power purchase and interconnection agreement for projects expected to have more than 10MW capacity is fixed at 20 years from the start of operations, with no minimum availability or dispatch requirements. Usually a utility is obliged to purchase electricity output for a period of 10 years from the start of operations, with no minimum availability or dispatch requirements. Electricity supply to the utility exceeding demand – please see Curtailment above. Under the pro forma power purchase and interconnection agreement, no compensation is payable by the utility if curtailment occurs due to exceptional circumstances which no one could foresee and which METI considers should only be in exceptional cases.

> force majeure affecting the plant;

> the utility reasonably considering that power from the plant is not being dispatched at the grid limit or quality of its power supply;

> a generator failing to pay the utility for electricity supply.

Under the Renewable Energy Act and the Electricity Business Act, a power purchaser and/or the grid line operator may refuse to enter into a power purchase agreement and interconnection agreement unless certain mandatory terms and conditions are incorporated. The pro forma power purchase and interconnection agreement includes:

> no compensation being payable for loss suffered unless this is caused by the utility (e.g. no force majeure, political force majeure, change in law protection);

> curtailment provisions;

> rights for the ability to terminate on revocation of the METI Certification and for certain development delays; and

> Japanese language, law and courts.

The pro forma power purchase and interconnection agreement provides for termination rights for either party on insolvency, unremedied breaches of the agreement or applicable law, and where the other party to the agreement becomes an anti-social force or performs anti-social acts. Additionally, a utility may terminate the agreement on the generator’s inability to continue power generation (which METI suggests is to mean discontinuation over a long period). A generator may also terminate the agreement if the utility ceasing to be licensed or for breach of payment obligations.

The agreement envisages that the utility grid connection work must be paid for by the operator.

January 2020

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Hydro

Hydropower potential in Malaysia is assessed at 29,000MW, with 85% of potential sites being located in East Malaysia. To date, Malaysia has utilized its hydro potential mainly through the construction of large hydropower facilities, with about 6,128.1MW installed. As of 2017, Malaysia had a renewable capacity (inclusive of large hydropower plants) of 7.3GW, of which hydropower contributed 82%.

The Malaysian government has expressed a goal that energy provided by small hydro schemes be increased to 490MW by 2020. Small hydropower development (in Malaysia, small hydropower refers to run-of-river schemes up to 30MW in capacity) is in line with the Small Renewable Energy Power Programme which was introduced between 2001 and 2005 under the 8th Malaysia Plan and the FiT (as defined below) system. In 2018, installed capacity of small hydropower under the FiT scheme was approximately 50MW, with plants in progress up to 2023 representing approximately 296.59MW, the largest share of all renewables under the FiT scheme. TNP (defined below) has a target of achieving small hydro capabilities of 1,700MW by 2025.

Solar

Solar PV potential in Malaysia is estimated at 6,500MW. As solar has consistently outperformed other green technologies in Malaysia, the government expected that most new renewable intakes will come from solar farms. To realise this expectation, the government has pushed several rounds of public auctions for solar projects (as noted below), with installed capacity of Solar PV under the FiT scheme reaching approximately 383MW in 2018.

The development and implementation of solar PV in Malaysia is potentially less complicated than other renewable technologies, due to the constant availability of solar energy, the fact that solar technology is seasoned in the market and that Malaysia is the world’s second largest manufacturer of PV modules and third largest manufacturer of PV cells.

Biomass / biogas

In 2018, installed combined capacity of biomass and biogas under the FiT scheme was approximately 1,458MW. Being a major agricultural commodity producer in the South East Asian region, Malaysia is seen to be well positioned to promote the use of biomass as a renewable energy source. Biomass resources are abundant, especially in the palm oil plantation industry. The oil palm milling industry has the potential to fuel power generation facilities from solid biomass, palm shell and fruit fibres.
Renewable Energy in Malaysia.

How does the system work?

Offtakers / Generators

Tenaga Nasional Berhad ("TNB"), Syarikat SESCO Berhad ("SESCO"), and Sahab Energy Corporation Sdn Bhd ("SESB") are the companies in Malaysia (and the most common offtakers). They cover the regions of Peninsular Malaysia, Sarawak and Sabah, respectively. TNB is a company listed on Bursa Malaysia, the Malaysian stock exchange. SESCO was fully privatized whilst SESB is owned by both TNB and the state government of Sabah. TNB still dominates the power sector in Peninsular Malaysia as license to build, operate and own power plants were only issued to independent power producers in the early 1990s after the national power block was divided to overcome power outages and introduce competition in the power generation sector. However, the new government has stated an intention to carry out structural reforms of the market to add competition across the electricity supply value chain.

Policy Makers

Energy Unit of the Ministry of Economic Affairs (the "Energy Unit") aims, in general, to encourage economic growth and focuses on planning and developing the energy sector in Malaysia. Key functions of the Energy Unit include formulating policies for the energy sector, including strategies relating to the sustainable development of the energy sector, increasing utilization of renewable energy and providing allocation for the implementation of energy-related projects and programs.

The Ministry of Energy, Science, Technology, Environment & Climate Change ("MESTECC") was established in 2018 after the general election and a restructuring of different ministries. It aims to accomplish energy sustainability and wealth creation through science, technology and environmental sustainability. It is responsible for implementing new renewable energy projects and programmes.

Regulators

Energy Commission Act 2001 is mandated under the Renewable Energy Act 2011 (the "SEDA") established under the Energy Commission Act 2001 and is a statutory body responsible for improving the efficiency and transparency of the energy sector in Malaysia. It is responsible for the implementation of energy-related projects and programmes. It focuses on planning and developing the energy sector in Malaysia for Commercial Operation In 2021 - Announcement Of Shortlisted Projects. These are five hydropower projects in Malaysia. The proposed sites are under category P3 (10.00MW to 30.00MW) in Peninsular Malaysia.

Government incentives and tax breaks

Feed-in Tariff ("FiT")

The FiT was introduced in 2011 by the Renewable Energy Act and was designed to increase electricity generation from renewable sources. The FiT system obliges entities licensed to distribute electricity ("Distribution Licensees") to buy from certain companies / individuals who hold a feed-in approval certificate issued by SEDA, at a set FiT rate (fixed annually). The Distribution Licensees will pay for renewable energy supplied to the electric grid for a specific duration (up to 21 years).

In order to fund this program, a surcharge is levied on bills from consumers who utilize more than a set amount of electricity (300kWh). The collected fund is then used to pay for renewable energy generated through the feed-in mechanism. This surcharge was increased from 1% to 1.6% in 2015, which led to an increase of an additional RM325 million to the fund from the initial RM300 million.

The FiT scheme applies to biogas, biomass, geothermal and small hydro. The FiT scheme used to apply to solar, however given the good uptake of solar projects by developers, solar projects are now being tendered by the Energy Commission under the large scale solar scheme. Due to the maturity of solar technology, the costs have become increasingly competitive (e.g. Solar PV panel prices have fallen 80% since 2009). Green Technology Financing Scheme ("GTFS")

The GTFS aims to improve the supply and utilization of green energy by providing financial assistance to producers of renewable energy. RM32 billion has been allocated to the scheme under the 2019 budget and this will form the take of soft loans supported by the Malaysian government. However, the government will bear 2% of the total interest rate (limited to the first 7 years only) and guarantee 60% of the total debt financing amount via the Credit Guarantee Corporation Malaysia Berhad (with the remaining 40% of the total debt financing amount risk borne by participating financial institutions).

The scheme applies to financing amounts of up to RM100m for producers of green technology (a 15-year tenure), RM50m for users of green technology (a 10-year tenure), and RM25m for energy services companies ("ESCOs") (a 5-year tenure).

Applicants must be Malaysian-owned (a3i) companies.

Participating financial institutions include all commercial financial institutions, Islamic financial institutions and development financial institutions in Malaysia and the GTFS is limited to new, retrofit, expansion projects and energy performance contracting that incorporate green technology elements in Malaysia that have not yet been funded.

Pioneer Status:

In 2017, Multiconsult, a Norwegian engineering and design firm, was awarded contracts to perform feasibility studies for five hydropower projects in Malaysia. The proposed sites are on the Padas, Liwang and Tuaran rivers in the northern part of Borneo. In July 2019, SESB announced that it had identified hydropower sites with 200MW to be potentially developed in the next 10 years.

Tax incentives

Malaysian incorporated companies that undertake green technology projects outside green technology services may apply to the Malaysian Investment Development Authority for the grant of green technology tax incentives. Such tax incentives could include, depending on the type of green technology.

Principal Status:

This incentive provides an exemption from income tax of 70% to 100% of statutory income for 5 to 10 years.

Investment Tax Allowance ("ITA"):

The Malaysian government provides incentives in the form of an investment tax allowance for the purchase of green technology and green technology assets. The ITAs allow 100% of qualifying capital expenditure incurred up to FY 2020 to be offset against 70% of statutory income. ITAs are also available for solar projects.

Green Technology Projects ("GTPs"):

These are projects related to renewable energy, energy efficiency, green buildings, green data centres and waste management. Note that projects which have been approved with FiT for solar by SEDA are not eligible for the ITA.

Purchase of Green Technology Assets ("GTAs"):

These are green technology products, equipment or systems used to conduct the renewable energy and green technology projects and resources and must be government approved.

Import duty and sales tax exemption: Companies may apply for import duty and sales tax exemption on imported machinery, equipment, material, parts and consumables used directly in the generation process and that are not produced locally. For locally purchased equipment, machinery, materials, parts and consumables, full exemption on sales tax may also be applied. All applications for import duty and sales tax exemption will be evaluated by the amount of capital expenditure incurred up to FY 2020.

Income Tax Exemption ("ITE") for Green Technology Services ("GTSs"):

There is an ITE of 100% of statutory income up to FY 2020 for qualifying GTSs relating to renewable energy, energy efficiency, electric vehicles, green buildings, green data centres, green certification and verification and green certifications.

Foreign ownership

Under Malaysia’s foreign exchange administration policies, non-residents are free to invest in any form of assets in Malaysia. Non-residents may also remit out of Malaysia divestment proceeds, profits, dividends or any income arising from these investments free from withholding tax. However, foreign companies that wish to apply to sell renewable energy to a Distribution Licensee will have to partner with a Malaysian company as, to be eligible for the FIT, foreign ownership is limited to 49%. Additionally, no change in the shareholdings of such companies is permitted for at least two years from its commercial operation date without the prior approval of the Minister of MESTECC.

Renewable Energy projects can be carried out on either government-owned land or on private land. Legal ownership of private technology projects land outside green technology services may apply to the Malaysian Investment Development Authority for the grant of green technology tax incentives. Such tax incentives could include, depending on the type of green technology.

Hot topics

The Large Scale Solar ("LSS") programme

Since 2016, the EC has held large-scale solar auctions in Malaysia. The LSS tender is a competitive open bidding process in which the EC invites persons with the relevant industry experience, suitable technical and financial capabilities and related resources to develop, operate and maintain large scale PV power plants in Malaysia. Foreign participation in solar projects is allowed but is capped at a 49% shareholding interest in the bidding consortium.

The Government’s target capacity for the LSS programme is 1000MW by 2020, with additional capacity capped annually at 200MW for Peninsular Malaysia and 50MW for Sabah/Labuan. The first round of bidding took place in 2016 with a tender for 250MW worth of LSS plants, which was followed in 2017 by the second round of bidding (with an aggregate capacity of 460MW). The third bidding round ended on 19 August 2019 and the following bidders have been shortlisted in December 2019 by the Energy Commission of Malaysia to develop LSS Photovoltaic plants ("LSS") which are scheduled for commercial operation in the later half of 2020:

(i) Venga GmbH and Goans Solar Bhd. (100MWac in Manang, Trengganu) and Impian Burmna Bhd. (100MWac in Masang, Trengganu);
(ii) JKH Renewables Bhd. and Solarpack Asia Sdn. Bhd. (100MWac in Labuan);
(iii) Energy Corporation Singapore Ltd. (100MWac in Pekan, Pahang);
(iv) Kontrumit Bintang Maya Sdn. Bhd. and Hanwha Energy Corporation Singapore Ltd. (100MWac in Pekan, Pahang);
(v) Kenyan Renewables Bhd. and Solarpack Asia Sdn. Bhd. (1000MWac in Semporna, Tawau, Sabah). These are focusing on solar projects related to renewable energy, energy efficiency, electric vehicles, green buildings, green data centres, green certification and verification and green certifications.

Foreign ownership

Under Malaysia’s foreign exchange administration policies, non-residents are free to invest in any form of assets in Malaysia. Non-residents may also remit out of Malaysia divestment proceeds, profits, dividends or any income arising from these investments free from withholding tax. However, foreign companies that wish to apply to sell renewable energy to a Distribution Licensee will have to partner with a Malaysian company as, to be eligible for the FIT, foreign ownership is limited to 49%. Additionally, no change in the shareholdings of such companies is permitted for at least two years from its commercial operation date without the prior approval of the Minister of MESTECC.

Finance studies for Malaysian hydropower projects

In 2017, Multiconsult, a Norwegian engineering and design firm, was awarded contracts to perform feasibility studies for five hydropower projects in Malaysia. The proposed sites are on the Padas, Liwang and Tuaran rivers in the northern part of Borneo. In July 2019, SESB announced that it had identified hydropower sites with 200MW to be potentially developed in the next 10 years.

Feasibility studies for Malaysian hydropower projects

In 2017, Multiconsult, a Norwegian engineering and design firm, was awarded contracts to perform feasibility studies for five hydropower projects in Malaysia. The proposed sites are on the Padas, Liwang and Tuaran rivers in the northern part of Borneo. In July 2019, SESB announced that it had identified hydropower sites with 200MW to be potentially developed in the next 10 years.

16  RM325 mil (based on renewable energy fund), reported by The Star, 10 February 2014.

18  Energy Commission of Malaysia’s website - Request For Proposal (RFP) for the development of Large Scale Solar Photovoltaic (LSSP) Plants In Peninsular Malaysia for Commercial Operation In 2021 - Announcement Of Shortlisted Bidders.
Renewable Energy in Malaysia.

The Eleventh Malaysia Plan (2016 – 2020)

The government of Malaysia publishes a blueprint for the allocation of the national budget for five-year periods at a time. The Eleventh Malaysia Plan is the latest plan to be published and covers the period from 2016 to 2020 and charts a shift towards green growth. Increasing the share of renewables in the energy sector forms a key part of this strategy.

Renewable energy capacity is expected to reach 2,080MW by 2020, contributing to 7.8% of total installed capacity in Peninsular Malaysia and Sabah. Steps to achieve this include exploring new renewable energy sources such as wind, geothermal, and ocean energy, enhancing the capacity of personnel by providing training through SEDA and implementing net energy metering.

Renewable Energy Transition Roadmap 2035 (the “Roadmap”)

The Roadmap is being developed (targeting publication by the end of 2019) to explore possible strategies and an action plan to realise the government’s target of 20% of electricity being generated by renewable sources by 2025. The Roadmap will explore: (i) the cost, benefits and effectiveness of establishing a mandatory renewable energy certificates (REC) market; (ii) the possibility of a peer to peer energy trading platform where solar producers can sell their excess electricity to consumers who have rooftop constraints, thus enabling the possibility of a virtual net metering system; and (iii) the utility to purchase 100% renewable energy from power utility companies.

The Green SRI Sukuk (green Islamic bonds)

In 2017, the World Bank, the Central Bank of Malaysia (Bank Negara) and the Securities Commission Malaysia collaborated to develop the green Islamic finance market in Malaysia. Apart from traditional sukuk21 and local bank loans, the Green SRI Sukuk is a possible financing method.

It has the potential to channel the US$2 trillion22 Islamic finance market towards the funding of green and sustainable investment projects. Recent Green SRI Sukuk issuances include: (i) the first ever Green SRI Sukuk, issued in July 2017 by Tadatur Energy, raising RM250 million to finance a solar power plant in Sabah, Malaysia; (ii) Quantum Solar raising RM1 billion in October 2017; and (iii) two further Green SRI Sukuk issuances in Malaysia as of April 2018.23

Major benefits of financing by Green SRI Sukuks stem from the SRI Sukuk Framework, whereby institutions raising funds are entitled to claim 90% of the costs of engaging experts to review the project, subject to a maximum of RM350,000 per issuance. The scheme is open to domestic and foreign issuers and for any currency, provided the facility is issued in Malaysia. Additionally, the issuers enjoy tax deductions on the issuance costs until FY 2020.

Uncertain land zoning requirements

One key challenge faced by solar power plant developers is the uncertainty of state government requirements in respect of the category of land use for the development of solar projects. Given the need for large open areas, most of the land identified for solar projects is agricultural land. Some states allow for solar projects to be undertaken on agricultural land, while other states require the land to be re-zoned for industrial use. Guidelines issued by the EC suggested that land to be used for large scale solar power plants (as discussed below) may be optimised for other economic activities such as agriculture. Thus, the EC seemed to suggest that the development of solar projects should be permitted on agricultural land. As it is important for power plant developers to be aware of the applicable requirements in respect of the category of land use for solar projects, there is a need for official clarification on this point and ideally, a uniform approach being taken across all the states in Malaysia.

January 2020

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Overview

Renewable energy is not currently a major feature of the energy mix in the Republic of Korea (“South Korea”), with electricity generation dominated by nuclear, coal and gas. However, South Korea stands at a turning point. A combination of weakening political support for nuclear following the Fukushima disaster in Japan and increasing concern about air quality issues has sparked an increasing interest in developing renewable and other lower carbon solutions to electricity generation in the country. President Moon Jae-in’s energy policy indeed focuses on reducing energy generated from coal and nuclear and increasing new renewable and other clean energy.

Which sectors are active?

South Korea’s energy market is currently dominated by coal, nuclear and LNG; renewable energy represented 6.9% of the power mix in 2018 (slightly up from 6.4% in 2017). The country’s power generation composition by source of energy, as of 2017 and 2018, was as follows:

<table>
<thead>
<tr>
<th>Source</th>
<th>2017 (%)</th>
<th>2018 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coal</td>
<td>43.10</td>
<td>41.90</td>
</tr>
<tr>
<td>Gas</td>
<td>22.80</td>
<td>26.80</td>
</tr>
<tr>
<td>Oil</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Nuclear</td>
<td>26.80</td>
<td>23.40</td>
</tr>
<tr>
<td>Renewables</td>
<td>6.40</td>
<td>6.90</td>
</tr>
</tbody>
</table>

Source: Statistics from KEPCO and MOPIE.

Breakdown 2017

- 44% Coal
- 17% Gas
- 10% Nuclear
- 7% Renewables

Breakdown 2018

- 44% Coal
- 10% Gas
- 21% Nuclear
- 7% Renewables

Source: Statistics from Korea Energy Agency.

21. A sukuk is an interest-free bond that generates returns to investors without infringing the principles of Islamic law (Shariah).

Table 1: South Korea’s energy market composition by source of energy, 2017 and 2018.
A drive for renewable energy

In 2016, South Korea and the Paris Agreement adopted at the climate conference held in Paris in December 2015 (COP21). The Paris Agreement will replace the Kyoto Protocol from 2021, whereby South Korea has committed to reducing its projected greenhouse gas emission level in 2030 by 37%.

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The generation, transmission and distribution of electricity in South Korea is a regulated business with the principal legislation governing such regulation being the EB Act. The EB Act provides, for among other things: (i) the granting of licences to engage in specified electricity businesses (including, in particular, generation, transmission, distribution and retail sales); (ii) protection of electricity customers; (iii) prohibition of certain unfair practices; (iv) wholesale electricity market, constitution and responsibilities of the electricity regulatory body; and (v) safety management relating to electricity equipment.

The Renewable Energy Act prescribes key matters in relation to new and renewable energy businesses including the rules and procedures with respect to the RPS scheme discussed below.

Grid allocation and connection

KEPCO presently holds a monopoly over the transmission, distribution and retail sales of electricity in South Korea. Development of renewable energy projects are required to enter into a grid connection agreement with KEPCO, the terms of which are regulated by KEPCO’s Rules on the Use of Transmission and Distribution Facilities.

KEPCO is required to agree to connect to its grid all electricity generated from renewable energy projects. KEPCO must give its confirmation to MOTIE that there is sufficient grid capacity to connect the new project.

Permitting regime

The permitting process for the development of a renewables project in South Korea involves liaising with different authorities, including, MOTIE, KEPCO, local government, Korea Electrical Safety Corporation, the New and Renewable Energy Center, the Ministry of Environment, the Public Waters Management Agency and the Ministry of Oceans and Fisheries.

An offshore wind project, for example, would require at least:

- the issuance of an electricity business licence;
- the issuance of an environmental impact approval;
- the issuance of a development activity permit;
- approval / reporting of a construction plan for electric installation;
- pre-use inspection;
- execution of electricity supply and demand contract;
- registration as member of the KPX; and
- facility certification.

Government incentive programmes

RPS System

The key support mechanism for new renewable energy projects in South Korea is the RPS scheme which replaced an existing government incentive programme ("RPS") with a market-based mechanism ("RPS II") in 2012. Under the RPS scheme, power generation companies are required to acquire a certain percentage of their electricity from renewable energy sources. The RPS scheme requires generators both to feed energy from renewable sources into the grid and to purchase energy from solar and wind power generators. KEPCO is mandated to purchase electricity generated from renewable energy sources at a premium and to sell the electricity to end users.

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In December 2017, the Ministry of Trade, Industry and Energy ("MOTIE") announced its plan to increase the share of renewable energy from 7.0% in 2016 to 20% by the year 2030 – the so-called “Renewable Energy 2030” implementation plan.

New and Renewable Energy Center

The New and Renewable Energy Center was established in 1980 to implement “energy use rationalisation” projects for the purposes of reducing greenhouse gas emissions and promoting a healthy economic development of Korea. The New and Renewable Energy Center is responsible for systematisation of energy consumption pattern, identification of energy saving methods in energy intensive businesses and providing energy audit service.

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KEPCO

The majority state-owned Korea Electric Power Corporation ("KEPCO") controls almost all aspects of electricity generation, transmission, distribution and retail sales in South Korea. In 2001, KEPCO’s generation assets were divided into six separate subsidiary power generation companies (the "GenCos"). Although this initial restructuring included plans to subsequently divest KEPCO’s subsidiaries, the reform stalled in 2004, and KEPCO still owns each of them. Apart from KEPCO, a small number of independent power producers (“IPPs”) participate in the South Korean electricity market. KEPCO and the GenCos produce about 67% of all generation and IPPs produce the remaining 33% as of January 2020.

KRX

In 2016, South Korea and the Paris Agreement adopted at the climate conference held in Paris in December 2015 (COP21). The Paris Agreement will replace the Kyoto Protocol from 2021, whereby South Korea has committed to reducing its projected greenhouse gas emission level in 2030 by 37%.

KRX, also known as the Korea Electric Utility ("the EB Act"), is vested with the responsibility of establishing and implementing overarching policies relating to the energy sector including the electricity market. KRX’s primary responsibilities include (among others): (i) preparation of policies for the supply and demand of electricity; (ii) issuing licences for electricity generation businesses; (iii) approval of charges for the use of KEPCO’s transmission and distribution assets; (iv) oversight of KEPCO and KRX; (v) oversight of compliance by electricity generation businesses; and (vi) approving applications for the construction of new electricity generation projects and conducting pre-use inspections.

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The New and Renewable Energy Center focuses on the development of new and renewable energy. The Korea Energy Agency issues the renewable energy certificates ("RECs") to each generation facility in accordance with the certification and weight value assignment by the New and Renewable Energy Center.

Legislative framework

The primary legislative instruments for the renewable energy sector in South Korea are the EB Act and the Act on the Development, Use and Diffusion of New and Renewable Energy ("the Renewable Energy Act"), in addition, a range of other laws and regulations (together with subordinate presidential and ministerial decrees) are relevant to the development of renewable projects in South Korea including (among others) those relating to the environment, construction, planning, land and sea-bed rights, fisheries rights and health and safety.

Restrictions on investment

Foreign direct investment is not generally restricted or limited in South Korea. KEPCO is a regulated business with the principal legislation governing such regulation being the EB Act. The EB Act provides, for among other things: (i) the granting of licences to engage in specified electricity businesses (including, in particular, generation, transmission, distribution and retail sales); (ii) protection of electricity customers; (iii) prohibition of certain unfair practices; (iv) wholesale electricity market, constitution and responsibilities of the electricity regulatory body; and (v) safety management relating to electricity equipment.

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Overview

From a position of having a relatively low profile in the regional and international renewable energy community, Taiwan has fast become a focus of developers, investors and others as it seeks to pursue an ambitious agenda of rebalancing its energy mix away from larger imported fossil fuels and towards home grown wind, solar, hydro and other renewable energy sources.

The key driver of this is the government’s decision to phase out nuclear power (which currently accounts for approximately 10% of Taiwan’s installed generation capacity) as well as to reduce its reliance on imported coal. Taiwan’s geographical characteristics and relatively friendly investment environment make it a particularly attractive target for inbound investment from foreign investors.

In particular, the award of 5.5GW of grid capacity to new offshore wind projects in 2018 is expected to result in a high level of activity for this market in the coming years. The successful financing in 2018 of the 128MW Formosa 1 project, Taiwan’s first utility-scale offshore wind farm, was followed by the 640MW Yunlin offshore wind farm and the 376MW Formosa 2 offshore wind farm in October 2019, demonstrating the appetite of the local and international bank market and international export credit agencies to provide long term project finance for offshore wind projects in Taiwan. To date, Linklaters has been appointed to significant roles on all six Taiwan offshore wind projects that have come or are coming to market up to end of 2020, representing a total of around 2.7GW of capacity and over US$12.5bn of debt financing.

Which sectors are active?

Taiwan’s gross energy production was 275,579GWh in 2018. 1 Taiwan’s main source of energy is thermal power with coal, nuclear and gas (including LNG) representing the most important sources of fuel in the island’s energy mix. The composition of installed generation capacity as of 2018 is as follows:

- Coal: 36.9%
- LNG: 31.8%
- Nuclear: 8.6%
- Renewables: 11.9%
- Fuel oil: 5.9%
- Pumped-storage hydro: 5.0%

In 2016, the government announced that, by 2025, it would phase out nuclear power generation. To plug this energy gap, the government announced ambitious targets to increase the amount of electricity generated from renewable sources to 20% of the island’s energy supply. The November 2018 referendum results indicated broad support for the move away from coal generation (although there was resistance to the planned phase out of nuclear generation), and the MOEA has since announced its commitment to the government’s renewables policy and further targets for offshore wind beyond 2025 (see below).

The return of the incumbent Democratic Progressive Party (DPP) government to office following the January 2020 elections is expected to contribute to continuity in energy policy.

Switching to renewable energy

The composition of Taiwan’s renewable energy generation capacity as of 2018 is as follows:

- Wind: 33.5%
- Solar: 43.8%
- Biomass: 1.3%
- Waste: 10.1%
- Conventional Hydro: 33.5%

The government aims to achieve the increase in renewable generation by developing the following sources of renewable energy generation capacity:

- Solar: 20GW by 2025
- Offshore wind: 5.5GW by 2025 (see below)
- Onshore wind: 1.2GW by 2026

To support the development of renewable energy the government has in 2009 passed the Renewable Energy Development Act ("REDA") which provides for a feed-in tariff system (see further details below) and offers a range of incentives to renewable power producers. The REDA was amended in May 2019 to include provisions that will stop the RED Fund from being used for subsidising renewable energy electricity tariffs.

The Electricity Business Act (the "EB Act") was also subject to substantial reform in 2017, including provision for the future liberalisation of the electricity market but also addressing the development of renewable energy by providing for preferential measures for renewable power producers, such as priority grid connection and dispatch. Further regulatory changes have sought to facilitate the expansion of the offshore wind sector in Taiwan, such as incentives and subsidies, land, zoning and construction arrangements.

As well as legislative and regulatory measures, the government has also announced measures to streamline approval processes and significant investment in infrastructure designed to facilitate the development of renewable energy – such as the expansion of Taichung Port as a base for the development of the offshore wind sector.

How does the system work?

Role of Taipower

Taiwan Power Generation Company, commonly referred to as Taipower (台電), is the state-owned company under the control of the Ministry of Economic Affairs ("MOEA"). Taipower is the main energy producer in Taiwan and currently has a legal monopoly on the distribution and sale of electricity.

Commercial private power producers are currently required to enter into a power purchase agreement ("PPA") with Taipower, although the recent amendments to the EB Act provide for:

- the liberalisation of Taipower’s monopoly over the purchase of all electricity generation in Taiwan and paves the way to direct sales of electricity by renewable power producers to end-users;
- the unbundling of Taipower’s electricity generation business and its transmission / distribution business, and
- the establishment of a ‘transmission wheeling’ service by Taipower to access the grid.

Regulatory bodies

- MOEA responsibilities include setting the policies for electricity businesses and the power prices / charges, setting technical regulations and overseeing the administration of electricity facilities. The MOEA’s energy-related functions are delegated to the Bureau of Energy ("BOE").
- Local authorities’ responsibilities include the inspection of users’ electrical equipment, overseeing the administration of the electricity construction industry and managing disputes between electricity enterprises and the public on the use of land.

Permitting regime

The permitting process for the development of renewables projects in Taiwan can be relatively complex and involve various authorities including the Environmental Protection Administration, MOEA, BOE, Taipower, local governments and other government agencies.

For example, an offshore wind project will require:

- an EIA Approval;
- an Establishment Permit;
- a Recordation Approval;
- entry into a PPA (see below);
- a Work Permit; and
- an Electricity Business Licence.

as well as a number of other consents and approvals.

Government incentives and tax breaks

Renewable energy is pursued by Taipower according to feed-in tariffs determined by the government (see below). In addition, the recent amendments to the EB Act provides other incentives to renewable IPPs, including:

- subsidy programmes (such as equipment subsidies and demonstration subsidies) and the establishment of a specific fund to finance such subsidies. The fund is financed by power producers in proportion to their non-renewable electricity generation capacity;
- exemption from import duties for renewable power equipment during construction or operation (provided there is no manufacturer for such equipment in Taiwan); and
- various rights and arrangements for renewable IPPs in relation to zoning and construction regulations.

Feed-in tariffs

Feed-in tariffs ("FITs") for wind, solar, hydropower, biomass and waste are set in New Taiwanese Dollars ("NTD") on a yearly basis by the MOEA pursuant to the EB Act and the REDA. The REDA provides that the purchase price for renewable energy must not be lower than the average cost for domestic fossil fuel power production.

Once fixed, the FITs for each category of renewable energy are entered into with Taipower (as grid operator) for 20 years based on the relevant FiT contained in the REDA amendment has not been confirmed.

Restrictions on investment
There are generally no restrictions on foreign investment in the renewables sector in Taiwan (except for investment with national security concerns or investment from mainland China). Taiwan operates a “negative list” control on investments by foreign nationals whereby investments are allowed unless they are restricted or prohibited. Electricity generation is not subject to specific restrictions, although foreign investors are required to undergo an application process and obtain a foreign investment permit from the Investment Commission of the MOEA. The grant of a foreign investment permit also entitles foreign investors to certain fundamental investor protections including in relation to adverse government action.

Hot topics
Capacity allocations for offshore wind
In early 2018, the MOEA released the “Directions for Allocating Installed Capacity of Offshore Wind Potential Zones” (the “Allocation Directions”) which provided for a selection and bidding process for the allocation of 5GW of grid capacity to offshore wind projects which obtained approval of an Environmental Impact Assessment by the end of 2017. The Allocation Directions provided for:
> a selection procedure for the award of fixed FITs for:
   > a total capacity of 0.5GW for grid connection in 2020 (Tier 1 or “first track” projects); and
   > a total capacity of 3GW for grid connection between 2021 and 2024 (Tier 2 projects); and
> a selection and bidding procedure for the award of a competitively determined tariff, for a total capacity of up to 2GW (Tier 3 projects).

The application process included certain requirements regarding (among other things) technical and financial capacity, permitting, confirmation regarding the prospects of achieving specified grid connection milestones, information on compliance with local content requirements and, in the case of the Tier 3 bidding process, the developer’s proposed tariff.

The MOEA awarded a total of 3,836MW of grid capacity through the selection process (Tier 1 and Tier 2 above) in April 2018, and subsequently awarded 1,664MW of grid capacity through the bidding process (Tier 3 above) in June 2018. A full list of the projects applicable that were allocated capacity in the selection process and the bidding process can be found on the MOEA website.

The tariff applicable to the Tier 1 and Tier 2 projects will be the FIT applicable to offshore wind at the time the relevant project entered into the PPA with Taipower, whereas the tariffs applicable to the Tier 3 projects were determined by competitive auction and are significantly lower than the current fixed FIT for offshore wind. There are also differences in the terms of the Grid Contract applicable to each of Tier 1, 2 and 3 (see below).

The MOEA is expected to release details of the next phase of capacity allocations for offshore wind in Q1 of 2020, providing for 10GW of capacity to be brought online from 2026 – 2035. It is expected that this will be awarded on an auction basis.

Grid Contract
All projects awarded capacity pursuant to the Allocation Directions are required to comply with the requirements set out in a grid contract (“Grid Contract”), to be entered into with the MOEA. The form of Grid Contract will be different for each of Tier 1, 2 and 3 and will address (among other things):
> achievement of key project milestones by specified dates;
> environmental compliance and funding obligations;
> local content requirements;
> ongoing reporting obligations;
> liability regime (including liquidated damages, other rights to claim damages and MOEA termination rights);
> requirement to provide performance bonds;
> restrictions on changing in shareholder, and lock-in of original project investors; and
> other secondary and ancillary obligations.
Projects will also be bound by the terms of the original selection proposals submitted to MOEA.

Offshore wind PPA
The model form of PPA that is used by Taipower for offshore wind projects regulates:
> the purchase of electricity by Taipower; and
> the connection of offshore wind projects to Taipower’s electricity grid.
It is a short document which does not seek to provide a comprehensive allocation of risks as between the generator and Taipower/government (as would be the case under a typical long form emerging markets PPA). Instead, it is more analogous to a prescribed statutory PPA used in the context of a feed-in-tariff model in developed and/or liberalised markets, and should be read in conjunction with the applicable regulatory regime in Taiwan.

The model PPA for offshore wind is in a very similar form to the model form of PPA used in numerous existing onshore wind and solar projects in Taiwan. In a positive development for investors and financiers, the model PPA for offshore wind was updated by Taipower in December 2019 to extend / introduce the cure period for certain termination events. There are also ongoing discussions between stakeholders and Taipower on further improvements, including the availability of step-in rights and security over the PPA to financiers. These discussions have already resulted in some positive developments that we would be happy to discuss.

Amended Vessel Rules
The Maritime and Port Bureau (“MPB”) has recently amended the Rules on the Applications for Non-ROC Working Vessels entering Taiwan (the “Rules”). The amended Rules require Taiwan vessels to be used for transportation of crew, goods and supplies for offshore wind projects. For other kinds of vessels used in an offshore wind project, developers are required to prioritise the use of Taiwan vessels over non-Taiwan vessels. Additional certification and MOEA consent requirements apply to non-Taiwan vessels that are proposed to be used for offshore wind projects.

Development Assistance Fund
The MOEA announced in February 2018 draft Rules on the Usage, Supervision and Management of Power Development Assistance Funds (the “Draft Usage Rules”), which require projects to make contributions (based on electricity generated) to the ‘Power Development Assistance Fund’. The Fund will be used mainly to promote local community development and welfare. The Draft Usage Rules were finalised and announced by the MOEA on 16 April 2019.

Solar power
The government intends to achieve 20GW of solar PV installed capacity by 2025 through the development of both rooftop and ground-mounted systems, which are expected to respectively account for 35GW and 17GW. There have also been examples of floating solar technologies use.
In September 2016, the government approved a “Solar PV Two-Year Promotion Project” targeting to achieve 1.52GW of additional solar power generation within a two-year period. Under this plan, the government was to:
> create a “single-window” system to speed up administrative procedures
> designate further locations for solar power generation
> plan for grid expansion
> encourage domestic banks to provide financing
> amend laws and regulations to reduce regulatory restrictions on the development of solar power projects.

The government is also encouraging the development of small scale capacity through the “Million Rooftop PVs Program”.

January 2020
This publication is intended merely to highlight issues and not to be comprehensive, nor to provide legal advice, and its contents should not be relied upon as legal advice, either generally or in relation to any specific transaction.

10 This does not cover the Formosa 1 project, which is designated as one of three pilot projects, and was awarded capacity prior to the implementation of the Allocation Directions.

### Which sectors are active?

As of October 2019, Thailand’s existing generation capacity was 52,322.77MW, with a total generating capacity of renewable projects of 11,843.98MW (22.68% of Thailand’s total power generating capacity). The country’s renewable power generation capacity composition, as of October 2019, was as follows:

- **Biogas**: 4.47%
- **Biomass**: 28.71%
- **Solar**: 25.18%
- **Wind**: 26.24%
- **Hydro**: 26.24%

### Renewable Energy Generation Plan

In April 2019, the Ministry of Energy approved an updated Power Development Plan (“PDP”), which covers the period from 2018 to 2037 (“PDP 2018”). According to the PDP 2018, the total generating capacity of renewable projects will represent 33% of the total power generating capacity in the country by 2037 – an increase from 13% under the PDP 2015.

According to the PDP 2018, the total power generating capacity of the country at the end of 2037 will be 77,211MW. The amount of generating capacity to be added to achieve this target at the end of 2037 is 16,985MW (taking into account the existing generating capacity as at December 2017 of 60,226MW less the expected retiring generators as at 2037 of 26,310MW).

The development of new renewable energy projects will also be contemplated in the Alternative Energy Development Plan 2018-2037 (“AEDP 2018”), which is currently being prepared and will be aligned with the policy of PDP 2018. The total generating capacity of renewable projects in Thailand by 2037 is expected to be 18,696MW (in accordance with the PDP 2018 target). 9,000MW of this is expected to come from solar, which could be in any type of solar project including solar farms, subject to the discretion of the Minister of the Ministry of Energy. Under AEDP 2018, hydro and biomass will no longer be promoted.

Thailand’s target renewable installed capacity mix by 2037 is as follows:

- **Solar**: 25.18%
- **Wind**: 12.72%
- **Hydro**: 26.24%
- **Biomass**: 28.71%
- **Biogas**: 4.47%
- **Waste**: 2.68%

### How does the system work?

#### Power Offsetters

The power generated from projects in Thailand will be sold under power purchase agreements (“PPAs”) between project companies to one of the following offtakers (with a few exceptions whereby some of the power can be sold directly to industrial users):

- **Electricity Generating Authority of Thailand (“EGAT”)** - a state enterprise responsible for the generation, procurement and transmission of electricity to other electricity authorities for further distribution to end users.
- **Provincial Electricity Authority (“PEA”)** - a state enterprise responsible for the distribution and sale of electricity to end users in provincial and suburban areas, most of the electricity that PEA distributes to end users is purchased from EGAT and the rest is purchased directly from the power producers under the Very Small Power Producer Program.

#### Private Power Producers

Apart from EGAT, there are three types of private power producers in the Thai power market:

- **Independent Power Producer (“IPP”)** - a large scale power producer with a generating capacity of more than 90MW, IPPs will sell all electricity to EGAT under a long-term PPA, and in order to participate as an IPP, EGAT will – from time to time (to date there have been three rounds of IPP bidding in the country, in 1994, 2007 and 2012) – invite the private sector to submit a bid to sell electricity to EGAT in accordance with the needs set out in the PDP (as defined above) approved by the NEPC (as defined below) and the Cabinet.

#### Regulatory bodies

The National Energy Policy Council (“NEPC”) has:

- authority to set a policy and a strategy for energy management and development, including an energy price;
- authority to assign other relevant authorities/entities to put such policy into practice and to follow up on the progress made by such authorities/entities;
- the leader of the National Council for Peace and Order (the Prime Minister) as its chairman; and
- the Office of Energy Policy and Plan which acts as the NEPC’s secretariat office.

The Ministry of Energy (“MOE”):

- has authority over the procurement, development and management of energy;
- has state sectors, such as the Office of the Minister, Office of the Permanent Secretary, Department of Mineral Fuels, Department of Energy Business, Department of Alternative Energy Development and Efficiency, Energy Policy and Planning Office; and
- supervises certain state enterprises, such as EGAT and PTT Public Company Limited.

The Energy Regulatory Commission (“ERC”):

- was established by the Energy Industry Act B.E. 2550 (2007) as an independent regulatory agency;
- has authority to regulate the energy industry in accordance with government policy (e.g. policy from the NEPC);
- has authority to prescribe the size/type of energy business in which an energy business licence is required or exempted;
- has authority to prescribe steps and procedures for the purchase from/selection of the seller (e.g. the bidding process); and
- has authority to issue permits/licences required for energy business, including those pursuant to regulations under the responsibility of other governmental agencies (with such governmental agencies’ recommendation) such as factory licences and building construction permits.

### Government incentives

**Tariffs – Adder/FiT**

The Adder scheme was first introduced in 2007 and was subsequently revised in 2009 and 2010 to encourage the development of renewable energy projects, whether SPP or VSP projects. Both were entitled to receive an Adder, which was an additional amount paid on top of the price of electricity over a specified period.

Despite its popularity, the Adder scheme was cancelled in January 2016 and has been replaced by a Feed-in-Tariff or FiT scheme. Adder is still applicable to those operators who signed PPAs prior to the announcement of the discontinuance of the Adder programme, but new applicants cannot further apply for the Adder as EGAT/MEA/PEA have already issued announcements to discontinue the purchase of electricity under the Adder system.

Please note that the tariff will be reduced pursuant to the PDP 2018 with the rates to be finalised following the issuance of the AEDP 2018.

Adder rates for each type of renewable energy are set out in the table below:

<table>
<thead>
<tr>
<th>Energy</th>
<th>Adder (THB/kW-hour)</th>
<th>Special Adder for 4 districts in Songkla Province (THB/kW-hour)</th>
<th>Total Adder for 4 districts in Songkla Province (THB/kW-hour)</th>
<th>Supporting Period After COD (years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Biomass</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) ≤ 1MW</td>
<td>0.50</td>
<td>1.00</td>
<td>1.50</td>
<td>7</td>
</tr>
<tr>
<td>(b) &gt; 1MW</td>
<td>0.30</td>
<td>1.00</td>
<td>1.50</td>
<td>7</td>
</tr>
<tr>
<td>2. Biogas</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) ≤ 1MW</td>
<td>0.50</td>
<td>1.00</td>
<td>1.50</td>
<td>7</td>
</tr>
<tr>
<td>(b) &gt; 1MW</td>
<td>0.30</td>
<td>1.00</td>
<td>1.50</td>
<td>7</td>
</tr>
<tr>
<td>3. Waste</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) Preservation or covering in a hole</td>
<td>2.50</td>
<td>1.00</td>
<td>3.50</td>
<td>7</td>
</tr>
<tr>
<td>(b) Thermal Process</td>
<td>3.50</td>
<td>1.00</td>
<td>4.50</td>
<td>7</td>
</tr>
<tr>
<td>4. Wind</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) ≤ 50kW</td>
<td>4.50</td>
<td>1.50</td>
<td>6.00</td>
<td>10</td>
</tr>
<tr>
<td>(b) &gt; 50kW</td>
<td>3.50</td>
<td>1.50</td>
<td>5.00</td>
<td>10</td>
</tr>
<tr>
<td>5. Water</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) ≤ 50kW and 200kW</td>
<td>0.80</td>
<td>1.00</td>
<td>1.80</td>
<td>7</td>
</tr>
<tr>
<td>(b) &lt; 50kW</td>
<td>1.50</td>
<td>1.00</td>
<td>2.50</td>
<td>7</td>
</tr>
<tr>
<td>6. Solar</td>
<td>6.50</td>
<td>1.50</td>
<td>8.00</td>
<td>10</td>
</tr>
</tbody>
</table>

Adder rates for each type of renewable energy are set out in the table below*:

<table>
<thead>
<tr>
<th>Capacity (MW)</th>
<th>FIT (THB/unit)</th>
<th>FIT (THB/unit) (floating as per core inflation)</th>
<th>FIT (THB/unit)</th>
<th>Supporting Period (years)</th>
<th>FIT Premium (THB/unit)</th>
<th>Projects in 4 southern provinces of Thailand**</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Waste (mix system)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) ≤ 1MW</td>
<td>3.13</td>
<td>3.21</td>
<td>6.34</td>
<td>20</td>
<td>0.70</td>
<td>0.50</td>
</tr>
<tr>
<td>(b) between 1 and 3MW</td>
<td>2.61</td>
<td>3.21</td>
<td>5.82</td>
<td>20</td>
<td>0.70</td>
<td>0.50</td>
</tr>
<tr>
<td>(c) &gt; 3MW</td>
<td>2.39</td>
<td>2.69</td>
<td>5.08</td>
<td>20</td>
<td>0.70</td>
<td>0.50</td>
</tr>
<tr>
<td>2. Waste (preservation or covering in a hole)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) ≤ 1MW</td>
<td>5.60</td>
<td>-</td>
<td>5.60</td>
<td>-</td>
<td>0.50</td>
<td>-</td>
</tr>
<tr>
<td>(b) &gt; 1MW</td>
<td>2.80</td>
<td>1.00</td>
<td>3.80</td>
<td>20</td>
<td>0.70</td>
<td>0.50</td>
</tr>
<tr>
<td>3. Biomass</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) ≤ 1MW</td>
<td>3.13</td>
<td>2.21</td>
<td>5.34</td>
<td>20</td>
<td>0.50</td>
<td>0.50</td>
</tr>
<tr>
<td>(b) between 1 and 3MW</td>
<td>2.61</td>
<td>2.21</td>
<td>4.82</td>
<td>20</td>
<td>0.40</td>
<td>0.50</td>
</tr>
<tr>
<td>(c) &gt; 3MW</td>
<td>2.39</td>
<td>1.85</td>
<td>4.24</td>
<td>20</td>
<td>0.30</td>
<td>0.50</td>
</tr>
<tr>
<td>4. Biogas (wasted water)</td>
<td>3.76</td>
<td>-</td>
<td>3.76</td>
<td>20</td>
<td>0.50</td>
<td>0.50</td>
</tr>
<tr>
<td>5. Biogas (energy plant)</td>
<td>2.79</td>
<td>2.55</td>
<td>5.34</td>
<td>20</td>
<td>0.50</td>
<td>0.50</td>
</tr>
<tr>
<td>6. Water ≤ 200kW</td>
<td>4.90</td>
<td>-</td>
<td>4.90</td>
<td>20</td>
<td>-</td>
<td>0.50</td>
</tr>
<tr>
<td>7. Wind</td>
<td>6.06</td>
<td>-</td>
<td>6.06</td>
<td>20</td>
<td>-</td>
<td>0.50</td>
</tr>
<tr>
<td>8. Solar</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) household rooftop ≤ 10kW</td>
<td>6.85</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>(b) solar farm on land</td>
<td>4.12***</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>25</td>
<td>0.50</td>
</tr>
</tbody>
</table>

* Please note that the tariff will be reduced pursuant to the PDP 2018 with the rates to be finalised following the issuance of the AEDP 2018.

** Yala province, Pattani province, Narathiwat province and certain districts in Songkhla province.

*** Changed by the resolution of the National Energy Policy Council on 15 August 2016.


VSPP Semi-firm project
On 17 February 2017, the NEPC approved a competitive bidding process for the generation of 269MW of electricity capacity by VSPPs. The process has been led by the ERC and the source of energy can be biomass or biogas, but fossil fuels must not be used. The project will be under the “6-month firm” PPA (i.e. generating capacity at 100% during the peak period and not more than 65% during the off-peak period), which must cover March to June. The feed in tariff will be at the rate applied to biomass and biogas with the feed in tariff premium (for the 6-month firm period) for a supporting period of 20 years. The public hearing for the ERC notification has been completed, however the Government has not yet announced when the purchase of electricity will commence.

Municipal waste to energy project
On 15 May 2017, the NEPC approved a process for the creation of municipal waste projects. The process has been led by the ERC and the Ministry of Interior without a competitive bidding process.

In April 2019, 11 municipal waste projects across 9 provinces of Thailand with a total generating capacity of 83MW were approved and awarded. The selected bidder will be a sponsor and operate the power plant for the relevant local administrative organisation at the relevant sites. The COD is scheduled to be prior to 31 December 2019.

Restriction on Foreign Investment
Generally, there is no restriction on the number of shares or percentage of shares to be held by a foreign entity, as the power generation business is not a restricted business activity under the Foreign Business Act B.E. 2542 (1999) (“FBA”). However, under the Land Code of Thailand (“Land Code”), a company in which more than 49% of the total shares are held by foreigners or where foreign shareholders make up more than half of the total number of shareholders, shall be considered a foreigner and shall not be permitted to own land. However, given that the renewable energy projects are types of businesses which are eligible for Board of Investment promotion, certain privileges are granted, and one of the key privileges (other than tax holidays and custom duty exemptions) is the ability of the project company to have ownership over the land in which the project will be located, despite the restriction under the Land Code.

Change of shareholding restriction under PPAs
There is also a restriction on change or restructure of the shareholding in the company which is a party to a PPA, whereby no change in the shareholding structure of the company will be permitted during the first 3 years after the COD, if such change would result in:
> the number of the original shareholders being less than half;
> the percentage of the shares held by the original shareholders being less than 51%.

Our energy project team in Thailand is based on the ground and comprised of experts with sector-specific understanding and knowledge of international market practices, as well as key legal and regulatory issues. We are the leading firm in the renewable sector in Thailand with a range of experience across all renewable energy transactions, ranging from the very first wind power project in Thailand (which is also the largest wind power project in South East Asia) and our continued involvement in a number of major wind, biomass, waste-to-energy and solar projects, which includes experience advising on bidding regulations and other regulatory requirements, project development and financing, acquisitions, initial public offerings and infrastructure funds.

Overview
The demand for electricity in Vietnam is rising rapidly to power the growing economy. Forecasts predict an annual growth rate for electricity of ‘near-double’ digits in the years to come. To keep pace with demand, the Government has envisioned substantial expansion to the national power generation capacity and introduced policies to cultivate the development of new energy, with installed capacity planned to rise from the 2015-level of 38.6GW to 600GW by 2020 and 1300GW by 2030. Against that backdrop, 2019 was an eventful year for renewables. During the first half of the year, the market saw an unprecedented 4.5GW of solar capacity being added to the grid. On the regulatory front, the Government is busy dealing with a range of issues including planning, transmission and pricing of renewable power. At the same time, investors are accelerating developments to meet the 2021 deadline for the current wind tariff. In this paper, we provide an overview of the Vietnamese renewable energy market and discuss recent developments, as well as the opportunities and challenges they bring about for investors.

Renewable Energy
While the energy mix in Vietnam the foreseeable future will still be dominated by traditional sources (including coal, gas and large hydro projects), renewable energy has gradually, but steadily, entered the limelight. In March 2016, the Government issued the revised National Power Development Plan for the years 2011 to 2020, with a vision to 2030 (“Master Plan 7”). Under Master Plan 7, the Government’s expectation is that renewable energy projects (including small-sized hydro, wind, solar and biomass projects) will account for 10% of the overall electricity capacity by 2020 and 21 per cent by 2030, generating 7 per cent of the nation’s electricity in 2020 and 10 per cent in 2030.

In order to meet these targets, the Government has rolled out a series of regulations aimed at clarifying the legal framework and incentives for the development of renewable energy projects. These policy developments, combined with a decline in global manufacturing costs for the technology necessary to leverage renewable energy sources, have generated a wave of investment in recent years.

Effects can be felt most keenly in the solar power field. From having virtually no solar capacity in early 2018, by 30 June 2019, Vietnam had connected more than 80 solar power plants with a combined installed capacity of approximately 4.5GW to the grid, representing a 400-fold increase that far exceeds the target in Master Plan 7. In terms of approved capacity, the Ministry of Industry and Trade (“MOIT”) reported that by June 2019 a total of 8.5GW of solar capacity and 2GW of wind capacity had been approved for inclusion in the various power master plans (including at the national and provincial level).

Foreign ownership and investment form
There is no generally applicable limitation on foreign ownership in the renewable energy sector. At present, foreign investors can own up to 100 per cent of equity in power projects in Vietnam. Although some high-profile, foreign-invested, thermal power projects have been implemented in cooperation with the Government under the Build-Operate-Transfer (“BOT”) umbrella (a form of public-private partnership), it does not appear that the Government will offer this kind of treatment for renewable energy projects as a general proposition (except, perhaps, for very prominent ones). Therefore, it is expected that most renewable energy projects will be carried out as independent power projects - the main implication being that there will be little room for investors to negotiate special terms or incentives or to obtain Government guarantees.

Financing
Power projects typically require significant capital investment and, as a result, are often financed with a significant portion of debt capital. It is unlikely that domestic Vietnamese banks alone will be able to provide sufficient funds to finance projects to meet the Government targets. However, international financiers are likely to face some notable challenges in participating in the financing of renewable energy projects. First, except in rare cases of so-called ‘mega’ projects, foreign lenders cannot take security over land and other real property (even though land and other real property may be the most valuable project assets). Moreover, a number of issues persist that undermine a project’s viability and bankability, including:

> the tariff levels (see further Feed-in Tariff below);
> concerns surrounding the financial capacity of Electricity Vietnam (“EVN”), the national utility, and the lack of a Government guarantee of EVN’s obligations (see further EVN and Government guarantees and incentives below);
> the form of the statutorily mandated power purchase agreement, which contains some core, non-negotiable terms that allocate significant risk to investors (see further Power purchase agreement below); and
> the 2021 deadline to secure the tariff for wind projects, and uncertainties surrounding new policies for solar projects after 30 June 2019 (see further Feed-in Tariff and Hot topics below).

These issues will be particularly acute for investors looking to put in place project finance arrangements which rely on the project’s assets for security and look to the project’s revenue stream for debt servicing.
Sale of electricity

Currently, EVN and its subsidiaries have the monopoly over the transmission and distribution of electricity in Vietnam, and act as the only wholesale purchaser of electricity from generators. The Government has set its vision for a competitive power market, which will be fully implemented at the wholesale level by 2021 and at the retail level by 2023.

Despite this intended transition, there is not yet any clear legal basis for a direct power purchase agreement between renewable energy generators and customers, such as factories and industrial parks. In fact, the regulations provide that EVN will be the sole buyer responsible for purchasing all power generated from renewable sources (see further Hot topics below).

EVN

Market observers have expressed concerns about EVN’s creditworthiness, as EVN is the entity responsible for implementing massive levels of investment in electricity infrastructure, but currently struggles to make a profit from the low and highly regulated electricity retail tariffs. While this does not pose immediate problems, it could lead to long term systemic risk.

To provide greater comfort for investors, the World Bank has assisted EVN to improve its financial standing and obtain its own credit rating. As a result, EVN and its power transmission arm, National Power Transmission Corporation, were both given a ‘BB’ rating with a stable outlook by Fitch in 2018 and 2019 respectively.

Feed-in Tariff

EVN is currently required to purchase all power generated by the following renewable energy projects at the feed-in tariff set by law (“FIT”):

- from solar power projects achieving commercial operation date (“COD”)2;
- on or before 31 December 2020 in Ninh Thuan province (within a 25MW capacity pool only); or
- before 30 June 2019 in other provinces;
- from wind power projects already in operation before 30 September 2018 or new wind projects achieving COD before 1 November 2021; and
- from all biomass and solid domestic waste projects.

The FIT is denominated in Vietnamese dong (and electricity purchased by EVN will be paid for in Vietnamese dong) and is linked to the Vietnamese dong:US dollar exchange rate announced by the State Bank of Vietnam (which goes some way towards protecting investors from currency depreciation).

Once obtained, the FIT is applied for 20 years. Neither the law nor the template power purchase agreements contain any adjustment mechanism for inflation or rising production costs, meaning there is no legal guarantee for a FIT increase during the investment term (other than as adjusted for FX). In practice, however, when the wind FIT was increased in November 2018, existing projects were also allowed to enjoy the higher tariff.

Competitive Bidding

The Government is considering the adoption of a competitive bidding model for new solar power projects reaching COD after 30 June 2019, with two floating solar pilot projects proposed to be tendered this year, but no specific guidance has been provided to date (see further Hot topics below).

Power purchase agreement

Renewable energy generators and EVN must negotiate and conclude their Power Purchase Agreements (“PPAs”) on the basis of the standard agreement forms provided by law. The MOIT has issued standard agreement forms for small hydro, wind, biomass, solar waste and solar power projects. While the parties can agree on additional provisions to the standard form PPA, they cannot vary its “basic contents.” Market information also suggests that EVN does not entertain negotiation outside this scope. The standard forms contain terms that allocate significant costs and risks to investors, and hence reduce bankability.

Some key points of concern are:

- the seller (generator) must bear the cost and risk of connecting the plant to the transmission grid – this is seen as problematic, especially where the project is located in a more remote area or the connection line will need to run through land owned by a variety of owners;
- the agreements do not contain a ‘deemed commissioning’ clause to protect the seller when the plant is able to generate power but the purchaser (EVN) fails to accept the power (see further on curtailment risk in Hot topics below);
- if the seller terminates the PPA following a breach by the purchaser (EVN), compensation for the seller is limited to the value of generated electricity for the previous year (although this provision has been removed in the latest form of the wind PPA);
- the agreements do not contain a ‘stabilisation’ clause to expressly protect the seller against changes of law; and
- the governing law is automatically Vietnamese law, and the default position for dispute resolution is via the forum of the MOIT.

Government guarantees and incentives

Government guarantees

Apart from the general assurances provided under the Investment Law (such as no nationalisation, assurance of profit repatriation, protection of existing incentives in case of change of law, etc.), the Government does not provide specific guarantees for renewable energy projects.

For example, the Government does not guarantee the contractual performance of EVN as the power purchaser under the power purchase agreement or guarantee foreign currency availability to convert Vietnamese dong revenues into, for example, US dollars.

That being said, in theory, it may still be possible to obtain guarantees for large-scale and important projects (such as a PPP project).

Investment incentives

Renewable energy is classified as an especially encouraged sector and therefore, some incentives are available for investors (as listed below).

Table 2 - Incentives for renewables

<table>
<thead>
<tr>
<th>Category</th>
<th>Incentives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Import duty</td>
<td>- Exemption for:</td>
</tr>
<tr>
<td></td>
<td>- goods imported to form fixed assets;</td>
</tr>
<tr>
<td></td>
<td>- project materials, components, and semi-finished products</td>
</tr>
<tr>
<td></td>
<td>that cannot be domestically manufactured.</td>
</tr>
<tr>
<td>Corporate income tax</td>
<td>- Exemption for the first four years:</td>
</tr>
<tr>
<td></td>
<td>- 50 per cent reduction for the following nine years;</td>
</tr>
<tr>
<td></td>
<td>- Preferred tax rate of 10 per cent for the first 15 years.</td>
</tr>
<tr>
<td>Land lease fees</td>
<td>- Exemption ranging from 14 years to the entire project life depending on the project location.</td>
</tr>
</tbody>
</table>

| a) Counting from the first year of generating taxable income or the fourth project year, whichever comes first, new projects only. |
| b) Counting from the first year of generating income; new projects only. Normal, non-preferred, tax rate is 20 per cent. |

The commercial operation date is the day on which a part or the entire grid-connected solar power plant is ready to sell power to the power purchaser and satisfies the following conditions: (i) initial testing has been completed for a part or the entire grid-connected solar power plant and interconnection facilities, (ii) the plant has a power operation licence in the power generation sector, and (iii) the seller and the purchaser have settled the meter reading to commence payment.

2 The commercial operation date is the day on which a part or the entire grid-connected solar power plant is ready to sell power to the power purchaser and satisfies the following conditions: (i) initial testing has been completed for a part or the entire grid-connected solar power plant and interconnection facilities, (ii) the plant has a power operation licence in the power generation sector, and (iii) the seller and the purchaser have settled the meter reading to commence payment.
Hot topics

New PPA template for wind power
In January 2019, the MOIT issued a new template wind PPA to formalise the new FiT of 8.5 US cents/kWh (onshore) and 9.8 US cents/kWh (offshore) for wind projects. The new PPA applies for both existing projects (which have to adopt the new template to enjoy the new rate) and new projects. Other than the higher price for sellers, the new template generally adopts a more buyer (i.e. EVN)-friendly position than the previous one.

Solar power developments
> Solar FiT expired – The FiT scheme of 9.35 US cents/kWh for solar power projects officially expired on 30 June 2019 (except for Ninh Thuan province, where the COD deadline to obtain the FiT has been extended to 31 December 2020 for a capacity pool of no more than 2GW). Although months have passed since the expiration, the Government is still considering the replacement model and has not issued new regulations. According to the latest proposal from the MOIT, two options are being considered, whereby only projects that have either signed PPA and commenced construction before 23 November 2019 (Option 1) or received in-principle approval for investment before 23 November 2019 (Option 2) and reach COD before 31 December 2020 may be eligible for the new FiT scheme (at a lower rate of 7.09 US cents/kWh for ground mounted and 7.69 US cents/kWh for floating solar), while other projects will be subject to a competitive bidding process.

Rooftop solar power projects – In March 2019, the MOIT issued a new PPA template for rooftop solar power and EVN also issued specific regulations for connecting rooftop solar projects to the grid. These were aimed at ironing out procedural difficulties and facilitating investment in this area. In July 2019, the MOIT also announced a target for Vietnam to have 100,000 rooftop solar systems installed and operating by the end of 2025. The MOIT is proposing a legislative clarification that will formally allow rooftop solar systems to sell to buyers other than EVN if they are not connected to the grid.

Curtailment risk
By June 2019 the Government had approved more than 10GW of solar and wind capacity, around 4GW of which had been connected to the grid. The surge of added capacity, which was not foreseen, and the concentration of new projects in a few provinces, has created enormous pressure on the power system and threatened grid disruption. As a result, a number of solar and wind projects were reportedly requested to curtail output without compensation from EVN. The Government is accelerating new power transmission investments and considering engaging private investors to assist with building the necessary infrastructure. Pending resolution of this issue, curtailment risk has become a factor that needs to be considered carefully by investors.

Backlog of planning approvals for new projects
In the first half of 2019, it was reported that planning approvals for hundreds of new renewables projects were put on hold due to the lack of guidance for the new Law on Planning which took effect from 1 January 2019. Delay in planning approval could have significant impact for the deployment of renewables projects, especially in light of the limited time window to reach commercial operation in order to achieve the favourable FIT. The Standing Committee of the National Assembly and the Government have recently approved some measures aimed at clearing the approval process, which hopefully will allow things to move forward again.

Direct PPA
In June 2019, the MOIT confirmed that drafting for a pilot direct PPA model between private renewable power generators and corporate customers was underway in coordination with USAID. In January 2020, the MOIT submitted a draft pilot direct PPA program to the Prime Minister, which was proposed for implementation from 2020 to 30 June 2022. Under this program, renewable power generators and consumer off-takers would be able to participate directly in Vietnam’s wholesale electricity market and enter into contracts for difference at agreed long-term prices.

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This publication is intended merely to highlight issues and not to be comprehensive, nor to provide legal advice, and its contents should not be relied upon as legal advice, either generally or in relation to any specific transaction.
## Key contacts

### Australia

- **Andrew Mansour**  
  Partner, Sydney  
  Sector Leader - Power & Utilities  
  Tel: +61 2 9230 4552  
  andrew.mansour@allens.com.au

- **Anna Collyer**  
  Partner, Melbourne  
  Allens  
  Tel: +61 3 9613 8650  
  anna.collyer@allens.com.au

- **Kate Asup**  
  Partner, Melbourne  
  Allens  
  Tel: +61 3 9613 8449  
  kate.asup@allens.com.au

### Greater China Region

- **Stuart Salt**  
  Partner, Hong Kong SAR  
  Tel: +852 2901 5227  
  stuart.salt@linklaters.com

- **James McLaren**  
  Partner, Hong Kong SAR  
  Asia Head of Green Energy practice  
  Tel: +852 2842 4106  
  james.mclaren@linklaters.com

- **Ying Fu**  
  Managing Associate, Hong Kong SAR  
  Tel: +852 2901 5379  
  ying.fu@linklaters.com

### Japan

- **John Maxwell**  
  Partner, Tokyo  
  Regional Head of Energy & Infrastructure  
  Tel: +81 3 6532 1227  
  john.maxwell@linklaters.com

- **Hindumi Taba**  
  Partner, Tokyo  
  Tel: +81 3 6212 1245  
  hindumi.taba@linklaters.com

### Korea

- **Joo Hye Lee**  
  Managing Partner, Seoul  
  Tel: +82 2 6320 1040  
  joo_hye.lee@linklaters.com

### Singapore

- **Christopher Bradley**  
  Managing Partner, Singapore  
  Tel: +65 6692 5732  
  christopher.bradley@linklaters.com

- **Kevin Crombies**  
  Counsel, Singapore  
  Tel: +65 6692 5750  
  kevin.crombies@linklaters.com

### India

- **Sonali Mahapatra**  
  Partner, Mumbai  
  Talwar Thakore & Associates  
  Tel: +91 22 6613 6948  
  sonali.mahapatra@tta.in

- **Mala Sathwika**  
  Counsel, Jakarta  
  Widjajaw & Partners  
  Tel: +62 21 2999 1516  
  mala.sathwika@linklaters.com

### Indonesia

- **David Holme**  
  Senior Foreign Legal Adviser, Jakarta  
  Tel: +62 21 2999 1509  
  david.holme@linklaters.com

### Thailand

- **Wilailuk Okanurak**  
  Senior Partner, Bangkok  
  Tel: +66 2305 8024  
  wilailuk.okanurak@linklaters.com

### Vietnam

- **Bill Magennis**  
  Head of Vietnam, Hanoi  
  Allens  
  Tel: +84 24 3936 0990  
  bill.magennis@allens.com.au

- **Robert Fish**  
  Partner, Ho Chi Minh City  
  Allens  
  Tel: +84 28 3822 1717  
  robert.fish@allens.com.au

- **Melissa Keane**  
  Partner, Hanoi  
  Allens  
  Tel: +84 24 3936 0990  
  melissa.keane@allens.com.au

### Japan

- **John Maxwell**  
  Partner, Tokyo  
  Regional Head of Energy & Infrastructure  
  Tel: +81 3 6532 1227  
  john.maxwell@linklaters.com

- **Hindumi Taba**  
  Partner, Tokyo  
  Tel: +81 3 6212 1245  
  hindumi.taba@linklaters.com

### Indonesia

- **David Holme**  
  Senior Foreign Legal Adviser, Jakarta  
  Tel: +62 21 2999 1509  
  david.holme@linklaters.com