

Asia Pacific Renewable Energy Insights

March 2020



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This Publication has been prepared by Linklaters LLP and its partner or associated firms - Allens, Widyawan & Partners and Talwar Thakore & Associates, with contributions from other local law firms.



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.¹

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 market, including those highlighted above and in the following pages. We hope this jurisdictional overview which outlines some of the key regulatory and other challenges and opportunities in the key markets in Asia Pacific for renewables provides an informative and interesting reference. We look forward with enthusiasm to supporting our clients, whether developers, contractors, financiers, governments or others, to achieve their ambitions in the sector and would be delighted to talk to you about your activities in this area.

Key contacts of our Asia Green Energy practice

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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 ("EHSS") 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:

- > hands-on knowledge of the requirements of the different renewable energy technologies;
- > in-depth, local policy and regulatory insight; and
- > leading practices for M&A, EHSS advisory and financing transactions of all kinds (including the full range of renewable energy 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.



Asia Law Firm of the Year

PFI Asia Awards 2019

Renewables Deal of the Year - Yunlin

PFI Asia Awards 2019

Energy/Renewable Energy Deal of the Year - Formosa 1 offshore wind farm

The Asset Triple A Asia Infrastructure Awards 2019

Best Transaction of the Year - Formosa 1 offshore wind farm

The Trade Finance Awards 2019

Offshore Wind Deal of the Year - Formosa 1

IJGlobal Awards 2018

Asia-Pacific Renewables Deal of the Year - Formosa 1

PFI Awards 2018

Project Finance Law Firm of the Year (Regional)

The Asset Triple A Regional Awards 2018

Asia Energy Firm of the Year

The Asia Legal Awards 2017

Projects and Energy Firm of the Year (International)

China Law and Practice Awards 2017

¹ Source: Wood Mackenzie.



Thailand

- > the lead arranger and original lender on the financing to Greenovation Power Limited, a project company wholly owned by Gunkul Engineering Public Company Limited to construct, develop and operate a 67.5MW wind power project in Nakorn 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 Siam Commercial Bank Public Company 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 Nakorn Ratchasima Province as well as a mezzanine financing to the sponsor Gunkul Engineering 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 D Wind Co. Ltd.
- > First Korat 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 6.435bn 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 80MW solar farm owned by Thai Solar Renewable Co. Ltd.
- > Solar Power Co. Ltd. on its THB 1.95bn sale of a 40% stake in three of its solar power projects to Ratchaburi Electricity Generating Holding Plc
- > SPCG 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 8MW solar park 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 (1991) Public Company Limited on a THB 15bn project financing 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\$150m equity financing in Biomass Electricity 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\$220m joint venture with Ayala Corporation and UPC Philippines Wind Holdco I B.V. to invest in wind farms in the Philippines
- > Diamond Generating Asia Ltd. on its investment into the 81MW Caparispisan wind farm in Ilocos Norte
- > Diamond Generating Asia Ltd. on its joint venture with Michigan Power (wholly owned subsidiary of Ayala Corporation) to explore solar power opportunities in the Philippines
- > a major energy company on its bid to acquire a 50% stake in the CBK 720MW hydro project in Luzon, the Philippines

Malaysia

- > the sponsors on the RM6bn financing of the Bakun Hydroelectric Project

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

Greater China Region

- > the lenders and ECAs on the 605MW Changhua offshore wind project financing in Taiwan sponsored by Ørsted
- > wpd AG on the project financing of the 350MW Guanyin offshore wind farm project in Taiwan
- > NEXI and KSURE on the NT\$90b (approx. US\$3b) financing for the 589MW Changfang and Xidao (CFXD) offshore wind project in Taiwan.
- > the lenders and ECAs on the NT\$62.4bn (approx US\$2bn) financing for the 376MW Formosa 2 offshore wind project in Taiwan
- > wpd AG on the €2.7bn project financing of the 640MW Yunlin offshore wind farm project in Taiwan
- > the lenders and EKF on the NT\$18.7bn (approx US\$600m) project financing for the 128MW Formosa 1 offshore wind project in Taiwan
- > Ørsted on the acquisition of a 35% interest in the Formosa 1 offshore wind project
- > a bidder on the proposed acquisition of a portfolio of solar and WTE assets in Taiwan and PRC
- > two ECAs on the bankability analysis of the offshore wind PPA and regulatory regime in Taiwan
- > an international financial sponsor on the proposed acquisition of a stake in the Hailong II and Hailong III offshore wind project in Taiwan
- > a lender on the potential financing of a significant (confidential) solar project in Taiwan
- > China Light & Power on the acquisition of two windfarm projects in Liaoning province of the PRC
- > Arcapita Bank on the acquisition of the Honiton Energy 49.5MW wind project in PRC and, subsequently, the project company on the project financing of the expansion of the wind project
- > China Light & Power on the greenfield development of a hydropower project in Yunnan province



Key

- Wind
- Solar
- Hydropower
- Biomass
- Geothermal
- Waste to Energy

India

- > the ECAs and commercial bank lenders on a potential 750MW solar project financing in India
- > the sponsors on the US\$950m Almatti Hydro Power Project in Karnataka, India
- > Greenko on its acquisition of SunEdison's operational solar and wind energy assets in India. We also advised them on the proposed purchase of the entire share capital of Orange Renewable Holdings, a developer and operator of wind and solar energy projects in India, from AT Holdings Pte. Ltd. for c.US\$1bn

Australia

- > Please refer to the credentials set out on page 13

Pakistan

- > China Development Bank (CDB) and Habib Bank Limited as lenders, on the project financing of the 1,124MW hydropower station to be developed by Kohala Hydro Company (pvt.) Ltd.
- > CDB as lender, on the US\$189m project development and financing of the 99MW UEP wind IPP in Sindh Province, Pakistan
- > CEXIM and ICBC as lenders, on the US\$1.5bn project financing of the 870MW Suki Kinari Hydropower Project in Pakistan
- > Standard Chartered Bank on the project financing of a windfarm in Sindh Province
- > Mitsui & Co. Ltd. and Malakoff Berhad as sponsors on the development of a wind power project in Sindh, Pakistan
- > Asian Development Bank on the development and financing of a proposed dual fuel (biomass and coal) co-generation power project in Pakistan

Japan

- > Marubeni Corporation on the first commercial scale offshore wind project at Akita Port and Noshiro Port in Akita, Japan
- > the sponsors on one of the first commercial offshore wind projects in Japan
- > an international sponsor on the project financing of the 10MW Mine solar project in Yamaguchi, Japan
- > a Japanese infrastructure fund on its first acquisition of a portfolio of solar projects in Japan
- > a Japanese bidding consortium on their potential bid to acquire Equis' Asia Pacific renewables portfolio of over 170 assets including solar, wind and hydroelectric power operations in Taiwan, Japan, Australia, India, Indonesia, the Philippines and Thailand
- > a potential bidder on KKR's sale of its Japan renewables portfolio
- > ING Bank in relation to the ¥12.1bn financing of Nippon Solar Services' construction of a utility-scale solar photovoltaic power plant in the Oita Prefecture in Kyushu
- > Sonnedix in connection with the ¥16.5bn project financing of a greenfield 41.6MW solar photovoltaic plant located near Sano, Tochigi Prefecture, Japan
- > ING Bank on the financing of Nagi PV Godo Kaisha solar photovoltaic power plant in Nagi, Okayama Prefecture
- > an international lender on the financing for the construction, operation and maintenance of the Nanazoshi c.12MW solar PV plant in Japan (substantially finalised)
- > the sponsors of a corporate reorganisation involving 12 solar projects (comprising 91MW in aggregate) in Japan
- > an international sponsor on its potential project finance facilities for the development and construction of a solar PV project in Japan
- > an independent international solar power producer on the development and project financing of a c.30MW solar PV plant
- > a Japanese megabank on risk allocation mitigation strategies for wind, solar and biomass project financings in Japan
- > the Japanese lender on the financing and hybrid securitisation of a portfolio of PV assets

Lao PDR

- > the sponsors on the Nam Theun II hydroelectric project in Laos
- > the international and Thai lenders on the original financing of the Theun Hinboun Power Project in Laos
- > a group of Thai and international lenders on its potential financing of US\$400m to Électricité du Laos which include our due diligence of various concession agreements of major hydro power projects in Laos
- > Suez Energy Asia Co. Ltd. on the amendment of the US\$101m refinancing for the 150MW Houay Ho power plant in Laos in connection with the corporate restructuring of GDF Suez
- > Glow Energy Public Company Limited on the potential investment in a hydropower plant in Laos
- > Ratchaburi Electricity Generating Holding Public Company Limited in regards to the acquisition of a 25% interest in Nam Ngum 2 Hydro power project in Laos
- > a major Russian power company on the potential acquisition of a stake in the Nam Kong 1 hydro project in Laos

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
- > BIM Group on its a joint venture with the energy arm of Philippines' Ayala Corporation to develop around 330MW of solar power projects in Vietnam
- > ORIX and UOB on the US\$50m joint investment in Bitexco Power, which owns and operates a portfolio of hydropower projects across Vietnam, including conducting full due diligence on all the projects

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\$660m 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 Wayang Windu
- > 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 hydropower 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\$266m bank and bond debt financing of a geothermal power project in Indonesia for Dayabumi Salak Pratama, Ltd.
- > Enel Green Power on the development, in joint venture with PT Optima Nusantara Energi ("PT ONE"), of the 55MW Way Ratai geothermal power project
- > a number of renewable energy companies on the regulatory regimes and structuring considerations for the development of large scale and/or small scale solar PV projects in Indonesia



United Kingdom

- > a joint venture and the sponsors in relation to the £2.5bn refinancing of the 588MW Beatrice Offshore Windfarm Limited project located 13km off the Caithness coast in Scotland
- > the lenders on the €800m refinancing of this portfolio of Portuguese wind farms held by Finerge Renewable Group Europe Hold Co S.A R.L., a Luxembourg subsidiary of First State
- > Octopus Renewables on its acquisition from RES of nine wind farms across France, the UK and Ireland in two deals totalling over €100m
- > Spring Infrastructure 1 Investment Limited Partnership as Fund, Spring Infrastructure Capital as fund manager and Spring Offshore Wind Holdings Limited as purchaser on the £113m acquisition of Sumitomo's indirect minority interest in the 573MW Race Bank wind farm, located 27 km off the coast of Norfolk, UK
- > Greencoat UK Wind HoldCo Limited and Greencoat Buckingham Assets Limited on the £635m acquisition of a 49.9% stake in the Stronelairg and Dunmaglass onshore wind farms from SSE
- > Moray Offshore Windfarm (East) Limited on the £2.6bn financing of the 950MW Moray East offshore windfarm in the Outer Moray Firth in Scotland
- > a group of commercial banks on the provision of debt at a HoldCo-level to Macquarie's Rampion InvestCo Limited, in relation to its 25% stake in the UK's 400MW Rampion Offshore Wind Farm
- > Innogy Renewables UK Limited on the £2bn financing and development of the 860MW Triton Knoll offshore wind farm, and the subsequent sale of 41% stake of the wind farm to a Japanese consortium
- > Dudgeon Offshore Wind Limited (as borrower) on the £1.3bn financing of the 402MW Dudgeon offshore windfarm located off the coast of North Norfolk
- > the consortium of MIRA and Macquarie Capital on their acquisition and financing of a 50% stake in the Race Bank Offshore Wind Project from Dong Energy (now Ørsted)
- > the sponsors on the construction and financing of the 664MW Beatrice offshore windfarm
- > the lenders on the multi-source financing ('ECA', 'EIB' and commercial lenders) of the Galloper offshore windfarm
- > the lenders on the project financing of the CfD based Neart Na Gaoithe project
- > the lenders on the financing of the Lincs offshore windfarm
- > financial investors on the acquisition of a strategic stake in the Sheringham Shoal offshore windfarm, UK North Sea
- > Axia Power Holdings B.V. and the UK Green Investment Bank plc on the £500m purchase and financing of a 50% interest in the Westernmost Rough offshore windfarm in the UK North Sea from DONG Energy Wind Power A/S
- > Marubeni Corporation on the disposal of 50% of its stake in the 172MW Gunfleet Sands offshore windfarm in the UK to Development Bank of Japan Inc.
- > Royal Bank of Scotland PLC and Investec Bank PLC as mandated lead arrangers and underwriters on the c.£400m financing to Octopus Investments for a portfolio of 74 UK ground mounted solar projects
- > the lenders in connection with the financing of the 299MW Tees Biomass Power
- > the sponsors on the financing of the Cramlington CHP biomass project
- > Morgan Stanley on its joint venture investment in Meygen's tidal projects in the Pentland Firth
- > the purchaser on the acquisition and financing of a substantial portfolio of UK renewables assets, including over 50 landfill gas sites in the UK
- > Octopus Investments on the successful completion of a £174m refinancing of the largest independent portfolio of biomass and landfill gas projects in the UK
- > Cory Group on the £520m sale of the Landfill and Gas business to facilitate the refinancing of the Group's remaining business relating to its Riverside energy from waste plant

Portugal

- > Iberwind on the analysis of the voluntary programme set out by the Portuguese Government regarding the renewables feed-in tariff
- > the lenders on the financing of the 400MW Generg windfarm portfolio
- > Magnum Capital Industrial Partners and the Magnum consortium on the acquisition of all operating windfarms held by Babcock & Brown in Portugal (a total of 515MW) as well as several other windfarms under construction (156MW)
- > Descoberta Dinâmica S.A. and Solar Balance on the financing and construction of three photovoltaic solar plants in Portugal with a total capacity of 8MWa
- > Gaudi Power Holdings LLC as purchaser and Marubeni Corporation as parent company guarantor on the acquisition of 50% of GDF Suez's power portfolio in Portugal
- > ENERSIS on the refinancing of the Hidrocorgo small hydropower project
- > the lenders on the refinancing and releveraging of a portfolio of minihydro power plants located in Portugal with a total installed capacity of about 500MW, and owned by Generg, a Portuguese renewables group
- > the arrangers on the €210m facilities agreement for the refinancing of Ancora Wind, a 172MW portfolio of wind assets in Portugal
- > Marguerite Adviser S.A. on the €100m acquisition of two greenfield projects for the construction and operation of biomass power plants in Portugal
- > Iberwind - Desenvolvidores e Projectos, S.A. as sponsor on structuring and implementing the partial refinancing of its €1bn project finance portfolio
- > Neoen S.A.S on the €60m refinancing of its 24.2MW solar photovoltaic power portfolio located in Portugal, through two project bond issues

Romania

- > Meinl International Power on acquisition and development of a wind power project in Romania
- > the European Bank for Reconstruction and Development (as a lender) on the financing of the development, construction, equipment supply and operation and maintenance of a windfarm in Tulcea
- > Good Energies on the sale of all or part of two windfarm development projects in Romania (Fantanele)

The Americas

- > DONG Energy Wind Power U.S. Inc. (now Ørsted) as project sponsor and joint venture partner on its 50/50 joint venture with Eversource Energy to develop, construct and operate a utility-scale offshore wind project off the coast of Massachusetts
- > Eksport Kredit Fonden of Denmark and commercial lenders on the development and proposed US\$2bn financing of the Cape Wind offshore wind farm in Massachusetts
- > a North American-based ECA on the financing of the Talas de Maciel wind farm project in Uruguay
- > the lenders on the financing of the development, construction and operation of a wind farm in the State of Rio de Janeiro, Brazil
- > the sponsors to the Cabo Leones wind farm projects in Chile on the initial financing of the first phase of this project, and more recently we have been appointed by the sponsors to act as counsel to the lenders for the third phase of the project, a 78.1MW wind farm

Netherlands

- > Anglo Platinum Marketing Limited and Shell Ventures B.V. in their investment in HyET Holding B.V., a company that develops and markets hydrogen compression technology
- > Siemens Project Ventures on the contemplated acquisition of a 20% participation in the 600MW offshore wind park in the Dutch North Sea
- > the investors on the construction arrangements for Typhoon's project in the Dutch North Sea
- > NIBC in the project financing of the biofuel power plant Moerdijk

Belgium

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

Luxembourg

- > Tolve Windfarms Holding S.r.l on the acquisition of three Italian subsidiaries who invest in wind farm constructions
- > South Europe Infrastructure Equity Finance on the disposal of its renewable assets
- > the government of Luxembourg Environment Ministry on its Milpillas Landfill Gas Recovery Project

Turkey

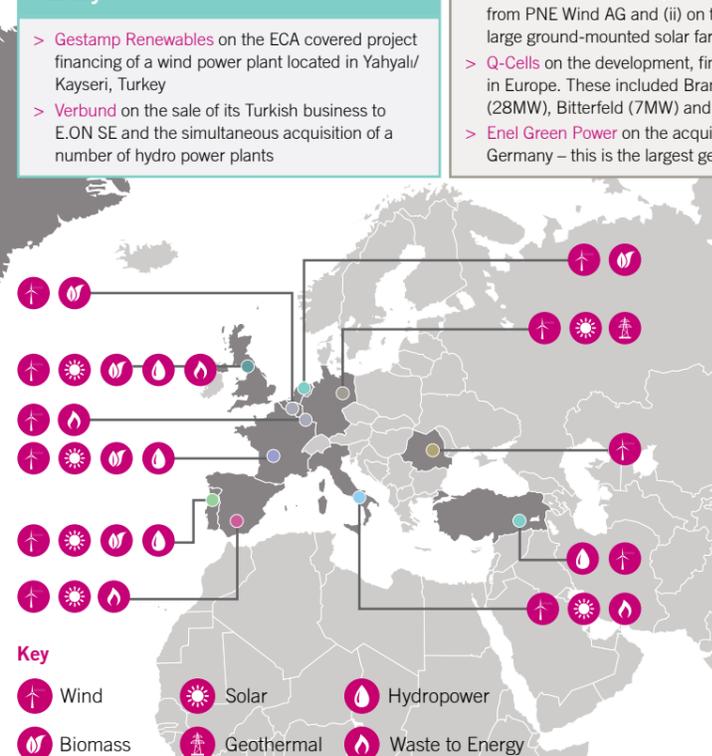
- > Gestamp Renewables on the ECA covered project financing of a wind power plant located in Yahyal/Kayseri, Turkey
- > Verbund on the sale of its Turkish business to E.ON SE and the simultaneous acquisition of a number of hydro power plants

Germany

- > Glennmont Partners on the acquisition of 25% stake in offshore wind farm "Gode Wind 1"
- > the bidders on the planned acquisition of a share in the offshore wind farms "Borkum West II phase 2", "Deutsche Bucht", "Nordergründe" and "Borssele 3/4"
- > RWE Innogy on the sale of an 85% equity stake in the offshore windfarm "Nordsee One" to Northland Power and the subsequent financing
- > Marguerite, Siemens Financial Services and Danish pension funds Industriens Pensions and PKA on the acquisition and the financing of the offshore wind farm "Butendiek" in the German North Sea
- > Windkraft Thüringen on the acquisition of the onshore wind farms "Kutzleben" and "Hornsömmern" from BOREAS and "Mihla" from Juwi
- > Allianz Global Investors (i) on the acquisition of a 142MW wind farm portfolio consisting of 11 wind farms from PNE Wind AG and (ii) on the acquisition of the solar parks Preschen and Jocksdorf (55MW), the last large ground-mounted solar farm in Germany
- > Q-Cells on the development, financing and sale of some of the largest ground-mounted solar installations in Europe. These included Brandenburg-Briest (91MW), Zerst (45MW), Finsterwalde (39MW), Amsdorf (28MW), Bitterfeld (7MW) and Frauental (5MW)
- > Enel Green Power on the acquisition, development and sale of the Weilheim geothermal project in Bavaria, Germany – this is the largest geothermal project in Germany (up to 26MW)

Spain

- > AIMCo on the acquisition of Eolia from Oaktree
- > Macquarie and Wren House Infrastructure on the €2.5bn acquisition of all the assets of E.ON in Spain and Portugal
- > Siemens on the merger of its wind power business with Gamesa Corporación Tecnológica (the largest M&A deal in Spain in 2016, awarded "Deal of the Year" by Expansión)
- > GIP and ACS (Cobra) on the takeover bid over Saeta by Brookfield
- > I Squared Capital on the acquisition of 100% of the shares in Grupo T-Solar
- > Centerbridge on the creation and subsequent €600m sale of Vela Energy to Sonnedix
- > First Reserve on the establishment of the Renovalia Reserve joint venture with Renovalia for the acquisition and development of wind farms in Spain and other jurisdictions
- > Deutsche Bank on the holdco financing to Renovalia Energy Group for the acquisition of a portfolio of solar projects in Spain
- > the largest ever European solar photovoltaic project bond (Vela Energy)
- > the first solar power project in Europe to be financed using a capital market solution (El Bonillo)



Key

- Wind
- Solar
- Hydropower
- Biomass
- Geothermal
- Waste to Energy

France

- > BNP Paribas, MUFG Bank and Société Générale on the c.€2bn financing of the 480MW Saint-Nazaire offshore wind farm, the first offshore wind project to reach financial close in the French market
- > a consortium including EOLFI, CGNEE, MERIDIAM and CDC on the financing and development of a floating 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 BNP Paribas, as lead arrangers, on the €225m portfolio refinancing of windfarms in Ireland, UK and France
- > Sonnedix on all aspects of the acquisition and subsequent €189m refinancing of five car park solar power plants (55MW) in France
- > a bidder in relation to the acquisition of Enel Green Power's French windfarm portfolio (178MW in operation, 18MW in construction and 312MW in development)
- > Neoen S.A.S on the completion of the €360m development of Europe's largest photovoltaic energy park in Cestas, France
- > the 2020 European Fund for Energy, Climate Change and Infrastructure (the Marguerite Fund) on its acquisition and project financing of three photovoltaic power plants from EDF Energies Nouvelles, in Toul-Rosières, France, one of Europe's largest solar plants
- > Tereos (as main sponsor) on a €160m limited recourse refinancing of one of the largest bio ethanol production plants in France
- > an electricity operator on its bid to acquire Shem (Société hydroélectrique du Midi), SNCF's 800MW hydro subsidiary in France
- > Crédit Industriel et Commercial S.A as lead arranger and BPI France and La Banque Postale as lenders on the limited recourse financing of a portfolio of 27 wind farms acquired by Engie in France
- > Societe Generale and Bpifrance Financements as lenders on the €122m refinancing of a 80MW portfolio of 13 French solar and wind assets owned by the fund Transition Énergétique France managed by Acofi Gestion
- > Reden Solar as sponsor on the €270m reorganisation and limited recourse refinancing of its portfolio of solar plants in operation in France, one of the largest solar assets refinancing to date in the French market

Italy

- > the sponsors on the development, non-recourse financing of IVPC4, 283MW of windfarm projects in Southern Italy and Sardinia and subsequent financial leasing to 14 English LLPs
- > the lead managers on the financing by way of securitisation of the Andromeda 51MW PV plant, the first project bond in Italy
- > the funders on Project Zelius, the €1bn+ project financing of EDF EN's PV solar portfolio in Italy and France
- > the mandated lead arrangers on the €1.2bn financing, construction and operation of three separate Falck waste-to-energy plants and associated waste handling, collection and disposal facilities in Sicily
- > Octopus Investment Limited as borrower on the financing from MPS Capital Services for five of its Italian subsidy-free solar plants located in the Montalto di Castro region of Italy (first merchant plant project financing in Italy)
- > the co-arrangers and dealers in the establishment of the €600m Euro Medium Term Note Programme and the drawdowns of two series of Green Bonds of Alperia, company which manages 34 hydroelectric power stations in Italy

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

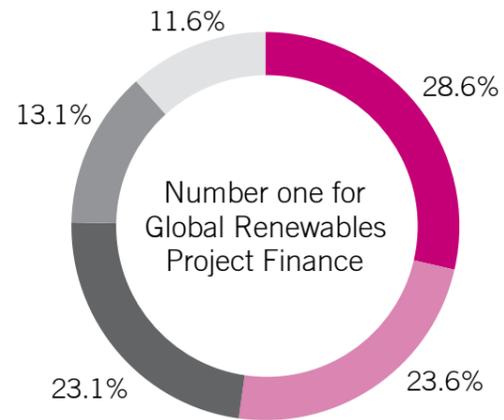
IJGlobal Europe Awards 2017

European Solar Deal of the Year: Vela Energy Solar PV Portfolio Refinancing

IJGlobal Europe Awards 2016

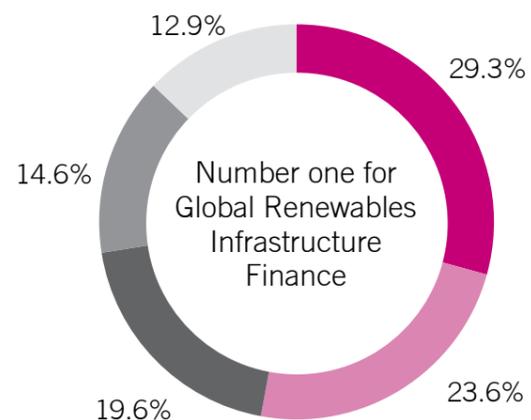
European Biomass Deal of the Year: Tees Biomass

IJGlobal Europe Awards 2016



	%
Linklaters LLP	28.6
Clifford Chance	23.6
Norton Rose Fulbright	23.1
Allen & Overy	13.1
Ashurst	11.6

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



	%
Linklaters LLP	29.3
Clifford Chance	23.6
Norton Rose Fulbright	19.6
Allen & Overy	14.6
Hunton Andrews Kurth	12.9

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

Asia Pacific Renewable Energy Insights



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

Renewable Energy in Australia.

Where we're at

Australia's electricity sector has traditionally been dominated by coal-fired generation. Over time, this has become a pressing issue, both for environmental reasons and as many coal-fired generators have started to approach the end of their design lives, requiring new capacity to be introduced. Australia was one of the first countries in the world to set a national Renewable Energy Target ("RET"), designed to increase the amount of electricity generated from renewable sources and reduce greenhouse gas emissions. It does so by setting a target for the amount of electricity to be supplied by renewable energy generators, and penalises certain entities (usually electricity retailers) for failing to source a certain percentage of their energy needs from renewable sources. The initial aim in 2001 was to source two per cent of the nation's electricity generation from renewable sources. This was quickly reached in 2009 and a more ambitious target of 23.5 per cent renewable energy by 2020 was set (equivalent to 33,000GWh). Australia is on track to meet, and even exceed, this target by 2020 with 21.3 percent of Australia's total electricity generation sourced from renewable sources in 2018. Each Australian State and Territory also has its own renewables target. The South Australian government aims to reach net 100 per cent renewables by 2030, while Tasmania and the Australian Capital Territory aim for 100 per cent renewables by 2022 and 2020, respectively. Queensland and the Northern Territory aim for 50 per cent renewables by 2030. Victoria has a target of 25 per cent renewable energy by 2020, 40 per cent by 2025, and 50 per cent by 2030. New South Wales and Western Australia are yet to introduce renewable energy targets.

Policy developments

In late 2017, the Federal Government announced that it would pursue a new National Energy Guarantee (the "Guarantee") which would broadly involve the imposition of two new obligations on electricity retailers:

- > the Reliability Requirement – aims to ensure there is sufficient dispatchable electricity supply to meet peak demand in each region of the Australian National Electricity Market ("NEM") by encouraging investment in dispatchable generation or demand response resources where there is a material gap between forecast demand and supply; and
- > the Emissions Requirement – aims to drive down the NEM's greenhouse gas emissions by requiring market customers (usually electricity retailers) to demonstrate that the average emissions intensity of the electricity they purchase each year (measured in tonnes of carbon dioxide emitted per megawatt hour) is below a set threshold (determined by reference to an emissions trajectory set by the Federal Government).

In August 2018, in the face of opposition to the Emissions Requirement, the Guarantee was placed 'on hold'. The Reliability Requirement was implemented on 1 July 2019 as the Retailer Reliability Obligation. Instead of a combined energy and emissions reduction policy, the Federal Government has indicated that its focus is now on policies to ensure the reliability of energy supply as well as adopting a number of the recommendations made by the Australian Competition and Consumer Commission in its Final Report on the Retail Electricity Pricing Inquiry. These include:

- > granting the Australian Energy Regulator ("AER") powers to address behaviour which has the effect of manipulating the proper function of the NEM;

- > replacing consumer 'standing offers' (which are essentially guaranteed minimum terms of retail electricity supply) with a 'default offer', the maximum price of which would be set by the AER in each NEM region;
- > preventing acquisitions and other transactions (other than investment in new generation capacity) which would result in a market participant owning or controlling the dispatch of more than 20% of the generation capacity in any NEM region or the NEM as a whole; and
- > a program whereby the Federal Government will underwrite projects that create additional baseload generation, provided the projects meet certain criteria (including there being no involvement by a market participant with a significant market share and the project servicing a minimum number of customers).

The figures

	Wind	Solar
Number of operating wind*1 / solar farms (>1MW) Australia*2	93	132
Projects completed in 2019*3	5	22
Large-scale projects under construction or financially committed at the end of 2019*4	83	

* Sources: EcoGeneration 'Wind Map of Australia 2020' (1) Australian PV Institute (2) Clean Energy Council website – Project Tracker (current as of 11 December 2019) (3,4).

 Progress towards the 2020 target and opportunities for investors

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 had previously estimated that for the 2020 target to be reached, the total new capacity of renewable energy projects that needed to be announced and built between 2017 and 2019 was 6400MW.¹ In August 2019, this milestone was met ahead of schedule. The combination of a stable federal RET and state government renewable energy schemes provided a strong incentive for new project development. As a result, a total of 11,611MW of new large-scale generation capacity has been firmly announced from 2016 to Dec 2018.²

The majority of these projects are either under construction or already operating. The infographic below tracks project developments since 1 January 2016.³ Probable, committed and accredited projects are included to show progress towards the 2020 Renewable Energy Target.

Progress towards the 2020 Renewable Energy Target		33,000GWH
Accredited capacity	Committed capacity	Probable capacity
7,903MW	4,230MW	1,499MW
Operating	Firmly announced	

* January 2016 to November 2019

2018 was a big year for renewable energy in Australia, and with the anticipated activity in 2019/20, especially in Queensland, New South Wales and Victoria, there are commercial opportunities for investors in Australia. A record A\$26 billion was invested in renewables projects in 2018, with international equity or financing contributing to at least 5400MW worth of projects in the current pipeline.²

With renewable energy now the lowest-cost type of new energy generation possible to build, the industry has an excellent foundation for continued success.¹

1 Clean Energy Regulator '2020 Large-scale Renewable Energy Target capacity achieved' published online 4 September 2019.

2 CER, 'The Acceleration in Renewables Investment in 2018', published July 2019.

3 CER, 'Large-scale Renewable Energy Target Market data', published online 18 December 2019.

4 Clean Energy Australia Report 2019.



What we are seeing

With a large volume of investment occurring in the Australian renewables sector in the last few years, we are starting to see a number of trends emerge.

 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 interest is largely being driven at the board and management level.
- > We are also seeing corporate offtakers push the boundaries of risk sharing that generators and investors have traditionally accepted when a retailer is the offtaker. For example, the risk of the RET being repealed or amended has traditionally sat with the offtaker. Similarly, generators and investors need to be confident they have a creditworthy offtaker (which is usually satisfied by the provision of credit support). These positions are generally accepted by retailers but are sometimes being resisted by corporate offtakers.
- > State governments are also increasingly seeking to contract directly with generators as a means of supporting the renewables industry and creating jobs. For example, the Victorian Government has announced a renewable energy auction scheme that is intended to help the state meet its target of 50 per cent renewable generation by 2030 and is marketing these projects as its means of powering the Melbourne tram network. Queensland and the Australian Capital Territory also have similar schemes to encourage investment in the renewables sector.
- > Groups of local governments have also grouped together to combine their load to contract directly with renewable generators.

 STORAGE

- > With the closure of aging coal fired power stations, and as energy companies and banks increasingly distance themselves from investment in new coal fired power stations, an opportunity exists for renewable energy generators, coupled with dispatchable capacity (such as battery storage, pumped hydro or gas peakers), to make up the base load power shortfall. This is consistent with the Retailer Reliability Obligation.
- > The South Australian Government has already moved in this direction, teaming with Tesla and Neoen to install the world's largest lithium ion battery alongside a 315MW wind farm. The battery furnished the grid with 100MW in 140 milliseconds when Loy Yang power station failed in January 2018. The Federal Government, through the Australian Renewable Energy Agency (ARENA), provided A\$12 million in funding for the installation and operation of a second large scale (30MW) battery to further secure South Australia's electricity grid.
- > On behalf of the Federal Government, in October 2019 ARENA provided \$24.2 million in funding to Alinta Energy to develop a solar/gas hybrid battery storage facility to power the Chichester mining hub in Western Australia. The facility will consist of a 60MW solar PV integrated with a 35MW battery storage facility. The Northern Australian Infrastructure Facility (an Australian Government lending facility) also loaned the project A\$90 million.
- > A number of utility-scale storage projects will also be developed in Victoria, including a 30MW, stand-alone battery storage facility and a 25MW Tesla battery co-located with a solar farm. Network operator AusNet has teamed with EnergyAustralia and battery storage provider Fluence to deliver the project.
- > The Queensland Government conducted a reverse auction for up to 400MW of renewable energy capacity, including 100MW of energy storage as part of the 'Renewables 400' platform. Solar generators bidding into the scheme had to include storage for at least 20% of capacity. Ten projects have been shortlisted to be assessed by CleanCo, a Queensland government owned clean energy regulator. CleanCo owns and operates a portfolio of low and zero emission electricity generation assets and commenced trading on 31 October 2019.

 INVESTORS

- > There is a large volume of investment occurring in Australia in the renewables industry in the lead up to 2020 when the RET peaks at 33,000GWh. This is driving a booming M&A market and new project developments particularly in the solar space.
- > Along with a large volume of investment, we are seeing a number of innovative structures being created to fund large-scale developments. For example:
 - > The establishment by AGL of the Powering Australian Renewables Fund ("PARF") with equity partner QIC. PARF's aim is to fund 1,000MW of renewable energy and provide AGL with low cost offtake agreements as well as providing the equity investors with good returns on their investment.
 - > German investor Wirsol teamed with Australian energy developer Edify Energy to complete Australia's largest single solar project financing to build and operate three new large-scale solar farms (two in Queensland and one in Victoria). This investment structure was unique due to the cross collateralised portfolio structure of three greenfield projects, a mix of contracted and uncontracted revenue and long dated debt.
- > In contrast to the increase in investment in the renewables sector, both equity and debt investors are distancing themselves from investing in coal-fired power stations. For example, AGL remains committed to getting out of coal by 2048 (with significant pressure from investors for an earlier closure) and Westpac and the Commonwealth Bank of Australia have publicly stated that they are looking to decrease investment in coal and increase investment in more energy efficient projects. Most of the large insurance companies in Australia, including QBE and Allianz, have committed to ending or phasing out underwriting coal projects and other coal investments.

 FINANCING

- > 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 renaissance of European bank interest in our market and Asian debt investors looking for greater yield in certain circumstances, we are seeing the stretching of debt tenor to periods as long as 15 to 18 years for projects where sponsors want to remove refinancing risk.
- > Non-bank debt providers, including investors who participate in debt capital markets, are showing interest in mature renewable projects with long-term contracted revenue streams easing the funding burden on traditional project finance banks, who can allocate capital to new greenfield renewable projects.
- > Traditionally project financing of a renewable energy project is dependent on the availability of a long-term offtake contract (beyond 10 to 15 years). However, the number of offtake agreements entered into by utility companies traditionally used to support such project are in short supply relative to the number of new developments. Consequently, financiers have increasingly been comfortable lending on the basis of more novel structures including:
 - > merchant deals supported by a parent company guarantee from the ultimate Sponsor entity or export credit agencies;
 - > partially contracted projects have closed over with protections in place should they not be fully contracted by completion, or otherwise lower gearing levels, and often involving a number of separate offtakers, including corporate offtakers; and
 - > Sponsors bundling projects on a portfolio basis, rather than on a separate non-recourse basis, to aggregate and diversify contracted and merchant revenue streams.



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 (and 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 either:

- > 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 predominately 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;
 - > 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:

- > Where:
 - > 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, given that public infrastructure is located on the land, either:
 - > a A\$58 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\$266 million threshold will apply (if the foreign person 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

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.

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.

WESTERN AUSTRALIA

- > Collgar 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
- > Highbury pumped hydro
- > Hornsdale wind farm
- > Kanmantoo pumped hydro
- > Lake Bonney wind farm
- > Lincoln Gap wind farm
- > Mt. Millar wind farm
- > Olympic Dam solar
- > Starfish Hill wind farm
- > Tungketta Hill wind farm
- > Waterloo wind farm
- > Wattle Point wind farm
- > Willogoleche wind farm
- > Wyalla wind farm

VICTORIA

- > Bald Hills wind farm
- > Berrimal wind farm
- > Chalicum wind farm
- > Cherry Tree wind Farm
- > Congupna solar farm
- > Gannawarra solar farm
- > Hepburn wind farm
- > Kerang solar farm
- > Kiamal solar farm
- > Lal Lal wind farm
- > Macarthur wind farm
- > Moorabool wind farm
- > Mortlake wind farm
- > Mount Gellibrand wind farm
- > Morton's Lane wind farm
- > Mt. Mercer wind farm
- > Nirranda 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
- > Woolsthorpe 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 / Lakeland 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
- > McIntyre wind farm
- > Mount Emerald wind farm
- > Oakey solar farm
- > Queensland Government wind farm asset sales
- > Teebar solar Farm
- > Wellington solar farm
- > Weipa solar farm
- > Whitsunday solar farm
- > Windy Hill wind farm

NEW SOUTH WALES

- > Beryl solar farm
- > Biala wind farm
- > Boco Rock wind farm
- > Bodangora wind farm
- > Broken Hill solar power plant
- > Crookwell 2 wind farm
- > Cullerin Range wind farm
- > Glen Innes wind farm
- > Darlington Point solar farm
- > Goonumbra solar farm
- > Gullen Range wind farm
- > Gunning wind farm
- > Manildra solar farm
- > Moree solar farm
- > Nyngan solar power plant
- > Sapphire wind farm
- > Shoalhaven Hydro electricity scheme
- > Silverton wind farm
- > Snowy Hydro 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

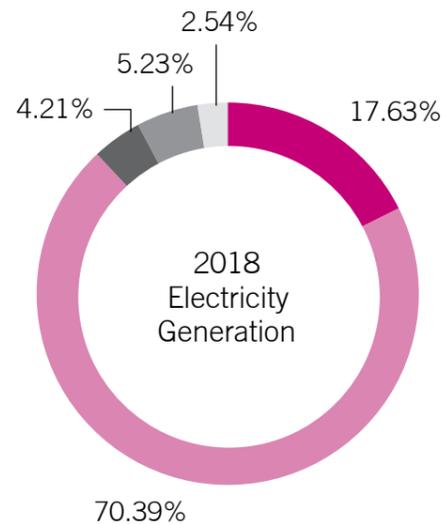
TASMANIA

- > Cattle Hill wind farm
- > Granville Harbour wind farm
- > King Island solar power station
- > Musselroe wind farm
- > Woolnorth Studland Bay wind farm



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.¹ 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%.² The country's power generation composition by source of energy, as of 2018, was as follows:



	Capacity (%)
● Hydroelectricity	17.63
● Thermal	70.39
● Nuclear	4.21
● Wind	5.23
● Solar	2.54

Source: China Electricity Council (Note: certain forms of renewable energy are not included in the China Electricity Council figures due to them comprising only small proportions of overall power production)

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"),³ on the back of the current five-year plan (the 13th five-year plan) issued by the National Development and Reform Commission (the "NDRC") in March 2016⁵.

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. 184GW⁴ according to publicly-available estimates), with 500MW of capacity coming from offshore wind projects;⁵ and
- > **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. 175GW⁶ according to publicly-available estimates), with 500MW of capacity coming from concentrated solar thermal projects.⁷

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.⁸



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.

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 Huaneng 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 small 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.⁹
- > 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, analysing material issues which present a threat to energy security and energy development, and coordinating among governmental departments and ministries in respect of 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.

- > The NDRC's specific responsibilities with respect to renewable energy include determining tariffs, planning and managing renewable energy generation projects and examining and approving the grid construction plans for renewable energy power plants.

National Energy Administration

- > The NEA was established in 2013 as a vice-ministerial level agency under the NDRC.¹⁰ 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), new 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.
- > The NEA has established a Renewable Energy Department¹¹ which is responsible for drafting regulations and plans as well as executing initiatives relating to renewable energy. The NEA and its Renewable Energy Department have launched various initiatives, including the Information Management Platform for Renewable Power Projects,¹² which simplified the approval/filing process for renewable power projects and streamlined the process from which they can benefit from incentives.

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 utilising 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 each energy source based on its evaluation of the cost of electricity 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).

1 Source: <http://www.cec.org.cn/yaowenkuaidi/2019-06-14/191782.html>.

2 Source: 2018年全国电力工业统计快报数据一览表 <http://www.cec.org.cn/guihuayutongji/tongjixinxi/nianrushuju/2019-01-22/188396.html>.

3 Source: http://www.ndrc.gov.cn/zcfb/zcfbtz/201701/t20170117_835278.html.

4 Source: http://zfxgk.nea.gov.cn/auto87/201906/t20190610_3673.htm.

5 Policy planning in the PRC is driven by five-year plans. Once a plan is issued, the competent agencies will issue sectorial development plans. According to reports from the NEA, as of the end of October 2019, 77% of the 13th Energy FYP had been achieved for wind power.

6 Source: http://zfxgk.nea.gov.cn/auto87/201906/t20190610_3673.htm.

7 Source: <http://www.ndrc.gov.cn/zcfb/zcfbghwb/201612/P020161222570036010274.pdf> p15.

8 Source: <https://www.iea.org/policiesandmeasures/renewableenergy/?country=China>.

9 Source: <http://www.nea.gov.cn/gjnyw/>.

10 Source: <http://www.nea.gov.cn/gjnyj/index.htm>.

11 Source: <http://www.nea.gov.cn/sjzz/xny/>.

12 Source: <http://djfi.renewable.org.cn/default/coframe/auth/login/login.jsp>.



Source	Feed-in tariff (yuan/kWh)	Applicable notice
Solar	0.40 to 0.55 ¹³ (excluding poverty alleviation power plants)	Notice of the NDRC on Improving the Feed-in Tariff Mechanism for Solar Photovoltaic Projects (2019) (《国家发展改革委关于完善光伏发电上网电价机制有关问题的通知(2019)》)
Wind – onshore wind power	0.29 to 0.47 in 2020 (or the applicable feed-in tariffs for coal power projects, if lower) ¹⁴	Notice of the NDRC on the Improvement of Policy relating to Feed-in Tariffs for Wind Power (2019) (《国家发展改革委关于完善风电上网电价政策的通知(2019)》)
Wind – offshore wind power	0.75 in 2020	
Hydropower	In most cases, as set out in notices issued by the provincial NDRC from time to time ¹⁵	Notice of the NDRC on Improvement of the Feed-in Tariff Mechanism for Hydropower (2014) (《国家发展改革委关于完善水电上网电价形成机制的通知(2014)》)
Biomass	0.65 to 0.75 ¹⁶	Notice of the NDRC on Improvement of Policy relating to the Tariff for Agricultural and Forest Biomass Power Projects (2010) (《国家发展改革委关于完善农林生物质发电价格政策的通知(2010)》)

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:

- funding the research and development of renewable energy, as well as the relevant exploration and development of information systems;
- funding renewable power projects relating to biomass production in countryside and pasturing areas, and independent power generation power plants in remote areas and islands;
- promoting the local manufacture of renewable power equipment;
- providing allowances to renewable power purchasers calculated by reference to the price difference versus regular power consumption; and
- providing direct subsidies to renewable power producers (being the difference between the relevant renewable 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

Central Government in the national annual financial budget, 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 (打赢蓝天保卫战三年行动计划)”, which reiterated the objective to improve the environment via multiple industrial optimisation 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 county-level biomass cogeneration, 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 plants and some provinces have drafted implementation measures in this regard. 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-constructed plants) will gradually decrease. Under the new tariff policy, multiple market players are expected to bid for each wind and solar project and bid price 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 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 these 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 circulated from the NEA that emphasise 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 ultrahigh-voltage (or UHV) cross-province 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 number of installed wind turbines not being connected to the grid. 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 2018.¹⁷

Curtailment has developed mainly due to a shortage of grid capacity, despite statutory provisions¹⁸ and a series of policy documents mandating the offtake 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:

- a new mechanism for allocating numbers of hours (to be determined by the NDRC and NEA) with guaranteed offtake of renewable energy by grid companies;
- compensation for renewable power producers when curtailment is applied (with conventional power producers bearing the costs if the curtailment is due to them generating electricity beyond allocated capacity); and
- the possibility for renewable power producers to enter into power purchase agreements (with priority dispatch) with end-users for hours not guaranteed by grid companies.

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

On 2 April 2018, the NEA issued to local governments the Notice on Easing the Burden on Renewables Sector Enterprises,¹⁹ prescribing a strict implementation by the grid companies of guaranteed hours of offtake 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 offtake 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 had to suspend approval of new 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 offtake rate.

In addition, on 10 May 2019, the NEA and NDRC promulgated a notice on Establishing and Improving the Mechanism for Guaranteeing Renewable Power Consumption, which formally promoted the mandatory offtake of renewable energy. Under this notice, each 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 year grid companies and other power purchasers offtake a minimum amount of renewable energy (which cannot be limited to hydropower only). The minimum consumption percentage for renewable energy (all sources) for each province in 2019 varied from 10% (Shandong Province) to 80% (Sichuan Province), and the minimum consumption percentage (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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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.

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 varies among three regions determined by the NDRC based on the respective solar resources and relevant costs, specifically being 0.40 yuan/kWh, 0.45 yuan/kWh and 0.55 yuan/kWh respectively.

¹⁴ This price range applies to wind projects approved after 1 January 2019. The guideline feed-in tariff for onshore wind power varies among four regions determined by the NDRC based on the respective wind resources and relevant costs, specifically being 0.34 yuan/kWh, 0.39 yuan/kWh, 0.43 yuan/kWh and 0.52 yuan/kWh in 2019, 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 average power purchase price of the grid companies in the respective province and the construction/operation cost of the power plant. For inter-province power plants, the feed-in tariff will be the average power purchase price paid by grid companies in the province receiving electricity minus the cost of transmitting power in that province.

¹⁶ 0.75 yuan/kWh for agricultural and forest biomass; 0.65 yuan/kWh for waste incineration biomass; the feed-in tariff for other types of biomass varies among provinces.

¹⁷ Source: http://www.nea.gov.cn/2019-01/28/c_137780779.htm; http://www.nea.gov.cn/2019-11/04/c_138527392.htm.

¹⁸ Original Renewable Energy Law in 2005, Air Law.

¹⁹ Source: http://zfxgk.nea.gov.cn/auto87/201804/t20180426_3156.htm.

²⁰ Source: http://zfxgk.nea.gov.cn/auto87/201803/t20180307_3124.htm.

²¹ Source: http://www.ndrc.gov.cn/zcfb/zcfbtz/201905/t20190515_936170.html.

²² 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. Sections (ii) and (iii) constitute a constantly updated negative list for foreign investment access (the “Negative List”). While investment in industries that fall within the encouraged category or outside the Catalogue do not require prior approval from MOFCOM, those that fall within the scope of the Negative List are subject to such prior approval or are barred from foreign investment.



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 total renewable power installed capacity in the country was almost 86GW. The Indian government's ambitious target to reach 175GW of renewable energy capacity by 2022 (of which 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-productive 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 green corridor where access to grid infrastructure is swift and efficient.
- > Complexity of subsidy structure and no uniform practice followed by state agencies while formulating subsidy guidelines.
- > Availability of sufficient contiguous land at competitive prices that is required for installation of project facilities, delays in land 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 was allowed in power generation, distribution and transmission. India follows a federal system of governance with the central government and the state governments each being entitled to legislate on matters related to electricity and power, including incentives.

Electricity Act, 2003

- > The (Indian) Electricity Act, 2003 (the "**Electricity Act**") is the primary Indian legislation that regulates the power sector including aspects such as generation, distribution and sale of renewable energy. A licence is required to transmit, distribute or trade in electricity. The Electricity Act contemplates two types of power producers: (a) independent power producers, which are entities that generate electricity for commercial third party or open market sale; or (b) captive power producers, which are entities that generate electricity for their own use or captive consumption of an industry (or group of industries).

- > The regulatory and administrative responsibilities under the Electricity Act are bifurcated between various central and state level entities or agencies. The Central Electricity Regulatory Commission ("**CERC**") is the central regulator that is responsible, among other things, for inter-state related electricity issues while the respective State Electricity Regulatory Commissions ("**SERCs**") are the state regulators that are responsible for intra-state related electricity issues. This is described in greater detail below.
- > The Electricity Act recognises multi-year tariff principles, lists factors that should be considered by the relevant regulatory commission while determining tariffs and provides for rationalisation of tariffs by allowing cross-subsidisation. These measures ensure transparency and predictability in the tariff structure. The Electricity Act has also introduced provisions relating to mandatory open access of transmission and distribution systems (i.e. non-discriminatory provision for the use of transmission lines or distribution systems and associated facilities). Detailed regulations have been prescribed by the CERC and SERC on the renewable energy certificate mechanism. These regulations aim at the development of the power market from non-conventional energy sources through the issuance of transferrable and saleable credit certificates, which helps facilitate inter-state transactions involving renewable energy with the least cost and technology involved.
- > The Authorities released the draft Electricity (Amendment) Act 2018 ("**Draft Electricity Act**") on 7 September 2018 seeking to amend the Electricity Act. Some of the key changes proposed to be introduced by the Draft Electricity Act are the separation of licences for supply and distribution of electricity and introduction of a clear definition of renewable energy. Further, currently tariffs may include cross-subsidies for certain classes of consumers. However, the Draft Electricity Act seeks to limit cross-subsidies to 20%, and to eliminate them within three years. Under the Draft Electricity Act, the Government may provide subsidies only through direct benefit transfer. It is difficult to ascertain a timeline within which this Draft Electricity Act will become a statute.

National Electricity Policy ("**NEP**")

The Indian government has developed the NEP to encourage development of the power sector by laying emphasis on the need for optimum utilisation of non-conventional energy resources such as solar, hydro, wind and bio-mass. The NEP provides that SERCs should specify appropriate tariffs to promote renewable energy.

National Tariff Policy ("**NTP**")

The NTP was notified by the Indian government to ensure financial viability of the power sector and promote transparency, consistency and predictability in regulatory approaches across jurisdictions. The NTP was amended in 2016 and several reforms were introduced to promote renewable energy and the sourcing of power through competitive bidding, outline various parameters (such as return on investment, cost of debt and rate of depreciation on assets) and set out general principles that must be followed by the relevant commission while determining tariffs for renewable energy projects. On 30 May 2018 further draft amendments were circulated for comments, proposing changes such as liability on open access (customer to pay cross subsidy surcharge for a maximum period of one year from the date of opting for open access) and further terms and conditions in relation to standby charges. It is difficult to ascertain a timeline within which the draft amendments will be finalized.

National Solar Mission ("**NSM**")

NSM was launched by the Indian government in 2010 and intends to achieve solar generation capacity of 100GW by 2022. NSM aims to create conditions for rapid scale-up of capacity and technological innovation to drive down costs towards grid parity. Solar generation has been promoted through scale-up in grid connected solar projects, development of large solar power parks and rapid installation of grid connected solar roof-top projects. The government has also implemented a viability gap funding scheme wherein funding is provided to sponsors selected through a transparent bidding process, to procure solar power at a pre-determined fixed tariff.

National Policy on Biofuels ("**NPB**")

The Union cabinet approved the NPB on May 2018 with an aim to increase usage of biofuels in the energy and transportation sectors of India during the coming decade. The NPB further aims to utilise, develop and promote domestic feedstock, including the production and consumption of biofuels as a substitute to fossil fuels, while also contributing to national energy security, climate change mitigation and providing new employment opportunities.

National Wind-Solar Hybrid Policy ("**NWSP**")

The Ministry of New and Renewable Energy released the NWSP on 14 May 2018 (as amended on 13 August 2018) with the objective of providing a framework for the promotion of large grid connected wind-solar photovoltaic ("**PV**") hybrid systems for optimal and efficient utilisation of transmission infrastructure and land, reducing the variability in renewable power generation and achieving better grid stability, as well as encouraging new technologies and methods involving the combined operation of wind and solar PV plants.

Foreign Investment in Renewable Energy

As per the prevailing foreign investment policy, 100% foreign investment is allowed in entities engaged in the renewable energy sector subject to the provisions of the Electricity Act and other relevant state renewable energy policies.

Key regulators and other administrative agencies

CERC and SERCs

- > As discussed above, the Electricity Act provides for the constitution of a CERC and, for each state - a SERC. Among other things, the CERC and the SERCs are responsible for regulating tariffs in relation to generation, transmission, supply and distribution of electricity, issuance of licences and fixing trading margins (if found necessary).
- > The CERC and SERCs also act as quasi-judicial bodies. The CERC is responsible for adjudicating upon disputes involving generating companies or transmission licensees in regard to any inter-state activities. The respective SERCs are responsible for adjudicating upon disputes between licensees and generating companies within 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 formulating schemes and policies in relation to the 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 ("**SEDAs**") are the state government authorities which are responsible for formulating and implementing renewable energy policies that will attract private participation in developing projects. The renewable energy policies of most states contemplate SEDA to be the main authority responsible for granting project approvals. SEDAs also assist sponsors in procuring other permits and consents (such as pollution control clearances) required for establishing and operating renewable energy projects.

Transmission utilities

- > Under the Electricity Act, the central government may nominate any government company to be a central transmission utility ("**CTU**"), and the various state governments may nominate the state electricity board ("**Board**") or any government company to be the state-specific transmission utilities ("**STUs**"). Amongst others, the function of the transmission utilities is to undertake transmission of electricity with the CTU being responsible for inter-state transmission and the STUs being responsible for intra-state transmission activities.
- > Power Grid Corporation of India Limited is the only nation-wide transmission licensee long with a few private transmission companies who have asset-specific licences. Each state has an intrastate transmission licensee in the form of a state government promoted company or the Board.

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 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 Negotiation Committee for PPAs ("**HLNC**") to review and renegotiate PPAs already in force in order to bring down the high wind and solar energy prices in Andhra Pradesh. Aggrieved by this order, numerous renewable energy companies mounted legal challenges against the State Government's renegotiation bid, claiming that the Andhra Pradesh Government had no say in the contracts which were signed between the distribution companies and the developer. Press reports state that the Andhra Pradesh High Court, while setting aside the Government order, has requested the renewable power companies to raise their objections before Andhra Pradesh Electricity Regulatory Commission ("**APERC**") for which a timeline of six months (from 24 September 2019) has been set to resolve the issues, and has directed Andhra DISCOMs to pay a tariff of INR 2.43 and INR 2.44 per unit till the matter is settled (which reflect the tariffs outlined in the executed PPAs currently in force pending resolution of the dispute). No final decision seems to have been reached on this matter as of yet.

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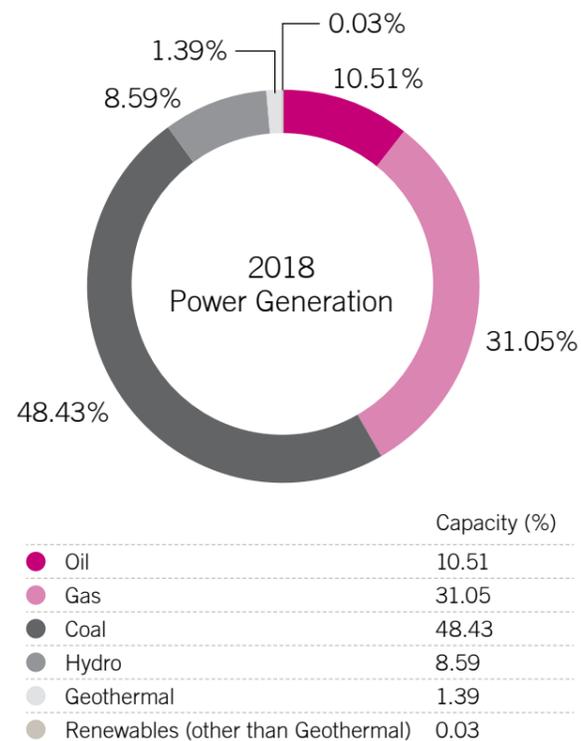
This publication is intended merely to highlight issues and not to be comprehensive, nor to provide legal advice, and its contents should not be relied upon as legal advice, either generally or in relation to any specific transaction.

¹ 26% of the power producer must be owned by the captive users and 51% of the aggregate electricity produced must be consumed by the captive users. On 22 May 2018, the Ministry of Power circulated the draft Electricity (Amendment) Rules 2018 ("**Draft Rules**") which aim to amend the Electricity Rules, 2005, by setting out further terms as well as clarifications regarding captive generating plants, inter alia, introducing the definition of group captive generating plants and clarifying how aggregate electricity generated is to be computed. The Draft Rules have been sent to various Authorities such as the Central Electricity Authority (CEA), the Central Electricity Regulatory Commission (CERC) and distribution companies (DISCOMs), among others, inviting their comments. These Rules were to come into effect on 1 April 2019, however they are currently still in draft form and it is difficult to ascertain the time period within which these Rules will be passed.



Which sectors are active?

As of the end of 2018, installed capacity in Indonesia is approximately 57.8GW. 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/20/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.

The overall potential for renewable energy in Indonesia is as follows:

	Potential ¹	Installed Capacity (MW) ²	Exploited (%)
Geothermal	29,554MWe	1,814.30	6.10
Hydro	79,091MW	4,938.64	5.40
Solar	207,898MW (4.8kWh/m ² /day)	25.19	0.04

PLN's plan for the development of renewable energy under the RUPTL 2019-2028 (in MW/MWe) can be summarised as follows:

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Geothermal (PLTP)	190	151	147	455	245	415	2,759	45	145	55
Hydro (PLTA)	154	326	755	-	182	1,484	3,047	129	466	1,467
Mini-hydro (PLTMH)	140	238	479	200	168	232	27	20	20	10
Solar (PLTS)	63	78	219	129	160	4	250	-	2	2
Wind (PLTB)	-	-	30	360	260	50	150	-	-	5
Biomass	12	139	60	357	50	103	19	5	15	35
Wave and tidal (PLT Kelautan)	-	-	7	-	-	-	-	-	-	-

¹ Based on Decree of the Minister of Energy and Mineral Resources No.143 K/20/MEM/2019 on the Nasional Electricity Plan 2019-2038.

² Based on PLN RUPTL 2019-2029.

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 Minister. Consumer tariff rates 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 at 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 regime 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, the procurement is to be made in accordance with applicable laws and regulations. The regulation does not provide details of what is involved in a direct selection process, although it does state that PLN must prepare and publish technical guidelines on the implementation of the direct selection method of procurement. Typically, a direct selection process in the power sector involves a competitive tender process involving a minimum of two bidders. Currently, PLN has selected companies that passed the technical and administrative requirements to be put in the selected bidder list for the purpose of direct selection process.

We have set out below a summary of the regulations on setting PLN's generation costs (“BPP”) for the purposes of this calculation. Exceptions apply to waste to energy 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 it can lower (or at least not increase) PLN's 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 BPP for particular energy sources. This means renewables energy needs to compete with other cheaper electricity sources, such as coal, because pricing will be linked to the BPP which includes all energy sources, rather than having a specific feed-in tariff for renewable energy.

MEMR has separately set the actual BPP of PLN for 2019, which is valid from 1 April 2019 until 30 March 2020, that will be used as the reference in procurement documents during that period. The national BPP is set at US\$7.86/kWh, and there are separate local BPP for different regions in Indonesia. If there is any region that does not have a BPP, then the BPP will refer to the highest BPP stipulated in the Minister's decision.

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 acceleration 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 <1MW – reserved for 100% national ownership
- > Electricity generation capacity of 1MW-10MW – maximum foreign ownership is 49%
- > Electricity generation capacity of >10MW – 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 10MW (open up to 67%)

The requirement that smaller-scale renewable projects (other than geothermal projects) between 1MW and 10MW 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.

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 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

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 PPA risk 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 10/2017 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 PPAs. 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.

Regulation 10/2017 (as amended by Regulation 49/2017 and Regulation 10/2018) only applies to new PPAs to be entered into by PLN and importantly for the renewables sector does not apply to “intermittent” power generation projects (e.g. solar and wind projects), mini-hydro projects below 10MW, biomass power projects and municipal waste to energy projects. However, Regulation 10/2017 (as amended by Regulation 49/2017 and Regulation 10/2018) will still apply to, for example, large-scale hydro projects and geothermal projects.

Even though Regulation 10/2017 (as amended by Regulation 49/2017 and Regulation 10/2018) does not apply to many PPAs in the renewables sector (on the basis that these will be separately regulated), it remains to be seen how the PPA form will be rolled out by PLN across these renewables sectors. To date, PPAs in the smaller-scale renewables space (such as mini-hydro and solar PPAs) have been short-form PPAs that do not in any event reflect an internationally bankable risk allocation on issues such as political risk and PLN grid risk.

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 17/3/2015 also provides that business entities must also 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

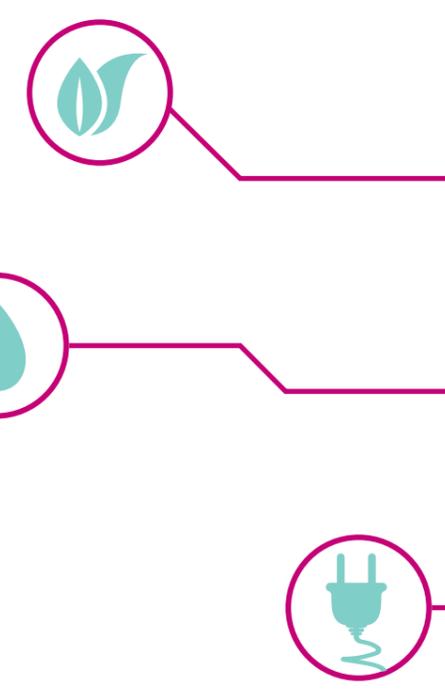
Power and infrastructure projects in Indonesia continue to be plagued by land acquisition problems, particularly in the populated areas of Java Island.

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

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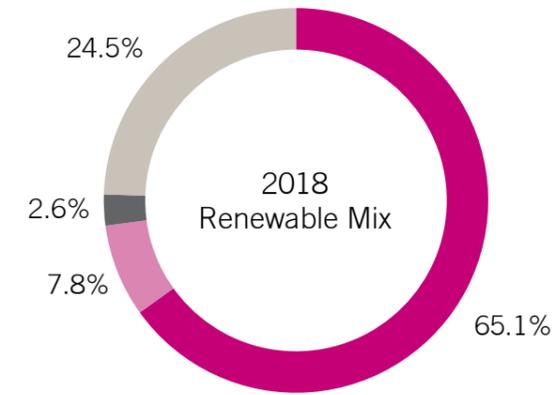
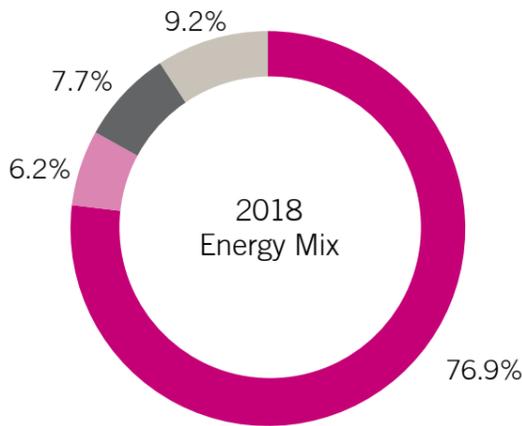
We set out below a brief summary of the regulatory regime for the renewable sector in Japan and some topical issues relating to the renewables sector.

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.

The chart below breaks down the renewable energy category on the left chart according to sources.



	(%)
Thermal	76.9
Nuclear	6.2
Hydro	7.7
Renewables	9.2

	(%)
PV	65.1
Wind	7.8
Geothermal	2.6
Biomass	24.5

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

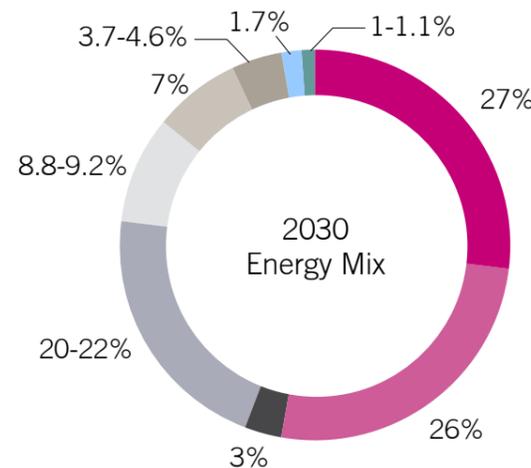
Source: Comprehensive Energy Statistics, Agency for Natural Resources and Energy

Switching to renewable energy

Renewable energy consists of 22-24% 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 .

	(%)
LNG	27
Coal	26
Oil	3
Nuclear	20-22
Hydro	8.8-9.2
PV	7
Biomass	3.7-4.6
Wind	1.7
Geothermal	1-1.1



Source: Agency for Natural Resources and Energy

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 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 offtake arrangements for electricity that is generated. These are:

- > Chugoku Electric Power Company (**CEPCO**);
- > Chubu Electric Power (**Chuden**);
- > Hokuriku Electric Power Company (**Hokuden**);
- > Hokkaido Electric Power Company (**HEPCO**);
- > Kyushu Electric Power (**Kyuden**);
- > Kansai Electric Power Company (**KEPCO**);
- > Okinawa Electric Power Company (**Okiden**);
- > Tokyo Electric Power Company (**TEPCO**);
- > Tohoku Electric Power (**Tohokuden**); and
- > Shikoku Electric Power Company (**Yonden**).

In addition to those utilities, the IPPs (Independent Power Producers) (including, among others, Electric Power Development Co., Ltd. (known as "J-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 Electricity Utilities ("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.

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; and
- > construction and operating 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 greater than 3%;
- > in solar projects with a capacity of greater than 100kW, the capacity of the photovoltaic panels is increased by greater than 3kW;
- > 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).



- > Such major changes include where there is a change resulting in “overloading”. Overloading is where the capacity of the power conditioner to which the photovoltaic panels are connected is lower than the aggregate capacity of the photovoltaic panels, so that the amount of power generation outside of peak daylight hours is improved. Overloading will not be prohibited, but if the number of the photovoltaic panels is subsequently increased after a METI Certificate is obtained, this change must be certified and a new tariff will apply to the project.
- > 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 installation (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 very 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 and (iv) measures with respect to delays in development of projects.
- > Once determined, the tariff applies for the duration of the procurement period. The set 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.

Type of Renewable Energy	Feed-In Tariff (JPY/kWh)		
	FY2017	FY2018	FY2019
Solar			
<10kW	28	25 - 28	24 / 26
10-500kW	21	18	14
500-2000kW	21	18	Reverse Auction
>2,000kW	Reverse Auction (see below)		
Wind			
Onshore	22 / 21	20	19
Offshore	36	36	36

- > 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).

Reverse 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 allocated.
- > 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 taking 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 cap, 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 196.96MW was awarded with the lowest bidding price of 14.25JPY/kWh. The first biomass power reverse auction for a 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 Maritime Renewable Energy Resources (“**Marine Renewables Energy Act**”)) has been officially enacted and implemented since April 2019. It allows wind farm operators to use offshore sea zones 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 off-shore 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 generators to restrict the output of electricity. Curtailment of electricity generation may be applied only after the relevant utility has implemented measures to mitigate curtailment by (a) restricting output of its own electricity generation facilities other than its photovoltaic facilities, wind power facilities, nuclear power facilities, hydraulic power facilities and geothermal power facilities and (b) sale of excess electricity in the electricity market.
- > Following regulatory amendments in January 2015, the curtailment measures apply to renewable energy generators producing electricity 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); and
 - > 360 hours p.a. (for photovoltaic renewables energies) and 720 hours p.a. (for wind renewables energies) (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 Certification 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 FY 2012 - FY 2014 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 10kWh or more which (i) secured the feed-in tariff or 40 yen/kWh or 36 yen/kWh (as applicable) during FY 2012 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 on or before 30 September 2017.

Introduction of Power Producer’s Basic Charge

- > The introduction of the power producer’s basic charges is under discussion. It will be payable by the power producers in proportion to the usage of the transmission and distribution lines for the purpose of achieving a fairer allocation of the burdens in relation to the maintenance, operation and upgrading costs for the power transmission and distribution systems. According to ANRE the amount of the power producer’s basic charges will be around JPY 1,800/kW 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 those 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 2021, a reform towards the post-fit framework is under progress and is expected to take place in 2020. As a part of this process, ANRE announced the reform proposal in December 2019, which referred to the feed-in premiums (“FIP”) approach as the post-fit framework. In the proposed FIP 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 Certification was provided prior to 1 April 2017, METI provides a 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 power purchase and interconnection agreements 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 contract term of the power purchase and interconnection agreement for projects expected to have more than 10kW of 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 all electricity output but there are some important exceptions that include:
 - > 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 have foreseen (and which METI considers should only be in extreme cases);
 - > force majeure affecting the plant;
 - > the utility reasonably considering that power from the operator will affect the stability or quality of its power supply; and
 - > 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. These mandatory provisions include:
 - > 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 utility 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 upon 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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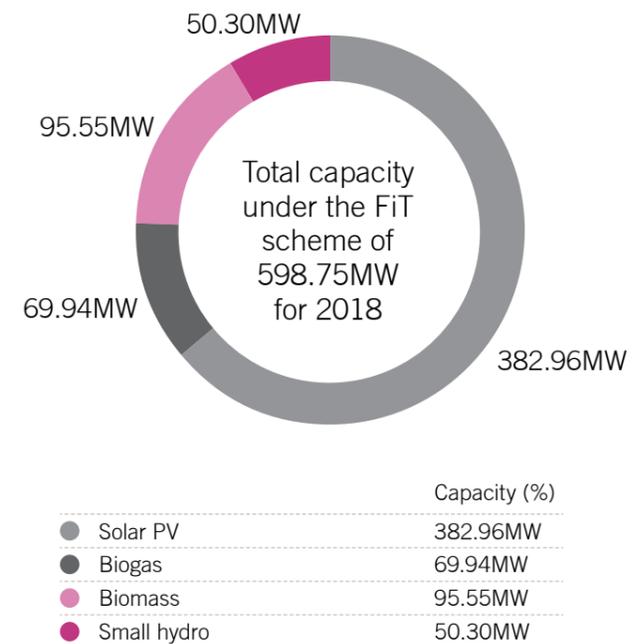
Overview

In line with the trend for emerging markets to move to renewables, Malaysia has set an ambitious target for renewable energy to account for 20% of its total energy mix by 2025, up from the current level of 2%. While it will be challenging to achieve this high target, the government’s initiative will create plenty of investment opportunities in the renewable energy sector in the next five years.

Notably, as the new administration came to power last year, the Malaysian government has rolled out a series of new initiatives (as outlined below), providing a favourable investment environment for the renewables sector in order to move away from Malaysia’s current dependency on fossil fuels.

Which sectors are active?

Malaysia’s total installed electricity capacity is approximately 33GW.¹ In 2018, installed renewable generation capacity under the FiT scheme was at 598.75MW compared to a government target of 1,000MW.² However, Malaysia has implemented a set of policies to make the most of the country’s renewable resources.



Source: SEDA Annual Report 2018

Hydro

> Hydropower potential in Malaysia is assessed at 29,000MW,³ with 85% of potential sites being located in East Malaysia.⁴ To date, Malaysia has utilised its hydro potential mainly through the construction of large hydropower facilities, with about 6,128.1MW installed.⁵ As of 2017, Malaysia had a renewable capacity (inclusive of large hydropower plants) of 7.3GW, of which hydropower contributed 82%.⁶

> The Malaysian government has expressed a goal that energy provided by small hydro schemes be increased to 490MW by 2020.⁷ 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,⁸ with plants in progress up to 2023 representing approximately 296.59MW,⁹ the largest share of all renewables under the FiT scheme. TNB (defined below) has a target of achieving small hydro capabilities of 1,700MW by 2025.¹⁰

Solar

> Solar PV potential in Malaysia is estimated at 6,500MW.¹¹ 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 2018.¹²

> 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.¹³

Biomass / biogas

In 2018, installed combined capacity of biomass and biogas under the FiT scheme was approximately 145MW.¹⁴ 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.

¹ ‘Performance and Statistical Information on Electricity Supply Industry in Malaysia 2017’, Energy Commission.

² SEDA Annual Report 2018.

³ Malaysia Energy Policy, Laws and Regulations Handbook 2015, Volume 1 Strategic Information and Basic Laws by International Business Publications, USA, page 39.

⁴ Ibid.

⁵ Malaysia Energy Statistics Handbook 2018, page 11.

⁶ According to Research firm Protege Associates which was quoted in ‘Championing renewable energy’, reported by The Star, 3 December 2018.

⁷ ‘Renewable Energy Development in Malaysia: Overview of Renewable Energy Policy: Are we on the right track?’, Sustainable Energy Development Authority Malaysia, 15 November 2011.

⁸ SEDA Annual Report 2018.

⁹ Data obtained from Sustainable Energy Development Authority.

¹⁰ Another TNB Commitment towards Renewable Energy, Tenaga Nasional Berhad, 1 April 2019.

¹¹ ‘Current perspective of the renewable energy development in Malaysia. Renew. Sustain. Energy Rev.’ (2011), Ahmad, S.; Kadir, M.Z.A.A.; Shafie, S., page 897–904.

¹² SEDA Annual Report 2018.

¹³ According to Malaysia’s Science, Technology and Innovation Minister, Datuk Seri Willfred Madius Tangau at the Astana Expo 2017 who was quoted in ‘Malaysia a world leader in manufacturing of solar power technology, says minister’, reported by The Star, 26 June 2017.

¹⁴ SEDA Annual Report 2018.



How does the system work?

Offtakers / Generators

> **Tenaga Nasional Berhad (“TNB”), Syarikat SESCO Berhad (“SESCO”), and Sabah Energy Corporation Sdn Bhd (“SESB”)** are the principal electricity 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 privatised whilst SESB is owned by both TNB and the state government of Sabah. TNB still dominates the power sector in Peninsular Malaysia as licenses to build, operate and own power plants were only issued to independent power producers in the early 1990s after the nationwide power blackout as a measure to overcome power outages and introduce competition in the power generation sector. However, the new government has stated an intent to carry out structural reform 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 utilisation of renewable energy and providing allocation for the implementation of energy-related projects and programmes.

> **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 initiatives and reporting on progress of these initiatives. Its key functions include improving national energy efficiency, increasing the percentage of electricity generation from renewable sources from 2% to 20% by year 2025 and improving the efficiency and transparency of the energy market to ensure the best tariffs for energy consumers.

Regulators

> **The Energy Commission (the “EC”)** is a statutory body established under the Energy Commission Act 2001 and is responsible for regulating the energy sector.

> **Sustainable Energy Development Authority Malaysia (“SEDA”)** is a statutory body formed to administer and manage the implementation of the feed-in mechanism which is mandated under the Renewable Energy Act 2011 (the “Renewable Energy Act”). Its key functions include promoting sustainable energy, managing existing sustainable energy programmes, assessing new sustainable energy solutions (in partnership with domestic and international stakeholders) on an ongoing basis and advocating sustainability to the public.

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 / individuals¹⁵ 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 utilise 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.¹⁶

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 out 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).¹⁷

Green Technology Financing Scheme (“GTFS”)

The GTFS aims to improve the supply and utilisation of green technology by providing financial assistance to producers of green technology. RM2 billion has been allocated to the scheme under the 2019 budget and this will take the form of soft loans supported by the Malaysian government. Under the GTFS, 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 to be borne by participating financial institutions).

The scheme applies to financing amounts of up to RM100m for producers of green technology (≤ 15-year tenure), RM50m for users of green technology (≤ 10-year tenure), and RM25m for energy services companies (“**ESCOs**”) (≤ 5-year tenure). Applicants must be Malaysian-owned (≥51%) 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 / retrofitting / expansion projects and energy performance contracting that incorporate green technology elements in Malaysia that have not yet been funded.

Tax incentives

Malaysian-incorporated companies that undertake green technology projects or provide 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:

- > **Pioneer 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 apply to:
 - > **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 conserve the natural environment 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, materials, spare parts and consumables used directly in the generation process and that are not produced locally. For locally purchased machinery, equipment, materials, spare 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 Ministry of Finance on a case-to-case basis.
- > **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 townships.

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 land is proven by registered title. A non-citizen or foreign company may acquire land in Malaysia, but prior approval of the Federal Government of Malaysia may be required and, depending on the requirements of the state, prior approval of the relevant state authority.

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 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 (“LSS3”) which are scheduled for commercial operation in 2021: (i) ib vogt GmbH and Coara Solar Sdn. Bhd. (100MWac in Marang, Terengganu); (ii) Cypark Resources Berhad and Impian Bumiria Sdn. Bhd. (100MWac in Marang, Terengganu); (iii) JKH Renewables Sdn. Bhd. and Solarpack Asia Sdn. Bhd. (90.88MWac in Kuala Muda, Kedah); (iv) ENGIE Energie Services S.A. and TTL Energy Sdn. Bhd. (100MWac in Kerian, Perak); and (v) Konsortium Beseri Jaya Sdn. Bhd. and Hanwha Energy Corporation Singapore Ltd. (100MWac in Pekan, Pahang).¹⁸ The average offer prices in the third round bidding have dropped substantially with the lowest offer price submitted at MYR 0.17777/kWh as compared to MYR 0.3398/kWh being the lowest offer price submitted at the previous second bidding under category P3 (10.00MW to 30.00MW) in Peninsular Malaysia.¹⁹

The government intends to follow the current third tender with a larger one in 2020.

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, Liwagu 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.

¹⁵ Note that this program only applies to renewables projects that generate up to 30MW in size.

¹⁶ ‘RM 325 mil boost for renewable energy fund’, reported by The Star, 10 February 2014.

¹⁷ According to Energy, Science, Technology, Environment and Climate Change, Minister Yeo Bee Yin who was quoted in ‘Beginning 2019, no price difference between solar generation and consumption tariff’, reported by The Edge Markets, 22 October 2018.

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

¹⁹ Energy Commission of Malaysia’s website.

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 Malaysian 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.²⁰ 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 option 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 Tadau 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

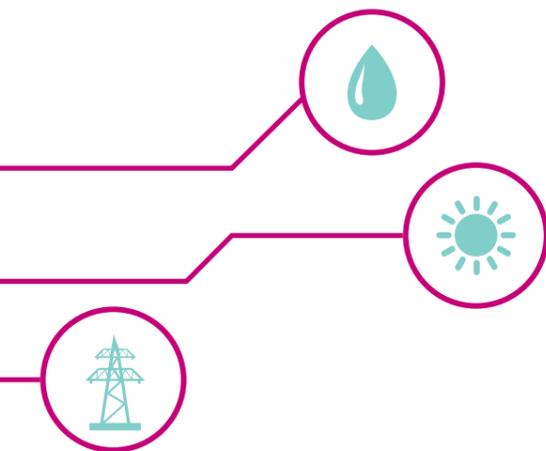
Major benefits of financing by Green SRI Sukuks stem from the SRI Sukuk Framework, whereby institutions raising funds are entitled to claim 90% of the costs of engaging experts to review the project, subject to a maximum of RM300,000 per issuance. The scheme is open to domestic and foreign issuers and 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.

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This publication has been prepared with the assistance of ZICO Law, 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.



²⁰ Eleventh Malaysia Plan 2016-2020, Director General, Economic Planning Unit, Prime Minister Department, 21 May 2015, Part 6-17, 6-18.

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

²² Helping Malaysia Develop the Green Sukuk Market’, The World Bank, page 1.

²³ Islamic Green Finance Development, Ecosystem and Prospects, Securities Commission Malaysia, March 2019, page 29.

Renewable Energy in South Korea.



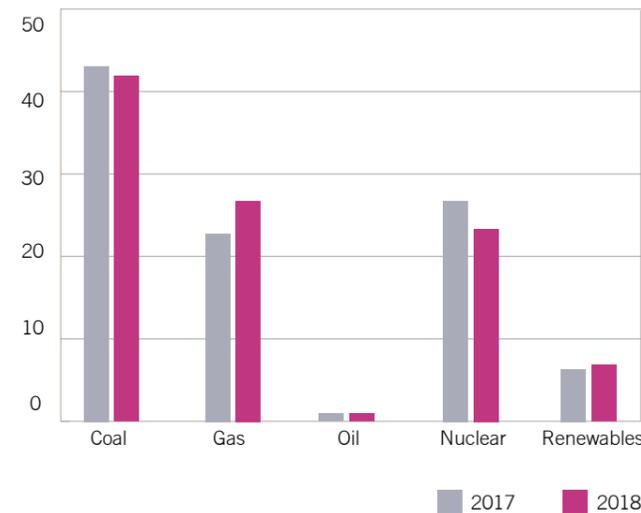
Overview

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:



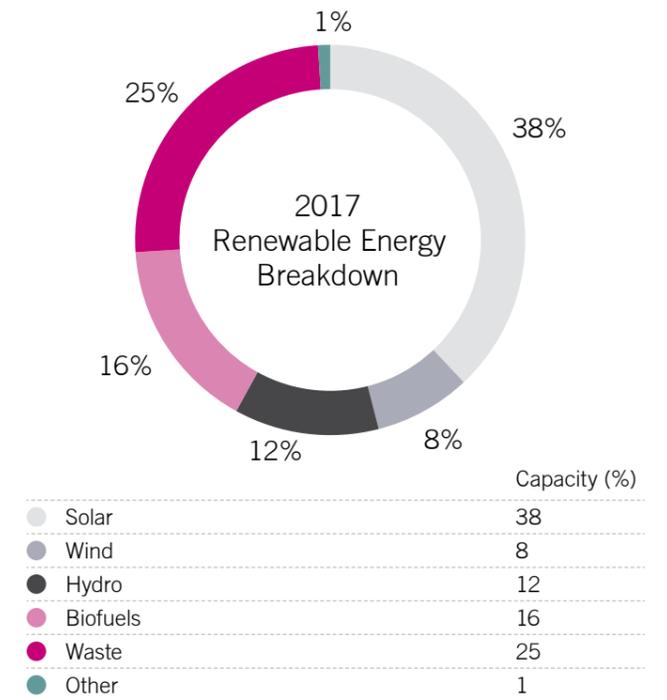
	2017 (%)	2018 (%)
Coal	43.10	41.90
Gas	22.80	26.80
Oil	1.00	1.00
Nuclear	26.80	23.40
Renewables	6.40	6.90

Source: Statistics from KEPCO and MOTIE¹

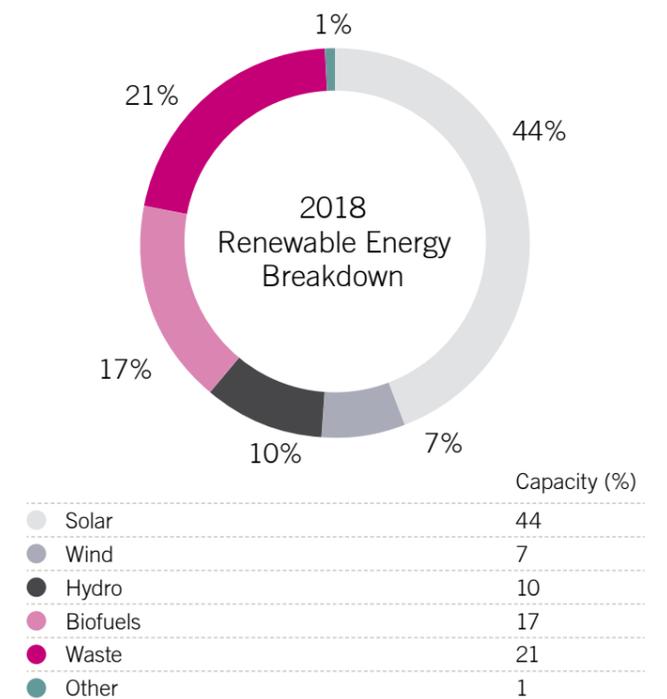
¹ Link to source: http://www.index.go.kr/potal/main/EachDtlPageDetail.do?idx_cd=1339.

² Link to source: http://kosis.kr/statHtml/statHtml.do?orgId=337&tblId=DT_337N_A005A&vw_cd=MT_ZTITLE&list_id=337_33701_2&seqNo=&lang_mode=ko&language=kor&obj_var_id=&itm_id=&conn_path=MT_ZTITLE.

The charts below set out estimated annual power generation capacity per each renewable source, as of 2017 and 2018.



Source: Statistics from MOTIE²



Source: Statistics from Korea Energy Agency²



A drive for renewable energy

In 2016, South Korea ratified 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%.

As part of well publicised policy initiatives, the South Korean Government (the “Government”) led by President Moon Jae-in has been increasing its efforts to lower the country's heavy reliance on coal and nuclear in electricity generation by raising power production from renewables and LNG.

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 – called the “Renewable Energy 3020” implementation plan. New power generation facilities with total installed capacity of 48.7GW are planned to be built, of which solar and wind power will account for 30.8GW and 16.5GW, respectively. On 29 December 2017, MOTIE also released the “8th Basic Plan for Long-term Electricity Supply and Demand”, which supplements and details the Government's plans to deploy clean energy and attain the goals stated in the Renewable Energy 3020 initiative by carrying out large-scale projects and power generation businesses that promote local resident's participation.

This initiative has been reaffirmed in the “3rd Basic Energy Plan” released by the Government in June 2019 which sets out a more long-term target of increasing the share of energy generated from renewable sources to 30-35% by the year 2040 and ceasing the build of new coal-fired or nuclear power plants. A detailed plan on how this could be achieved will be addressed and implemented in the “9th Basic Plan for Long-term Electricity Supply and Demand” which is expected to be released within 2020.³ It is expected that the implementation of new energy plans will open up investment opportunities for both Korean and international sponsors, investors and financiers. In particular, South Korea, together with Japan and Taiwan, is seen as a possible growth market for the global offshore wind sector and is currently attracting interest from both domestic and international developers and their financiers in relation to the development of a pipeline of utility-scale offshore wind projects in the country.

How does the system work?

Regulatory bodies

> **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 of these 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 2020.⁴

- > **KPX:** The Korea Electric Power Exchange (“KPX”), also established in 2001 as part of electricity sector reform, coordinates the wholesale electric power market and determines prices sold between generators and the KEPCO grid. Generation companies compete to sell power into an hourly auction pool operated by the KPX, with KEPCO acting as a single buyer. The auction pool is a “cost-based pool”, meaning that the generation companies are required to bid at their variable cost of operations. That said, end-use electricity prices in South Korea are regulated by the government and not necessarily tied to the actual cost of generation and distribution.
- > **MOTIE:** Under the Electricity Business Act (also known as the Electric Utility Act) (the “EB Act”), MOTIE is vested with the responsibility of establishing and implementing overarching policies relating to the energy sector including the electricity market. MOTIE'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 KPX; (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.
- > **Korea Energy Agency:** The Korea Energy Agency 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 Korea Energy Agency is responsible for systematic optimisation of energy consumption pattern, identification of energy saving methods in energy intensive businesses and providing energy audit services.
- > **New and Renewable Energy Center:** The New and Renewable Energy Center focuses on the development of new and renewable energy. The Korea Energy Agency and the New and Renewable Energy Center work closely together in the implementation of the renewable portfolio standard (“RPS”) regime. The New and Renewable Energy Center's roles include certifying generation facilities and assigning the relevant weight value to each facility for the purpose of REC issuance. 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 (also known as the Act on the Promotion of 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) will be 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.

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 activities; (iv) a 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. Developers 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 generation projects which have obtained the necessary permits and approvals, including the electricity business licence. In order for a developer to obtain its electricity business licence, 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, KPX, 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 installations;
- > pre-use inspection;
- > execution of electricity supply and demand contract;
- > registration as member of the KPX;
- > business commencement reporting; 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 feed-in-tariff mechanism in 2012.

The RPS scheme requires generators (both state and non-state owned) which have power generating facilities with installed capacity over 500MW to produce a minimum proportion of their power using new and renewable energy sources (the “Required Generators”). The minimum proportion is 7% as at 2020 with annual increases to 10% by 2023 (although these targets are subject to review and adjustment every three years). There are currently 21 generators which are designated as Required Generators. Non-complying power companies must pay a financial penalty up to an amount which is 50% above the average market price of RECs for that year.

Required Generators may satisfy the requirements under the RPS scheme by either investing in eligible generation themselves or purchasing RECs. The number of RECs allocated for electricity from renewable sources varies depending on the technology used, the location and the size of the installation.

Emissions trading scheme (“ETS”)

With effect from 1 January 2015, a cap-and-trade ETS for greenhouse gas emissions has been implemented in South Korea pursuant to the Act on the Allocation and Trading of Greenhouse Gas Permits. The ETS covers 591 of the country's largest greenhouse gas emitters or about 70% of national greenhouse gas emissions and provides a range of incentives (including where impacted entities invest in new and renewable energy projects) as well as penalties for failure to meet the relevant requirements.⁵

Restrictions on investment

Foreign direct investment is not generally restricted or limited in South Korea. If a foreigner's investment involving more than KRW 100,000,000 in a South Korean company exceeds 10% of the voting stock or results in participation in its management, then the investment is categorised as a direct investment under the Foreign Investment Promotion Law (also known as the Foreign Investment Promotion Act) (“FIPL”). All other minority stake investments are subject to the Financial Investment Services and Capital Markets Act and the Foreign Exchange Transaction Law (also known as the Financial Investment Services and Capital Markets Act and the Foreign Exchange Transactions Act) (“FETL”). However, regulatory requirements pursuant to FIPL and FETL are primarily procedural such as obtaining a foreign investment registration number from the Financial Supervisory Service and establishing certain accounts with a foreign exchange bank. Certain restrictions apply to the acquisition of ownership in certain public entities such as KEPCO.

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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. Like other international law firms, Linklaters is not qualified to advise on Korean law. For the purposes of this note we have relied on our general understanding of the market including based on advice received from leading Korean local counsel in recent transactions in the renewable energy sector.

³ “The 3rd Basic Energy Plan” (June 2019), by MOTIE pages 52-54.

⁴ Link to source: <http://epsis.kpx.or.kr/epsisnew/selectEkpoBcpGrid.do?menuId=030400>.

⁵ Link to source: <http://www.me.go.kr/home/web/board/read.do?menuId=286&boardMasterId=1&boardCategoryId=39&boardId=886420>.



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 largely imported fossil fuels and towards home grown wind, solar, hydro and other renewable energy sources.

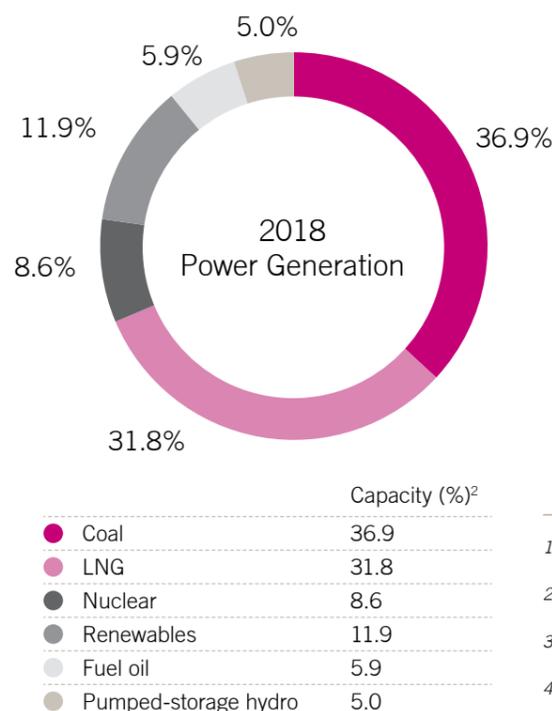
The key driver of this is the government's decision to phase out nuclear power (which currently accounts for approximately 10% of Taiwan's installed generation capacity) as well as to reduce its reliance on imported coal.

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 275,577.9GWh 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:



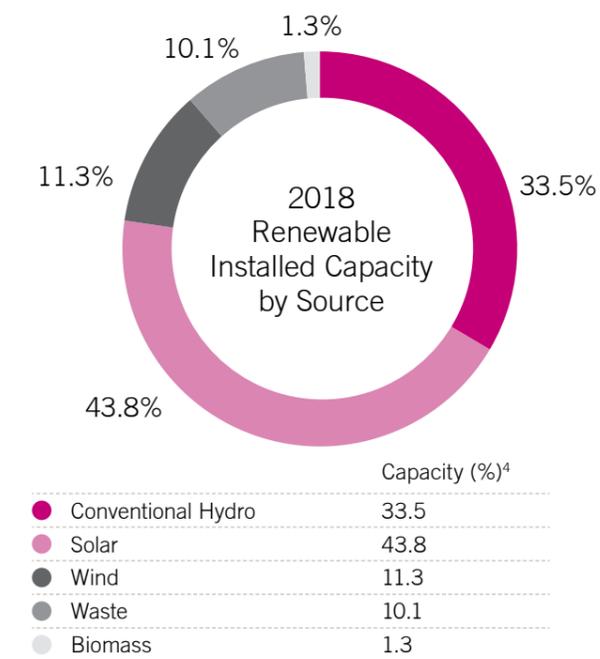
In 2016, the government announced that, by 2025, it would phase out nuclear power generation. To plug this energy gap, the government announced ambitious targets to increase the amount of electricity generated from renewable sources to 20% of the island's energy supply.

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:



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

- > **Solar:** 20GW by 2025⁵
- > **Offshore wind:** 5.5GW by 2025 (see below)
- > **Onshore wind:** 1.2GW by 2020⁶

1 Source: Energy Supply and Demand Situation of Taiwan in 2018 published by the BOE at https://www.moeaboe.gov.tw/ECW/english/content/ContentLink.aspx?menu_id=1540.
 2 Source: Structure of Installed Capacity and Structure of Electricity Generation (by Fuel) (2018) https://www.moeaboe.gov.tw/ECW/english/content/ContentLink.aspx?menu_id=1540.
 3 Source: "Towards the Goal of a Nuclear-Free Homeland by 2025 – Promotion of New Energy Policy" press release by the Executive Yuan, 17 September 2016.
 4 Source: Structure of Installed Capacity and Structure of Electricity Generation (by Fuel) (2018) https://www.moeaboe.gov.tw/ECW/main/content/wHandMenuFile.ashx?file_id=3999.
 5 Source: Solar PV Two-Year Promotion Project (BOE announcement) https://www.moeaboe.gov.tw/ECW/english/content/Content.aspx?menu_id=5492.
 6 Source: Thousand Wind Turbines Promotion (BOE maintained web article) https://www.moeaboe.gov.tw/ECW/english/content/Content.aspx?menu_id=1763.

To support the development of renewable energy the government 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.⁷ The MOEA's energy-related functions are delegated to the Bureau of Energy ("BOE").⁸
- > **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.

7 Source: Article 3 of the EB Act.

8 Source: Act on the Organization of the Bureau of Energy (經濟部能源局組織條例 - 中華民國93年1月20日).

- > The **Electricity Regulatory Agency** is a new regulatory agency to be designated by the MOEA pursuant to the EB Act, which will be responsible for (among other things) supervising and administrating electricity enterprises and the electricity market, approving applications for the set-up of electricity enterprises, predicting and planning power supply and demand, supervising and administrating power dispatch and settling disputes between electricity enterprises or between electricity enterprises and users. Before the Electricity Regulatory Agency is established, its functions will be exercised by the MOEA.
- > The **Fair Trade Commission** is an independent agency which oversees competition and fair trade matters, including anticompetitive behaviour in the power sector.

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 purchased 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 published by the MOEA through a tariff notice. PPAs for renewable energy are entered into with Taipower (as grid operator) for 20 years based on the relevant FiT contained in the applicable tariff notice at such time. Depending on the type of energy, different pricing options may be available under the relevant tariff notice.

A summary of the FiTs for renewable energy applicable for the calendar year 2020 is set out below.⁹

Type of Renewable Energy	FiT (NTD/kWh)
Onshore wind	2.2888 to 7.7998 (depending on capacity)
Offshore wind	5.0946 (or 5.8015 for the first period of 10 years and 3.8227 for the second period of 10 years)*
Solar photovoltaic	3.9383 to 5.7132 for First Phase FiT (depending on technology, capacity and location) 3.8752 to 5.7132 for Second Phase FiT (depending on technology, capacity and location)
Run-of-the-river Hydroelectricity	2.8599
Geothermal Energy	5.1956 (or 6.1710 for the first period of 10 years and 3.5685 for the second period of 10 years)
Biomass Energy	2.6871 to 5.1176 (depending on technology)
Waste	3.9482

*Tiered production caps apply such that the FiT will reduce to 75% of the applicable rate for generation from 4,200 to 4,500 annual full load hours, and to 50% of the applicable rate for generation above 4,500 annual full load hours.

Funding of the FiT

The 'RED Fund' was established 2009 to support renewable power generation, including by subsidising renewable energy tariffs. This is funded by conventional power producers, government treasury contributions and other sources. However, the primary obligation for payment of the FiT sits with Taipower.

Amendments to the REDA in May 2019 included stipulations that the RED Fund would no longer be available to subsidise renewable energy tariffs in the future, and Taipower will instead be allowed to pass on the cost of renewable energy to end-users. The effective date of these particular provisions of 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 5.5GW of grid capacity to offshore wind projects which obtained approval of an Environmental Impact Assessment by the end of 2017.¹⁰

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 'fast 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 that were allocated capacity in the selection process and the bidding process can be found on the MOEA website.¹¹

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 enters 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 Tiers 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 Tiers 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 changes in shareholding, and lock-in of original 'promoters'; 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 crews, 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 3GW and 17GW.¹² There have also been examples of floating solar technology uses.

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 production.

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.

⁹ Source: https://www.moeaboe.gov.tw/ECW/english/news/News.aspx?kind=6&menu_id=958&news_id=16315.

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.

¹¹ Projects awarded capacity through the selection process were listed at: https://www.moeaboe.gov.tw/ECW/populace/news/News.aspx?kind=1&menu_id=41&news_id=15003.

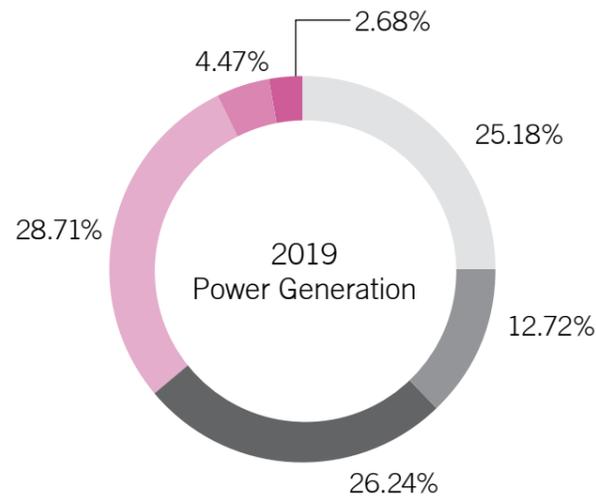
Projects awarded capacity through the bidding process are listed at: https://www.moeaboe.gov.tw/ECW/populace/news/News.aspx?kind=1&menu_id=41&news_id=15061.

¹² Source: Solar PV Two-Year Promotion Project ("BOE" announcement) https://www.moeaboe.gov.tw/ECW/english/content/Content.aspx?menu_id=5492.



Which sectors are active?

As of October 2019, Thailand’s existing generation capacity was 52,232.77MW, 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:



	Capacity (%)
● Solar	25.18
● Wind	12.72
● Hydro	26.24
● Biomass	28.71
● Biogas	4.47
● Waste	2.68

Source: Energy Development and Efficiency, the Ministry of Energy (https://www.dede.go.th/download/stat62/Percentage_of_Alternative_Energy_Consumption_October_2562.pdf)

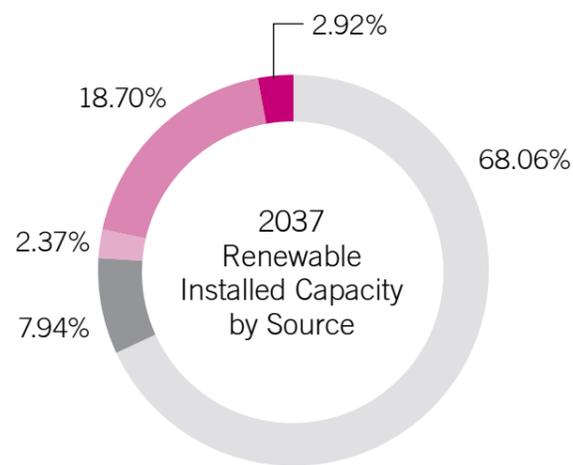
Renewable Energy Generation Plan

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 as at the end of 2037 is 56,431MW (taking into account the existing generating capacity as at December 2017 of 46,090MW less the expected retiring generators as at 2037 of 25,310MW).

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 renewables 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:



	Capacity (%)
● Solar	68.06
● Wind	7.94
● Hydro	-
● Waste	2.37
● Biomass	18.70
● Biogas	2.92
● Energy crop	-

How does the system work?

Power Offtakers

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.
- > Metropolitan Electricity Authority (“MEA”) – a state enterprise responsible for the distribution and sale of electricity to end users in Bangkok and its surrounding areas; as with PEA, they obtain most of the power by purchasing it 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.
- > Small Power Producer (“SPP”) – a small scale power producer with a maximum capacity not exceeding 90MW which sells electricity to EGAT under a long-term PPA, i.e. 20-25 years (other than an SPP generating power from a renewable energy source where the PPA will be for a period of five years and renewal can be made upon request by one party).
- > Very Small Power Producer (“VSPP”) – a very small scale producer with a maximum generating capacity not exceeding 10MW, which sells electricity to either PEA or MEA, depending on the location of the project.

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 secretary office.

The Ministry of Energy (“MOE”):

- > has authority over the procurement, development and management of energy;
- > has state sectors, such as 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 VSPP 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:

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

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

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

* 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, Pattanee province, Narativas province and certain districts in Songkla province.

*** Changed by the resolution of the National Energy Policy Council on 26 September 2016 (from THB 5.66 as approved by the National Energy Policy Council on 15 August 2014).

Topical issues

Solar Rooftops

The ERC issued a notification on the purchase of solar rooftop generated electricity with effect from 2013. The notification prescribed the criteria and qualification of VSPP applicants for the sale of electricity to the MEA, with a total of 200MW (100MW each for houses and commercial buildings/factories) and 25 years for the supporting period. However, the targeted purchase of household solar rooftop generated electricity was not achieved due to the incentives not being attractive enough, given the cost of investment. The ERC therefore issued another notification on the purchase of solar rooftop generated electricity for houses in 2015 for further electricity purchases to achieve the 100MW target. Pursuant to the NEPC's resolution of 11 March 2016, the Commercial Operation Date ("COD") was extended to 30 April 2016 and 30 June 2016 for solar rooftops of commercial buildings/factories and houses respectively. As of 30 June 2016, the COD was achieved, with a total of 6,166 projects and a total generating capacity of 130MW (being 164 projects with 82MW for commercial buildings/factories and 6,002 projects with 48MW for houses).

Furthermore, there is a pilot project for the regulation-free installation of solar rooftops on houses and buildings with a total of 100MW pursuant to the ERC notification of 11 August 2016, which opened for applications from 22 August 2016 to 7 October 2016 for electricity generated for use in such houses and buildings as a main purpose.

Pursuant to the PDP 2018, 10,000MW in solar projects is supported. It is expected that the focus will be for the VSPP and household sectors to sell or exchange surplus power to the grid via solar rooftops which should benefit solar roof product manufacturers and installation service providers. However, the government's plan to start from a minimal capacity of 100MW per annum in the first 10 years suggests slow growth in the implementation of these projects at the beginning. The ERC has already begun and completed the first 100MW public solar rooftop scheme with online applications opening from 24 May 2019 (on a first-come-first-served basis) with a cap of 10kWp generating capacity per household for a 10-year contract at a tariff rate of THB 1.68/unit.

EGAT Hydro floating solar

EGAT will develop a 2,725MW hydro floating solar project across nine dams in Thailand and opened an international bidding process for a 46MW floating solar project at Sirindhorn dam in Ubon Ratchathani in June 2019, with a target to commence operations by year 2020.

Bidding on this project closed on 20 August 2019, with the announcement of the successful bidder in November 2019.

EGAT is now working on the terms of reference for a floating solar project with generating capacity of 24MW at Ubolratana dam in Khon Kaen which is expected to be ready in 2021. The project is aimed to be opened for bidding in year 2021.

Community-based power plant

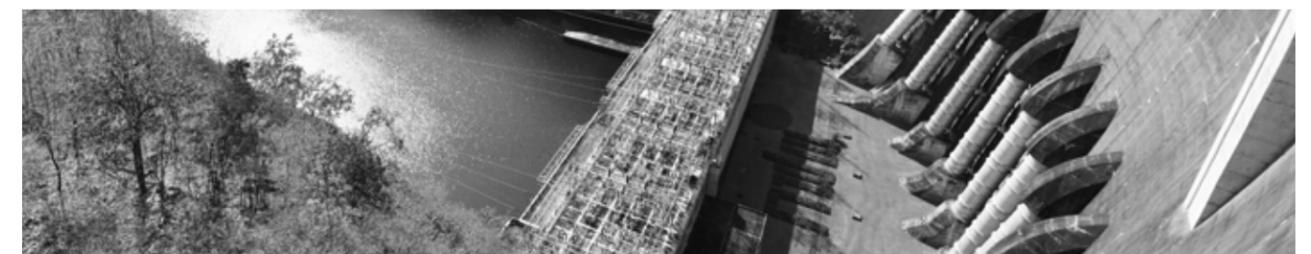
On 4 December 2019, the NEPC approved the framework of the community-based power plant project. The main responsible authority for bidding of this project is the Department of Alternative Energy Development and Efficiency.

The community-based power plant project will apply a FiT scheme for purchase of 700MW electricity from a non-firm VSPP power plant formed as a joint investment between (i) the project owner (i.e. private operator and government authority) of 60-90% shareholding and (ii) community enterprise (set up with members of at least 200 households) of 10-40% preference shareholding. The community enterprise will share the gross revenue with the community fund in the developing local area in which the power plant is located. The project will commence between March and April 2020. The applicable FiT rate will be around THB 2.9 – 5.4 per unit. The additional FiT premium of THB 0.5 per unit will be obtained in special areas being Yala, Pattani Province, Narathiwat Province and four districts of Songkhla Province. The sources of energy are agricultural waste used for biomass and biogas and the installation of solar panels.

The project is divided into two phases being "Quick Win" project (not more than 100MW for the power plants of which the construction has been completed or almost completed) with the commercial operation within year 2020 and general project with the commercial operation starting from 2021 onwards.

SPP Hybrid Firm bidding process

On 17 February 2017, the NEPC approved a competitive bidding process for the generation of 300MW of electricity capacity by renewable SPPs (i.e. a power producer with a capacity of more than 10MW but not exceeding 50MW). The process has been led by the ERC. The capacity has been allocated to different geographical areas in Thailand e.g. Bangkok, central, west, east, south (excluding Phuket and Samui Island), northeastern, Phuket and Samui Island. The source of energy can be one type of renewables or more (proportion is not restricted), but fossil fuels must not be used. The project will be under the "firm" PPA (i.e. generating capacity at 100% during peak period and not more than 65% during the off-peak period) with the feed in tariff rate at THB 3.66 for the supporting period of 20 years. The scheduled COD will be prior to 31 December 2021. The application period was between 16-20 October 2017 and the list of awarded bidders was announced on 14 December 2017.



Renewable Energy in Thailand.

**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; or
- > 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.

February 2020

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Renewable Energy in Vietnam.

**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 60GW by 2020 and 130GW 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 in 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 9.9 per cent 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,¹ 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. Firstly, 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.

¹ Statistics of Electricity Vietnam.



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 out 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 2GW capacity pool only); or
 - > before 30 June 2019 in other provinces;
- > from wind power projects already in operation before 10 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.

Table 1 sets out the current FiT rate for each different type of renewable energy project.

Table 1 – FiT rate for different types of renewable energy

Wind (COD before 1 November 2021)	9.8 US cents/kWh for offshore projects
	8.5 US cents/kWh for onshore projects
Biomass	5.8 US cents/kWh
Solid Domestic Waste	Waste incineration: 10.05 US cents/kWh
	Combustion of landfill gas: 7.28 US cents/kWh
Solar (COD before 30 June 2019; or on or before 31 December 2020 in Ninh Thuan)	9.35 US cents/kWh
Solar (proposed for COD after 30 June 2019)^(a)	Ground mounted: 7.09 US cents/kWh ^(b)
	Floating: 7.69 US cents/kWh ^(b)
	Rooftop: 8.38 US cents/kWh ^(c)

- a) Proposal by MOIT as at February 2020.
- b) The MOIT has proposed two options for application of these FiTs for ground and floating projects:
 - Option 1:** They will apply for grid-connected projects that have signed PPA and commenced construction before 23 November 2019, and reach COD between 1 July 2019 and 31 December 2020.
 - Option 2:** They will apply for grid-connected projects that have received in-principle approval for investment before 23 November 2019, and reach COD between 1 July 2019 and 31 December 2020.
 In either option, projects will be put through an auction process if they do not meet the FiT criteria.
- c) Proposed for projects that start generation between 1 July 2019 and 31 December 2020.

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, solid 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).

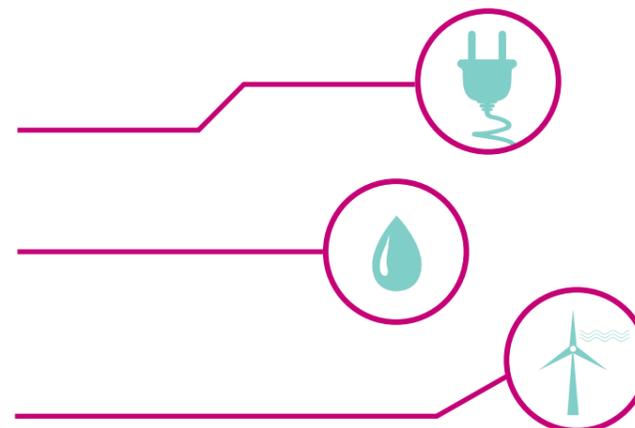
Investment incentives

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

Category	Incentives
Import duty	<ul style="list-style-type: none"> – Exemption for: <ul style="list-style-type: none"> – goods imported to form fixed assets; and – project materials, components, and semi-finished products that cannot be domestically manufactured.
Corporate income tax	<ul style="list-style-type: none"> – Exemption for the first four years;^(a) – 50 per cent reduction for the following nine years; and – Preferred tax rate of 10 per cent for the first 15 years.^(b)
Land lease fees	<ul style="list-style-type: none"> – Exemption ranging from 14 years to the entire project life depending on the project location.

- a) Counting from the first year of generating taxable income or from 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.



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.

Renewable Energy in Vietnam.



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.

Curtailement 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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