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# Alternative Energy & Power

Japan

Law and Practice

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## Law and Practice

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## 1. General Structure and Ownership of the Power Industry

### 1.1 Principal Laws Governing the Structure and Ownership of the Power Industry

#### General Structure and Ownership

The structure of the Japanese power industry was established during the occupation period after World War II when nine vertically integrated companies, each covering a different geographical region in Japan, were incorporated on 1 May 1951 pursuant to a directive from General Headquarters (GHQ). Each of these nine companies were granted a monopoly over all electricity business (generation, transmission, distribution and retail sectors) in their specific region. Those nine companies were:

- Tokyo Electric Power Company, Inc;
- Chubu Electric Power Company, Inc;
- The Kansai Electric Power Company, Inc;
- Tohoku Electric Power Company, Inc;
- Kyushu Electric Power Company, Inc;
- The Chugoku Electric Power Company, Inc;
- Hokkaido Electric Power Company, Inc;
- Hokuriku Electric Power Company, Inc; and
- Shikoku Electric Power Company, Inc.

In 1972 when Okinawa was returned to Japan from the USA, Okinawa Electric Power Company, Inc was incorporated and granted a monopoly over electricity business in Okinawa.

These nine companies and Okinawa Electric Power Company, Inc are referred to as “Major Utilities”.

There were two exceptions to this vertical integration. They are both wholesale electricity generators: (i) Electric Power Development Co, Ltd (also known as “*Denpatsu*” or, since 2002, “J-Power”), which was incorporated in 1952 as a State-owned corporation (with 40% of its shares held by Major Utilities) to supplement the generation capacity of the original nine companies, and (ii) Japan Atomic Power Company, which was incorporated in 1957 to promote the development of nuclear power plants by Major Utilities and J-Power.

#### Power Industry Liberalisation

This vertical integration and the regional monopolies over the generation, transmission, distribution and retail sectors have been gradually relaxed and liberalised since 1995.

In the generation sector, an Independent Power Producer (IPP) scheme was introduced in 1995 which liberalised the generation and wholesale of electricity.

#### Retail sector

In the retail sector, a Power Producer and Supplier (PPS) licencing regime was introduced in 2000 which partially liberalised retail sales of electricity. A PPS licence holder could sell its generated electricity to large-volume purchasers (meaning purchasers of 50 kW or more). However, the PPS licence scheme was abolished in 2016 when all electricity retailers were folded into a single category for the regulatory purposes.

In the transmission and distribution sectors, a Specified Electricity Business operator licence scheme was established in 1995 under which the holder of such licence may sell its generated electricity to consumers in a very limited geographical area through a transmission and distribution network that it operates and maintains on its own in such area. As such, this scheme also dilutes the regional monopolies and vertical integration that were established under the GHQ directive in 1951.

In 2003, an electricity wholesale market, the Japan Electric Power Exchange (JEPX), was established to provide a liquid market of electricity. In 2004, J-Power was privatised through being listed on the Tokyo Stock Exchange.

Since 2013, the power industry has been undergoing further structural reform that consists of:

- establishing a system to efficiently manage electricity across the transmission networks in Japan;
- full liberalisation of the retail sector; and
- “legal unbundling” of the transmission and distribution sectors from the generation and retail sectors (see **1.6 Recent Material Changes in Law or Regulation**).

#### Principal Laws

The Electricity Business Act (Act No 170 of 1964, as amended; note the URL shows the Act as of 1 April 2019 and further amendments are not reflected) is the principal law governing electricity business in Japan. Under this Act there are five types of regulated business:

#### Electricity Generation Business (*hatsuden jigyo*)

is the business to generate and sell electricity to retail sellers.

#### General Electricity Transmission And Distribution Business (*ippan sohaiden jigyo*)

This is the operation and maintenance of an electricity transmission and distribution network. General Electricity Transmission And Distribution Business corresponds to the electricity transmission and distribution segment of the business that each of the Major Utilities (including their wholly-owned subsidiaries) have conducted and continue to conduct since their inception under their regional monopolies. Those who engage in Gen-

eral Electricity Transmission And Distribution Business are also required to provide ancillary services such as supply-demand adjustment and frequency control in their region.

#### *Electricity Transmission Business (soden jigyo)*

This is an exception to the principle of non-separation of transmission and distribution services and is the business to transmit electricity to a General Electricity Transmission And Distribution Business operator through transmission lines that the Electricity Transmission Business operator operates and maintains on its own. Unlike a General Electricity Transmission And Distribution Business operator, an Electricity Transmission Business operator is not responsible for providing the ancillary services as described in the previous paragraph.

#### *Specified Electricity Transmission And Distribution Business (tokutei sohaiden jigyo)*

This is a form of electricity business which allows the Specified Electricity Transmission And Distribution Business operator to sell electricity on its own network to consumers within certain limited geographical area.

#### *Retail Electricity Business (kouri denki jigyo)*

This is the business to sell electricity to consumers.

## 1.2 Principal State-Owned or Investor-Owned Entities

All Major Utilities are investor-owned companies with one exception: Tokyo Electric Power Company Holdings. This Major Utility has more than 50% of its shares held by the Nuclear Damage Compensation and Decommissioning Facilitation Corporation which is a quasi-governmental institution having half of its capital is funded by the government and was established in response to the Fukushima nuclear incident in 2011. All Major Utilities are listed on a stock exchange in Japan and their stock is freely traded in the market.

### Generation

As of the end of April 2020, there are 884 Electricity Generation Business licence holders.

The principal Electricity Generation Business Operators are Major Utilities or their wholly-owned subsidiaries and J-Power. They include:

- JERA Co, Inc;
- Tokyo Electric Power Company Holdings, Incorporated;
- Chubu Electric Power Company, Incorporated;
- The Kansai Electric Power Company, Incorporated;
- Tohoku Electric Power Company, Incorporated;
- Kyushu Electric Power Company, Incorporated;
- The Chugoku Electric Power Company, Incorporated;

- Hokkaido Electric Power Company, Incorporated;
- Hokuriku Electric Power Company, Incorporated;
- Shikoku Electric Power Company, Incorporated; and
- The Okinawa Electric Power Company, Incorporated).

### Transmission and Distribution

As of the end of April 2020, there are ten General Electricity Transmission And Distribution Business licence holders, three Electricity Transmission Business licence holders and 33 Specified Electricity Transmission And Distribution Business licence holders.

The main transmission and/or distribution network operators are Major Utilities or their wholly-owned subsidiaries (and J-Power Transmission Network Co, Ltd). They include:

- TEPCO Power Grid, Incorporated;
- Kansai Transmission and Distribution, Incorporated;
- Chubu Electric Power Grid Company, Incorporated;
- Tohoku Electric Power Network Company, Incorporated;
- Kyushu Electric Power Transmission and Distribution Company, Incorporated;
- The Chugoku Electric Power Transmission and Distribution Company, Incorporated;
- Hokkaido Electric Power Network Company, Incorporated;
- Shikoku Electric Power Transmission & Distribution Company, Incorporated;
- Hokuriku Electric Power Transmission & Distribution Company, Incorporated; and
- The Okinawa Electric Power Company, Incorporated).

### Retail

Since 1995, Retail Electricity Business has been gradually liberalised. After full liberalisation of the retail electricity market in 2016, the number of Retail Electricity Business licences has grown significantly from 57 in August 2015 to 655 in May 2020. Although most of them are investor-owned companies, there are some retail electricity suppliers owned by municipal governments.

The main retail electricity suppliers include:

- TEPCO Energy Partner, Incorporated;
- The Kansai Electric Power Company, Incorporated;
- Chubu Miraiz Electric Power Company, Incorporated;
- Tohoku Electric Power Company, Incorporated;
- Kyushu Electric Power Company, Incorporated;
- The Chugoku Electric Power Company, Incorporated;
- Hokkaido Electric Power Company, Incorporated;
- Shikoku Electric Power Company, Incorporated;
- Hokuriku Electric Power Company, Incorporated;
- The Okinawa Electric Power Company, Incorporated;

- ENNET Corporation;
- Tokyo Gas Co., Ltd;
- KDDI Corporation;
- Osaka Gas Co, Ltd; and
- JXTG Nippon Oil & Energy Corporation.

Of these main retail electricity suppliers, Major Utilities or their wholly-owned subsidiaries in aggregate supply most of Japan's electricity. As of December 2019, the share by sales volume of the electricity supplied by them was approximately 16.2%.

### 1.3 Foreign Investment Review Process

The Electricity Business Act does not provide any nationality requirement to obtain an electricity business licence or any restriction with respect to foreigners owning shares in an electricity business licence holder.

Under the Foreign Exchange and Foreign Trade Act (Act No 228 of 1949, as amended; note the URL shows the Act as of 1 October 2017), however, a foreign investor may not invest in an unlisted power company or own 1% or more of the shares in a listed power company unless the foreign investor gives written notice through the Bank of Japan (BOJ) to the Ministry of Finance (MOF) and the Ministry of Economy, Trade and Industry (METI) of the foreign investor's intent to do so and the required waiting period elapses without the notification being questioned or objected to by MOF and METI. The required waiting period is usually 30 days but it may be shortened to two weeks or extended up to five months at the discretion of MOF and METI.

On the other hand, the waiting period will be shortened to five business days if the investment falls within one of the following categories:

- incorporation of a wholly-owned subsidiary in Japan or acquisition of equity or debt in a wholly-owned subsidiary in Japan, or the opening of a branch in Japan (each a so-called "greenfield investment");
- acquisition of additional equity in a Japanese company without the foreign investor changing its shareholding in the Japanese company and with no change in the management structure of the Japanese company, within six months from the most recent acquisition of equity in the Japanese company by the foreign investor for which a notification to the Minister was made (a so-called "rollover investment"); or
- acquisition of equity or debt in a Japanese company as a passive investor having no voting rights on material management matters regarding the Japanese company (a so-called "passive investment").

### Notifications in Practice

In practice, most notifications fall within one of these three categories. For example, in 2015, approximately 90% of the notifications made with respect to investments over which METI held jurisdiction (which includes investments in the energy sector) fell into one of these three categories and thus were cleared within five business days.

If during the waiting period, MOF or METI decides that the investment may undermine national security, public order, or public safety, or adversely affect the national economy, MOF and METI may issue a warning to change the terms of, or cancel, the investment. If the foreign investor does not adequately respond to the warning or the foreign investor expresses an intention to disobey the warning, MOF and METI may issue an order to change the terms of, or cancel, the investment.

At the time of writing, the only examples of a warning to cancel an investment and an order to cancel an investment were those issued by MOF and METI against the Children's Investment Fund in 2008 when it attempted to increase its shareholding in J-Power from 9.9% to 20%.

### 1.4 Principal Laws Governing the Sale of Power Industry Assets

The Electricity Business Act regulates the sale of an entire business, an amalgamation or merger and a corporate split (collectively "Business Transfer"), made by an operator of an electricity business.

Under the Electricity Business Act, an operator of Electricity Generation Business, Specified Electricity Transmission And Distribution Business or Electricity Retail Business may implement a Business Transfer at its own discretion. However, an operator of General Electricity Transmission And Distribution Business or Electricity Transmission Business may not implement a Business Transfer without the prior written approval of METI, without which the Business Transfer will be deemed to not take effect.

Further, the Electricity Business Act requires an operator of General Electricity Transmission And Distribution Business or Electricity Transmission Business to make a prior written notification to METI if the operator sells or disposes of the facility used to conduct that Business. If METI considers that such sale or disposition adversely affects the operation of that Business, METI may issue an order to change the terms of or prohibit such sale or disposition.

A person who has acquired facilities used to conduct an electricity business must submit a written notification after the acquisition to METI under the Electricity Business Act.

**Nuclear Power Plant and Monopolisation**

The Act on the Regulation of Nuclear Source Material, Nuclear Fuel Material and Reactors (Act No 166 of 1957, as amended; note the URL shows the Act as of 1 March 2014) provides that an operator of a nuclear plant may not implement an amalgamation or merger or a corporate split without the prior written approval of the Nuclear Regulation Authority (NRA). In addition, a person who intends to acquire a nuclear power plant must obtain the permission of the NRA before the transfer.

More generally, under the Act on Prohibition of Private Monopolisation and Maintenance of Fair Trade (Act No 54 of 1947, as amended; note the URL shows the Act as of 1 April 2015), if a merger, amalgamation, company split or transfer of business substantially restrains competition in a particular field of trade, the Japanese Fair Trade Commission (JFTC) may issue an order forbidding such actions or to change the terms of such actions.

**1.5 Central Planning Authority****METI and ANRE**

The ministry responsible for energy policy is METI, and the Agency for Natural Resources and Energy (ANRE), a government organisation under METI, is in charge of proposing and implementing the energy policies adopted by the government. ANRE also has independent authority to promulgate rules to implement those policies. As such, except for safety regulations, most regulatory aspects of the electricity industry are delegated to ANRE.

**OCCTO**

As a part of the ongoing reform of the electricity industry, the Organisation for Cross-regional Co-ordination of Transmission Operators (OCCTO) was established in 2015. All licensed operators of electricity businesses must join OCCTO, which has the power to give directions to operators in order to achieve its mission.

The fundamental purpose of OCCTO is to co-ordinate the transmission networks in Japan in accordance with the Network Codes (which are issued by OCCTO and approved by METI; note the URL shows the Codes as of 1 February 2020), so that the transmission networks are integrated and operated, maintained and developed in a consistent manner. The Network Codes provide the rules on how network operations are to be performed (including the procedures required by a network user in relation to accessing the networks). All electricity business operators, as members of OCCTO, are required to operate their business in accordance with the Network Codes and directions from OCCTO.

Formerly, the demand and supply of electricity was monitored at the transmission network level by each of the Major Utilities.

In 2004, however, the Electricity Power System Council of Japan (ESCJ) was established to support co-ordination between Major Utilities. OCCTO was subsequently established to strengthen control of the demand and supply of electricity nationwide as a successor of ESCJ. OCCTO monitors the demand and supply of electricity at a country level.

**EGC**

The Electricity and Gas Market Surveillance Commission (EGC) was established on 1 September 2015, six months before the electricity retail market was fully liberalised on 1 April 2016 (the gas retail business was liberalised one year later, on 1 April 2017). EGC's primary mission is to monitor the energy market and propose better regulations to promote competition.

In order to achieve its mission, EGC, as an advisory body to METI, has the power to issue warnings to operators of electricity business and to propose solutions to METI. EGC detects improper trades through daily market surveillance; examines and reviews the rate of transmission and distribution tariffs and regulated retail tariffs set by Major Utilities; and proposes regulations to promote competition or protect consumers.

**1.6 Recent Material Changes in Law or Regulation**

As described in **1.1 Principal Laws Governing the Structure and Ownership of the Power Industry**, the vertical integration and regional monopolies in the generation sector and the retail sector have been gradually relaxed and liberalised since 1995.

Since then and continuing into 2020, the electricity industry has undergone structural reform in stages that consist of:

- establishing a system to efficiently manage electricity across the transmission networks in Japan;
- full liberalisation of the retail sector; and
- a “legal unbundling” of the transmission and distribution sectors from the generation and retail sectors.

As noted in **1.5 Central Planning Authority**, OCCTO was established in 2015. Subsequently, the retail sector was fully liberalised in 2016. However, as Major Utilities and their affiliates still have dominated the market, their existing basic retail tariffs of electricity have continued to be regulated to secure fair competition with other retailers. The regulation is expected to be lifted after 2020 at such time when the government views that a sound competitive market has been established.

**Legal Unbundling**

“Legal unbundling” occurred in April 2020 when new rules were introduced prohibiting an operator of General Electricity Transmission And Distribution Business except for Okinawa Electric Power Company, Inc from operating Electricity Gener-



ation Business (for the purpose of supplying electricity to retailers) or Retail Electricity Business (except for such business in certain isolated Japanese islands). Under this prohibition, General Electricity Transmission And Distribution Business operators are required to create a separate entity if they also want to conduct Electricity Generation Business or Retail Electricity Business within its group. This new rule aims to secure the impartiality of the Major Utilities as operators of transmission and distribution networks so that every electricity retailer and electricity generator may be given equal access to their networks under fair and equal conditions.

In order to achieve this goal, new regulations were also promulgated to prevent the transmission and distribution network operators from exercising influence on the operations of their affiliate retailers. See **5.1.3 Terms and Conditions Imposed in Approvals to Construct and Operate Transmission Facilities**.

## **New Electricity Markets and Offshore Wind Promotion**

In order to respond to new entrants' needs after this structural reform, the government has established several new electricity markets: the future market, the base-load market, the capacity market, the balancing market and the non-fossil fuel energy certificates trading market. In order to promote offshore wind electricity generation in Japan, the Japanese Diet passed the Act for the Promotion of Use of Marine Areas for Development of Marine Renewable Energy Generation Facilities (Act No 89 of 2018, as amended; note there is no English translation). See **2.1 Structure of the Wholesale Electricity Market** and **3.3 Principal Law and/or Policies to Encourage the Development of Alternative Energy Sources**.

## **1.7 Announcements Regarding New Policies**

In recent years Japan has suffered a number of natural disasters that damaged stable power supply. In 2018 the Hokkaido Iburi Eastern Earthquake caused the first large scale black out in Japan in living memory. In 2018 and 2019 large and powerful typhoons hit the main island of Japan and caused wide scale destruction of electricity distribution infrastructure. Faced with these situations, in early 2020 the government submitted a bill to the Diet to amend the Electricity Business Act which became law on 5 June 2020 ("Amendment"). Except for certain limited matters, the Amendment will come into force on 1 April 2022.

### **Changes to the Electricity Business Act**

The Amendment introduces three main changes to the Electricity Business Act:

- enhancement of co-operation amongst electricity companies in the case of emergencies;
- strengthening of the power grid network; and
- establishing a resilient power distribution system.

More specifically, General Electricity Transmission And Distribution Business license holders will be required to both prepare cooperation plans and establish reserves to cover the costs of dealing with emergencies. OCCTO will be required to prepare power grid network development plans taking into consideration the potential generation capacity of electricity generation sites as well as mid-and-long term network formation (so-called "push-type network formation"). In addition, all transmission and distribution business licence holders will be required to replace their facilities in a planned and structured way and transmission and distribution tariff regulations will be changed from full cost base to revenue cap base.

Further, two types of electricity business will be newly regulated: electricity distribution business and electricity aggregation business.

### **Changes to the FiT Act**

The Amendment also amends the Act on Special Measures Concerning Procurement of Electricity from Renewable Energy Sources by Electricity Utilities. In order to harmonise the renewable energy market with the conventional energy market, the Amendment introduces a feed-in premium regime to complement the existing feed-in tariff regime.

## **1.8 Unique Aspects of the Power Industry**

As the vertically integrated Major Utilities enjoyed a regional monopoly for nearly 50 years, the reality is that the Major Utilities (and their affiliates) continue to possess the dominant share of the retail market in their region.

Consequently, from the beginning of the liberalisation of the retail sector, the question of how to secure an environment where new entrant electricity retailers can compete with Major Utility retailers has been an important issue. Among the unique aspects of Japan's power industry is that while the government continues to establish regulations to address that issue, it also requires the Major Utilities to voluntarily develop solutions to support new entrant retailers. One example of these solutions is that Major Utilities voluntarily commit themselves to supplying their surplus electricity to JEPX at marginal cost.

Other unique characteristics of Japan's power industry include the following (i) the transmission sector and the distribution sector are not distinguished for regulatory purposes under the Electricity Business Act and they are instead covered by a single licence (except for Electricity Transmission Business as defined in **1.1 Principal Laws Governing the Structure and Ownership of the Power Industry**) (this will change on 1 April 2022 as the Amendment creates a new licence for the distribution business from that date), and (ii) there is no interconnection with other countries, which means that the demand of electricity

has to be satisfied by electricity generated by power generation facilities in Japan.

### 1.9 The Impact of COVID-19

According to analysis conducted by OCCTO, electricity demand in Japan declined approximately by 1.7% in February and 0.6% in March 2020, compared to the same months in 2019, partially due to COVID-19. The simultaneous worldwide plunge in prices for fossil fuels has likely caused a drop in the electricity price.

On 7 April 2020, soon after Japan declared a nationwide state of emergency, METI requested all electricity business operators to grant a moratorium on electricity bills to those facing difficulties in payment. This was followed by METI requesting on 8 April 2020 for electricity business operators and OCCTO to maintain a stable supply of electricity.

In order to prevent the spread of COVID-19, the obligation to conduct periodic inspections of electrical facilities required under the Electricity Business Act has been temporarily relaxed.

## 2. Market Structure, Supply and Pricing

### 2.1 Structure of the Wholesale Electricity Market

In Japan, an electricity retailer procures electricity by entering into a power purchase agreement with an electricity generator or through the electricity wholesale markets. JEPX is a main electricity wholesale market in Japan. Trades available in JEPX as wholesale of electricity are:

- spot market trading;
- forward market trading;
- intraday market trading; and
- OTC trading.

#### Market Trading in JEPX

Spot market trading is trading of electricity supplied on the next day after a trade date, where the minimum trading unit is 30 minutes and 0.5 MW, and the trading price is determined through a “blind and single price auction”. Under this auction, wholesale market participants submit a bid for purchasing or selling electricity and the trading price is fixed at the crossing point of all purchasing bids and selling bids.

Forward market trading is trading of electricity supplied for a certain period starting on a day that is two or more days from the trade date, where traded time periods are one week, one month and one year, and orders are continuously executed in strict price and time priority (an order entered into the system

at an earlier time must be executed in full before an order at the same price entered at a later time is executed).

Intraday market trading is trading of electricity supplied on a day for which spot trading is closed, where the minimum trading unit is 30 minutes and 0.5 MW, and orders are continuously executed in strict price and time priority.

OTC trading is usually employed for trading a small amount of electricity that does not satisfy the thresholds for spot or intraday trading.

#### New Electricity Markets

In addition to the above, as of the time of writing, several new electricity markets have opened or will soon open with the aim of meeting the needs of new entrants after full liberalisation of the retail sector. The base-load market began in July 2019, which is a wholesale market of electricity generated by a nuclear power plant, a traditional large-scale hydro power plant, a coal-fired power plant or a geothermal power plant (also known as “base-load electricity”) to electricity retailers. Major Utilities and J-Power are required to offer base-load electricity to the base-load market by no less than a certain amount calculated by a prescribed formula to secure retailers’ access to base-load electricity for no more than a certain price which is not to be unduly higher than their intra-group price.

The capacity market is scheduled to hold its first auction in July 2020. While electricity companies trade in kWh in the wholesale JEPX market, the capacity market auctions the future value of generation capacity in kW four years after the auction. The capacity market is expected to provide predictability to recover fixed costs in the generation business.

In September 2019, a futures market was commenced by Tokyo Commodity Exchange, Inc (TOCOM) which allows buyers to hedge the volatility risk of the JEPX spot market trading price. TOCOM initially operates this futures market for a three-year trial period. In 2021, a balancing market (also referred to as a real time market) will start to operate. Through this market, General Electricity Transmission And Distribution Business licence holders will be able to procure control reserves by auction in order to economically and efficiently make supply-demand adjustments and maintain frequency control in their region.

In general, there are no price regulations on wholesale electricity prices. However, in order to secure competition on an equal footing between Major Utility retailers and other retailers, wholesale trading of electricity by Major Utilities is monitored so that the price will not be unduly expensive.



## 2.2 Imports and Exports of Electricity

At the time of writing, Japan has no international interconnection. There is no legal restriction against imports and exports of electricity although in practice this does not occur.

## 2.3 Supply Mix for the Entire Market

According to ANRE, the supply mix of electricity in 2017 was as follows:

- natural gas 39.5%;
- coal 32.7%;
- oil 8.7%;
- nuclear 3.1%;
- hydro 7.9%;
- solar 5.2%;
- wind 0.6%;
- biomass 2.1%; and
- geothermal 0.2%.

Japan's target for the supply mix in 2030 is natural gas 27%, oil 3%, coal 26%, nuclear 20-22%, hydro 8.8%-9.2%, solar 7.0%, wind 1.7%, biomass 3.7%-4.6% and geothermal 1.0-1.1%.

## 2.4 Principal Laws Governing Market Concentration Limits

There are no concentration limits in Japan.

## 2.5 Agency Conducting Surveillance to Detect Anti-competitive Behaviour

EGC was established on 1 September 2015, six months before the retail sector of electricity and gas was fully liberalised on 1 April 2016. Among EGC's missions is to ensure the impartiality, fairness and soundness of trades of electricity and gas, and to promote competition in the market.

Under the Electricity Business Act, EGC has responsibility for market surveillance to secure the soundness and fairness of the electricity market. If any anti-competitive behaviour by an electricity business operator is detected, EGC may give a warning to such electricity business operator to improve its business, and advise the Minister of METI to issue an order to such electricity business operator to improve its business.

In addition, under the Act on Prohibition of Private Monopolisation and Maintenance of Fair Trade, JFTC oversees the power industry. If any anti-competitive behaviour is detected, JFTC has the power to issue an order to any person engaging in anti-competitive practices to take specific actions to eradicate such practice.

## 3. Climate Change Laws and Alternative Energy

### 3.1 Principal Climate Change Laws and/or Policies

The Act on Promotion of Global Warming Countermeasures (Act No 117 of 1998, as amended; note the URL shows the Act as of 2008) requires all business operators to endeavour to take actions to reduce greenhouse gas emissions.

As a signatory to the Kyoto Protocol, Japan achieved its commitment to reduce its greenhouse gas emissions by 6% below 1990 levels in the first commitment period (2008-12) within the framework under the Kyoto Protocol. While Japan did not participate in the second commitment period (2013-20), Japan did sign the Paris Agreement.

Japan submitted its Nationally Determined Contributions in accordance with the Paris Agreement under which Japan will target a 26% reduction in its greenhouse gas emissions below 2013 levels by 2030. The Japanese government has subsequently adopted a Plan of Global Warming Countermeasures in 2016 that refers to the same target. The Plan also states that Japan will target an 80% reduction in its greenhouse gas emissions below 2013 levels by 2050.

### 3.2 Principal Laws and/or Policies Relating to the Early Retirement of Carbon-Based Generation

In Japan, thermal power plants, including coal-fired generators, are still considered an important source of energy and are classified as a "base-load" electricity source, as shown in the 2030 energy mix target (see **2.3 Supply Mix for the Entire Market**). However, in order to reduce the amount of carbon dioxide emissions, the power industry in Japan strives to develop and introduce high-efficiency and low carbon coal-fired power plants under the Act on Rationalising Energy Use (Act No 49 of 1979, as amended).

As an action taken by the government to facilitate the retirement of aged coal-fired power plants, the government issued a guideline in 2012 under which a simpler and less time-consuming environmental impact assessment procedure will be available to new coal-fired power plant operators if it is confirmed that the new coal-fired power plant will reduce carbon dioxide emissions compared to the old plant.

### 3.3 Principal Law and/or Policies to Encourage the Development of Alternative Energy Sources

The Act on the Promotion of Use of Non-fossil Energy Sources and Effective Use of Fossil Energy Materials by Energy Suppliers (Act No 72 of 2009, as amended, the "Promotion Act"; note there is currently no English translation) was promulgated in

recognition of the importance of developing non-fossil energy sources.

Pursuant to the Promotion Act, the government published a basic policy outlining its goals for non-fossil fuel development. Under the policy, the government targets increasing the share of non-fossil energy sources to 44% by 2030, and electricity suppliers of 500,000 MWh or more are required to prepare and submit an implementation plan to achieve such target and a progress report every year.

### **The FiT Regime**

In furtherance of achieving this target, the Act on Special Measures Concerning Procurement of Electricity from Renewable Energy Sources by Electricity Utilities (Act No 108 of 2011, as amended, the “FiT Act”; note the URL shows the Act as of October 2016) was promulgated in 2011, and a corresponding feed-in tariff regime (“FiT Regime”) was introduced in 2012. The FiT Act encourages the development of alternative energy sources by offering a very generous feed-in tariff to developers.

Under the FiT Act, renewable energy that meets the statutory and regulatory requirements is sold at a fixed price for a specified number of years (20 years in many cases) to transmission and distribution network operators, and transmission and distribution network operators are not allowed to refuse to purchase such renewable energy, with very limited exceptions.

The renewable energy that can benefit from the FiT Regime is electricity generated by solar, wind, hydro, geothermal or biomass methods.

In order to promote investment in renewable energy, the feed-in tariff – ie, the price of renewable energy – is set at a rate generally higher than the market rate and any additional cost incurred by transmission and distribution network operators in relation to the purchase of the renewable energy is transferred to and assumed by consumers through a surcharge imposed on consumers. Electricity retailers are required to transfer funds collected from their customers as a surcharge to the Green Investment Promotion Organisation (GIO), and GIO pools these funds received from electricity retailers. GIO then distributes those pooled funds to the purchasers of energy sold in the FiT regime so that additional costs incurred by those purchasers will be compensated.

### **The FiP Regime**

In order to improve the FiP regime and harmonise it with the conventional energy market, the Amendment introduces with effect from 1 April 2022 feed-in premium regime (“FiP Regime”). The FiP Regime will grant to renewable energy generators the balance obtained from subtracting the reference

market rate price of supplied electricity from a fixed rate (which will generally be set at higher than the market rate), assuming that the generators will sell their electricity to the market. Under the FiP Regime, renewable energy generators will need to consider the volatility risks of the market price to a certain extent.

### **The Non-Fossil Fuel Energy Certificate Trading Market**

As an additional measure to achieve the non-fossil energy source target, another new market was established in May 2018: the non-fossil fuel energy certificates trading market. In this market, each non-fossil fuel energy certificate represents an amount of non-fossil fuel energy as specified under the Promotion Act and has a corresponding CO2 emissions reduction value under the Act on Promotion of Global Warming Countermeasures. Against the background that retail electricity suppliers are obligated under the Promotion Act to target 44% or more of their electricity supply coming from non-fossil fuel energy by 2030, the non-fossil fuel energy certificates and this market are expected to encourage retail electricity suppliers to achieve that target. In addition, as retail electricity suppliers may deduct the amount of CO2 represented by the certificates from their CO2 emissions, they can promote themselves as a CO2 neutral supplier by purchasing the certificates.

From a consumer’s perspective, those who purchase electricity from such CO2 neutral supplier may claim that they purchase CO2 neutral electricity for the purposes of the Act on Promotion of Global Warming Countermeasures. At the same time, from a non-fossil fuel power producer’s perspective, they may earn additional income by selling the certificate. This new market is expected to incentivise the development of non-fossil energy sources.

### **Further Promotions**

To further promote the development of renewable energy, under the Network Codes curtailment rule, renewable energy power plants are prioritised over fossil fuel power plants in that renewable energy power plants are curtailed only after fossil fuel power plants have reached their curtailment limit. Also, the government has introduced a reduced rate of property tax for certain qualified renewable energy facilities during the first three years of the operation of this curtailment rule.

## **4. Generation**

### **4.1 Principal Laws Governing the Construction and Operation of Generation Facilities**

The principal laws governing the construction and operation of electricity generation are:

- Electricity Business Act;

- Environmental Impact Assessment Act (Act No 81 of 1997, as amended);
- Act on Rationalising Energy Use; and
- Act on the Regulation of Nuclear Source Material, Nuclear Fuel Material and Reactors.

## 4.2 Regulatory Process for Obtaining All Approvals to Construct and Operate Generation Facilities

### Electricity Business Act

Unless the electricity capacity is below 10 MW, any person who intends to generate electricity for sale must first submit to OCCTO an application for OCCTO membership. Next, under the Electricity Business Act, that person must submit to METI a notification form containing certain prescribed information such as the location of the generation facility and its power source.

Operators are also generally required to file a construction plan of the generation facility with METI no less than 30 days prior to commencing construction if the intended electricity production capacity of the facility is over a prescribed level.

The generation facility must also pass a pre-use inspection conducted by METI before it starts commercial operation.

### Environmental Impact Assessment Act

The operator must perform an environmental impact assessment in accordance with the Environmental Impact Assessment Act whenever the operator intends to construct a generation facility that falls within a prescribed category. Preparation of the environmental impact statement requires the following steps. (Some regional governments also have their own additional environmental impact assessment process for the construction of certain prescribed generation facilities.)

#### Consideration statement

The operator prepares a statement on the environmental impact that the operator expects the construction to have and submits it to METI for review. The operator is expected (but not obliged) to publish it to seek feedback from the public.

#### Scoping statement

Based on the consideration statement as revised to reflect METI's comments and public feedback (if any), the operator prepares a statement defining the scope and methodology of the environmental impact assessment that the operator proposes to implement, submits it to METI and the relevant local government for review and publishes it to seek feedback from the public.

#### Environmental impact assessment

Based on the scoping statement as revised to reflect the comments of METI, the relevant local government and public feedback (if any), the operator performs the environmental impact assessment.

#### Draft environmental impact statement

Based on the completed environmental impact assessment, the operator prepares a draft of the environmental impact statement, submits it to METI and the relevant local government for review and publishes it to seek feedback from the public.

#### Environmental impact statement

Taking into account the comments from METI, the relevant local government and public feedback (if any), the operator prepares an environmental impact statement, submits it to METI for review and, based on METI's feedback (if any), finalises the environmental impact statement, submits it to the relevant local government and publishes it. METI has authority to issue an order to further revise the environmental impact statement if it thinks revision is necessary to ensure due consideration of environmental impact.

### Act on Rationalising Energy Use

With respect to the construction of thermal power plants with a fossil fuel energy source, the Act on Rationalising Energy Use requires the operator to endeavour to ensure that the thermal power plant satisfies the standards of power generation efficiency stated in this Act and its related regulations.

### Act on the Regulation of Nuclear Source Material, Nuclear Fuel Material and Reactors

Under the Act on the Regulation of Nuclear Source Material, Nuclear Fuel Material and Reactors, the operator may not install a nuclear reactor without obtaining permission from NRA and approval of the nuclear reactor construction plan from NRA. Further approval from METI for the construction plan of a nuclear reactor is required under the Electricity Business Act.

### Other

Additional national or local permits may be required to construct or operate an electricity generation facility depending on its location.

## 4.3 Terms and Conditions Imposed in Approvals to Construct and Operate Generation Facilities

In addition to the requirements to obtain construction and operation approvals as summarised in 4.2 Regulatory Process for Obtaining All Approvals to Construct and Operate Generation Facilities, an operator of Electricity Generation Business is, in particular, obliged to do the following pursuant to the Electricity Business Act and its secondary regulations:

- supply electricity, as directed by the transmission and distribution network operators to balance the demand and supply of electricity within the network;
- join OCCTO;
- supply electricity in accordance with any orders that METI may issue in the case of an emergency (such orders have never been issued to date);
- prepare and submit a supply plan to OCCTO;
- submit its financial statements to METI;
- submit a report on its performance and operation results to METI; and
- comply with the Network Codes of OCCTO.

#### **4.4 Proponent's Eminent Domain, Condemnation or Expropriation Rights**

The Expropriation of Land Act (Act No 219 of 1951, as amended; note the URL shows the Act as of 2017) empowers an operator of electricity business under the Electricity Business Act to expropriate a piece of land for its business in exchange for paying just compensation to the land right-holder, following the procedures set out in the Electricity Business Act.

In order to expropriate land, the operator must first obtain approval from the Ministry of Land, Infrastructure, Transport and Tourism (MLIT) and/or the relevant local government, as the case may be, on any undertaking that necessitates expropriation. After obtaining such approval, the operator files for expropriation with the Expropriation Committee of MLIT, which will grant to the operator an award of expropriation unless the undertaking is found to be materially different or materially differently implemented than as explained to MLIT and/or the relevant local government.

#### **4.5 Requirements for Decommissioning**

If an operator of Electricity Generation Business intends to suspend or terminate the whole or a part of its generation business, it must submit a notification to METI in advance. In addition, if the operator decommissions a generation facility that has an installed capacity of 100 MW or more, such operator must also submit a notification in advance to OCCTO in accordance with the Network Codes.

With respect to a nuclear power plant, the operator must prepare a decommissioning plan and obtain approval from NRA for the plan under the Act on the Regulation of Nuclear Source Material, Nuclear Fuel Material and Reactors.

Further, in response to public concern about illegal abandonment of solar power plant facilities, under the Amendment operators will be required to establish a mandatory reserve to cover decommissioning costs.

## **5. Transmission**

### **5.1 Regulation of Construction and Operation of Transmission Lines and Associated Facilities**

#### **5.1.1 Principal Laws Governing the Construction and Operation of Transmission Facilities**

The Electricity Business Act governs the licensing arrangements for the construction and operation of transmission and distribution networks, as well as the procedures for the construction of such networks and associated facilities.

In general, METI controls the development of transmission and distribution networks by requiring General Electricity Transmission And Distribution Business operators and Electricity Transmission Business operators to submit a development plan of their major network assets (major transmission lines and transformer stations) for the forthcoming ten years. With respect to individual construction work, the operator is required to file a construction plan with METI no less than 30 days prior to commencement of the work if it involves the construction of a transmission line or transformer substation of 170 kV (in some cases, 100 kV) or more. Such transmission lines or transformer substations must pass a pre-use investigation conducted by METI.

#### **5.1.2 Regulatory Process for Obtaining Approvals to Construct and Operate Transmission Facilities**

Notwithstanding the general trend and significant government activity towards liberalisation of the electricity market since 1995, the transmission and distribution network sector has seen the least structural change and on an organisational level remains largely unaltered. The ten Major Utilities continue their regional monopolies in their respective service areas for this sector. As METI's position is to maintain these regional monopolies for the transmission and distribution sector, it is unlikely that METI would issue a new licence to conduct General Electricity Transmission And Distribution Business to any person.

There are, however, two exceptions to this monopoly (a further exception will be added on 1 April 2022 as the Amendment creates a new licence for the distribution business from that date).

#### **Electricity Transmission Business Licence Holders**

When the current licence regime was introduced, J-Power was the only Electricity Transmission Business license holder. At the time of writing, two more operators have obtained an Electricity Transmission Business license. They are expected to supplement the transmission services conducted by the operators of General Electricity Transmission And Distribution Business within the respective monopoly regions of those operators by construct-

ing transmission lines in areas that the existing transmission network does not cover and will not cover in the near future. To operate an Electricity Transmission Business requires the approval of METI so no person (other than an operator of a General Electricity Transmission And Distribution Business and an operator of a Specified Electricity Transmission And Distribution Business) may construct or operate a transmission line without approval from METI.

## Specified Electricity Transmission And Distribution Business Licence Holders

The transmission and distribution networks of Specified Electricity Transmission And Distribution Businesses have been constructed to serve consumers within a limited geographical area. As such, these networks are more akin to distribution networks than transmission networks in respect of length and capacity. As the impact that such networks may have on the transmission and distribution networks of General Electricity Transmission And Distribution Businesses is insignificant, Specified Electricity Transmission And Distribution Businesses can be conducted with notification to METI of the services to be provided such as geographical area of service, layout of transmission and distribution lines, and the specifications thereof.

### 5.1.3 Terms and Conditions Imposed in Approvals to Construct and Operate Transmission Facilities

An operator of General Electricity Transmission And Distribution Business is obliged to perform the following pursuant to the Electricity Business Act and its secondary regulations. These obligations became more stringent after the legal unbundling in 2020:

- accept access to its transmission and distribution networks located within its service area, and apply the terms and conditions (approved by METI) to all electricity business operators equally;
- provide last-resort services and electricity retail services in isolated islands within its service area;
- their directors cannot assume an office of its parent holding company or any of its affiliates that operate Retail Electricity Business or Electricity Generation Business (such parent holding company and affiliates being “interested parties”);
- not to trade with interested parties except where permitted under the secondary regulations;
- not to use proprietary information of electricity business operators or consumers for purposes other than its transmission and distribution business;
- not to engage in discriminatory treatment;
- install an appropriate information protection;
- endeavour to maintain the voltage and frequency of the electricity in its service area at the prescribed level;

- measure, record and maintain the voltage and frequency of the electricity in its service area;
- submit its financial statements to METI;
- submit its segmental financial statements regarding its transmission and distribution services to METI;
- submit to METI a report concerning the occurrence of any imbalance in its transmission and distribution network;
- join OCCTO;
- prepare and submit a supply plan to OCCTO; and
- comply with the Network Codes of OCCTO.

### 5.1.4 Proponent’s Eminent Domain, Condemnation or Expropriation Rights

See 4.4 Proponent’s Eminent Domain, Condemnation or Expropriation Rights.

### 5.1.5 Transmission Service Monopoly Rights

Each General Electricity Transmission And Distribution Business operator is assigned a regional service area and is granted de facto exclusivity within such service area by METI since METI does not grant two licences of General Electricity Transmission And Distribution Business in relation to any service area. Electricity Transmission Business licences and Specified Electricity Transmission And Distribution Business licences are exceptions to these monopoly arrangements as described in 5.1.2 Regulatory Process for Obtaining Approvals to Construct and Operate Transmission Facilities. (Further, one more exception will be added on 1 April 2022 as the Amendment creates a new licence for the distribution business from that date)

## 5.2 Regulation of Transmission Service, Charges and Terms of Service

### 5.2.1 Principal Laws Governing the Provision of Transmission Service, Regulation of Transmission Charges and Terms of Service

Pursuant to the Electricity Business Act, the terms and conditions of transmission and distribution services need to be approved by METI. The matters to be described in the terms and conditions and the methodology to compute service charges are set out in the regulations listed below. To date, no official English translation of these regulations has been issued.

- Executive rules of the Electricity Business Act (*denkijigyoho shikokisoku*).
- Rules on the methodology to compute tariffs for transmission and distribution services (*ippan sohaiden jigyo takusokyokyutoyakkan ryokin santei kisoku*).



- Rules on the methodology to balance income and loss from transmission and distribution services (*denkijigyo takusokyokyuto shushikeisan kisoku*).

### 5.2.2 Establishment of Transmission Charges and Terms of Service

Tariff rates and the terms and conditions of transmission and distribution services are first proposed by the General Electricity Transmission And Distribution Business operator and then fixed upon the approval of METI based on the advice of EGC. METI's standard review period is four months.

The terms and conditions of services are reviewed to see if the following requirements are satisfied:

- the tariff rate is the sum of the efficient cost of services a plus fair rate of a fair margin, with the assumption that the business is operated in an efficient manner;
- the terms and conditions do not significantly undermine accessibility to the transmission and distribution services;
- the method of computing the tariff is clearly and fairly stated;
- the allocation of responsibility as well as cost sharing between the General Electricity Transmission And Distribution Business operator and users of the transmission and distribution network are clearly and fairly stated;
- the terms and conditions do not discriminate against any specific person; and
- the terms and conditions do not hinder public interest.

At the time of writing, the tariff rate is computed based on the fully distributed cost method. Under this method the tariff is determined such that projected revenues of the tariff for the forthcoming three years will balance with the sum of (i) the efficient and necessary costs (including depreciation cost and capacity charges for balancing power supply) of providing services for the forthcoming three years and (ii) the capital costs of the forthcoming three years.

Under the Amendment, the method of determining the tariff rate will be changed to a "revenue-cap" method (the date of this change is yet to be determined but it is scheduled to take effect sometime FY 2023). After this change, METI and EGC will review only the total revenues of wheeling charges, instead of its breakdown. It is believed that this will incentivise General Electricity Transmission And Distribution Business operators to reduce costs for transmission and distribution services.

Further, while the tariff rate is currently only charged to the demand-side (ie, retailers), METI has decided that it will introduce a generation-side tariff in order to incentivise generators to select its power plant site in a location beneficial to effective power grid operation and formation. METI currently aims to introduce the generation-side tariff from FY 2023.

### 5.2.3 Open-Access Transmission Service

Pursuant to the Electricity Business Act, General Electricity Transmission And Distribution Business operators are obliged to provide access to their transmission and distribution network on a non-discriminatory basis.

## 6. Distribution

### 6.1 Regulation of Construction and Operation of Electricity Distribution Facilities

#### 6.1.1 Principal Laws Governing the Construction and Operation of Electricity Distribution Facilities

See 5.1.1 Principal Laws Governing the Construction and Operation of Transmission Facilities.

#### 6.1.2 Regulatory Process for Obtaining Approvals to Construct and Operate Distribution Facilities

See 5.1.2 Regulatory Process for Obtaining Approvals to Construct and Operate Transmission Facilities.

#### 6.1.3 Terms and Conditions Imposed in Approvals to Construct and Operate

See 5.1.3 Terms and Conditions Imposed in Approvals to Construct and Operate Transmission Facilities.

#### 6.1.4 Proponent's Eminent Domain, Condemnation or Expropriation Rights

See 4.4 Proponent's Eminent Domain, Condemnation or Expropriation Rights.

#### 6.1.5 Distribution Service Monopoly Rights

See 5.1.5 Transmission Service Monopoly Rights.



## **6.2 Regulation of Distribution Service, Charges and Terms of Service**

**6.2.1 Principal Laws Governing the Provision of Distribution Service, Regulation of Distribution Charges and Terms of Service**

See 5.2.1 **Principal Laws Governing the Provision of Transmission Service, Regulation of Transmission Charges and Terms of Service.**

**6.2.2 Establishment of Distribution Charges and Terms of Service**

See 5.2.2 **Establishment of Transmission Charges and Terms of Service.**

**Nagashima Ohno & Tsunematsu** is one of the foremost providers of international and commercial legal services based in Tokyo. The firm has over 460 lawyers, including over 35 experienced foreign attorneys from various jurisdictions. Its overseas network includes offices in New York, Singapore, Bangkok, Ho Chi Minh City, Hanoi and Shanghai, and collaborative relationships with prominent local law firms throughout Asia, Europe, North and South America and other regions. The firm regularly advises leading power utilities, trading companies

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