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Japan: Law and Practice

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Nagashima Ohno & Tsunematsu

JAPAN

Law and Practice

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Contents

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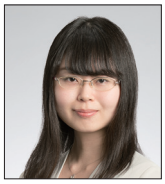

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NAGASHIMA OHNO & TSUNEMATSU

1. Structure and Ownership of the Power Industry

1.1 Law 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 the Second World War 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) the 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) the 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.

In the retail sector, a Power Producer and Supplier (PPS) licensing 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 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.

Further, the power industry has completed a series of structural reforms that began in 2013. These consist 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 Changes in Law or Regulation**).

Principal Laws

The Electricity Business Act (Act No 170 of 1964, as amended) is the principal law governing electricity business in Japan. Under this Act there are seven types of regulated business, as follows.

Electricity generation business (hatsuden jigyo)

This is the business to generate and sell electricity to retail sellers and transmission and distribution business operators.

Specified electricity wholesale business (tokutei oroshikyokyu jigyo)

This is the aggregation business of small power sources including residential rooftop solar, batteries, demand responses (ie, "DR" – reducing or shifting consumers' electricity usage during peak periods in response to time-based rates or other forms of financial incentives for balancing supply and demand). Specified Electricity Wholesale Business operators wholesale such aggregated power to Electricity Retail Business operators, etc (also referred to as Electricity Aggregation Business). From 1 April 2022, the Electricity Business Act newly regulates this business as it has much in common with Electricity Generation Business in that the aggregated power is also an important power source for the national power system.

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. General Electricity Transmission and Distribution Business Operators (ie, transmission system operator, "TSO") are also required to provide ancillary services such as supply-demand adjustment and frequency control in their region.

Electricity distribution business (haiden jigyo)

This is also a newly regulated business from 1 April 2022. It is the operation and maintenance of a certain portion of the electricity distribution network in the service area of a TSO. While General Electricity Transmission and Distribution Business covers electricity distribution business in Japan, the Electricity Business Act allows a TSO to transfer or lease a part of its facilities in its service area to an Electricity Distribution Business Operator (ie, distribution system operator, "DSO"). DSOs are also required to provide ancillary services in their area.

Electricity transmission business (soden jigyo)
This is the business to transmit electricity to a TSO through transmission lines that the Electricity Transmission Business operator operates and maintains on its own. Unlike a TSO and a DSO, an Electricity Transmission Business operator is not responsible for providing ancillary services as provided by TSOs and DSOs.

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 a certain limited geographical area.

Electricity retail business (kouri denki jigyo)
This is the business that sells 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 – this is a quasi-governmental institution having half of its capital funded by the government, 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 June 2023, there are more than 1,000 Electricity Generation Business licence holders.

The principal Electricity Generation Business operators are the major utilities or their wholly-owned subsidiaries and J-Power.

As of May 2023, there are 48 Specified Electricity Wholesale Business licence holders.

Transmission and Distribution

As of June 2023, there are ten TSOs, three Electricity Transmission Business licence holders and 38 Specified Electricity Transmission and Distribution Business licence holders. At the time of writing, were no DSOs.

The main transmission and/or distribution network operators are the major utilities or their wholly-owned subsidiaries as well as J-Power Transmission Network Co, Ltd.

Retail

Since 1995, Electricity Retail Business has been gradually liberalised. After full liberalisation of the retail electricity market in 2016, the number of Electricity Retail Business licences has grown significantly from 57 in August 2015 to 726 in June 2023. Although most of them are investor-owned companies, there are some retail electricity suppliers owned by municipal governments.

While major utilities or their wholly-owned subsidiaries in aggregate supply most of Japan's electricity, new entrants are expanding their market share in the retail sector. As of December 2022, the share by sales volume of the electricity supplied by the new entrants was approximately 18.7%.

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.

However, under the Foreign Exchange and Foreign Trade Act (Act No 228 of 1949, as amended), 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 prior 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 or complies with the exemption scheme.

If the foreign investor gives such notice, it may invest only after the required waiting period elapses, assuming the notification is not questioned or objected to by MOF and METI. The required waiting period is usually 30 days but it may be shortened or extended up to five months at the discretion of MOF and METI.

The exemption scheme is applicable to investments which result in the investor owning less than 10% of the shares in a listed company that operates in the core sectors and investments which result in the investor owning any shares in a listed or unlisted company that operates in the non-core sectors. With regard to power companies, "core sectors" means General Electricity Transmission and Distribution Business, Electricity Transmission Business and Electricity Generation Business owning a power plant with maximum capacity of 50,000 kW or more; "non-core sectors" are simply those that are not core sectors, as previously defined.

Further, under the Foreign Exchange and Foreign Trade Act, a foreign investor is also required to give prior written notice through BOJ to MOF and METI if it proposes and consents to transfer the company's business or dissolve the company's business, or consents to appoint itself or a closely related person as a director or other material officers required to be appointed at a shareholders' meeting.

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 Law 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 an Electricity Generation Business, Specified Electricity Wholesale Business, Specified Electricity Transmission and Distribution Business or Electricity Retail Business may implement a business transfer at its own discretion. However, an operator of a General Electricity Transmission and Distribution Business, an Electricity Distribution Business or an 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 a General Electricity Transmission and Distribution Business, an Electricity Distribution Business or an 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) 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), if a merger, amalgamation, company split or transfer of business substantially restrains competition in a particular field of trade, the Japan Fair Trade Commission (JFTC) may issue an order forbidding such actions or to change the terms of such actions.

1.5 Central Planning Authorities

METI and ANRE

The ministry responsible for energy policy is METI. 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 recent reforms 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.

While OCCTO has been expanding its mission since its establishment (eg, monitoring the demand and supply of electricity at the country level, operating the capacity market, providing access to the power grid network, managing the FIT surcharge), 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), 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.

EGC

The Electricity and Gas Market Surveillance Commission (EGC) was established on 1 September 2015. 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 Changes in Law or Regulation

As described in **1.1 Law 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.

In 2020, the electricity industry completed a series of structural reforms that began in 2013. These 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 Authorities**, OCCTO and EGC were established in 2015. Subsequently, the retail sector was fully liberalised in 2016. However, as major utilities and their affiliates have still 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 at such time when the government considers that a sound competitive market has been established.

Legal Unbundling

"Legal unbundling" occurred in April 2020 when new rules were introduced prohibiting a TSO – except for Okinawa Electric Power Company, Inc – from operating an Electricity Generation Business (for the purpose of supplying electricity to retailers) or Electricity Retail Business (except for such business in certain isolated Japanese islands).

Under this prohibition, TSOs are required to create a separate entity if they also want to conduct Electricity Generation Business or Electricity Retail Business within its group. Further, TSOs are prohibited from using information on electricity generators and customers for purposes other than their transmission and distribution business and are obliged to establish an information management system. 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 **5.3 Terms and Conditions**

Imposed in Approvals for the Construction and Operation of a Transmission Line and Associated Facilities.

In 2023 it was discovered that some of the TSOs had allowed their affiliate retailers access to information obtained in their transmission and distribution business, including information on new entrant retailers' customers.

METI took these information leaks seriously, as they have a significant adverse impact on the purport of the legal unbundling rules, and issued business improvement orders or warnings against some of the major utilities and their subsidiaries. Discussions are now taking place in METI on whether to implement additional measures such as more rigorous information management requirements to ensure fair competition in the Electricity Retail Business.

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 futures 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). See **3.3 Programmes for the Development of Alternative Energy Sources**.

The government announced the results of the public bidding for the first batch (consisting of three sea areas) of offshore wind electricity generation concessions under the Act for the Promotion of Use of Marine Areas for Development of Marine Renewable Energy Generation Facilities, and a consortium represented by the same company won all the three sea areas because of its significantly low tender price. The public bidding for the second batch (consisting of four sea areas) is currently underway in which a single bidder may win the rights to generate a maximum of 1 GW of power. The public offering for the second batch is being conducted with revised rules in order to provide more operators with opportunities to enter the wind electricity generation market.

1.7 Announcements Regarding New Policies

Changes to the Electricity Business Act in 2022

In recent years, Japan has suffered a number of natural disasters that damaged stable power supply. In 2018, the Hokkaido Eastern Iburi earthquake caused the first large-scale blackout 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, on 5 June 2020, the Diet passed a bill to amend the Electricity Business Act (the "2022 Amendment"). Except for certain limited matters, the 2022 Amendment came into force on 1 April 2022. The 2022 Amendment introduces substantial changes to the Electricity Business Act in order to:

- enhance co-operation amongst electricity companies in the case of emergencies;
- strengthen the power grid network; and

- establish a resilient power distribution system.

More specifically, under the new regulations, TSOs are required to both create co-operation plans and establish reserves to cover the costs of dealing with emergencies. OCCTO is given a mission to create and revise power grid network development plans, taking into consideration the potential generation capacity of electricity generation sites as well as mid-term and long-term cross-regional network formation (ie, "push-type network formation"). All transmission and distribution business licence holders are required to replace their facilities in a planned and structured way. In addition, transmission and distribution tariffs are to be set on a revenue cap basis from 1 April 2023 (see **5.6 Transmission Charges and Terms of Service**).

Further, as described in **1.1 Law Governing the Structure and Ownership of the Power Industry**, the 2022 Amendment newly regulates two types of electricity business: Specified Electricity Wholesale Business and Electricity Distribution Business.

Changes to the FiT Act

The 2022 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 2022 Amendment introduces a feed-in premium regime to complement the existing feed-in tariff regime.

Severely tight supply-demand balance and sharp price spike

In December 2020 and January 2021, Japan experienced a severely tight balance between the supply and demand of electricity. This caused an historic price spike in the JEPX spot market (the new record of JPY251.0/kWh was set on 15 January 2021, the highest price since JEPX foundation) and also triggered a high imbalance fee. This, in turn, caused a financial crisis for a number of retailers and some have commenced bankruptcy procedures.

According to a government assessment, the main reasons for this serious situation were a significant increase in the demand for electricity due to extraordinarily cold weather, and the curtailment of electricity production arising from an LNG shortage, as well as the growing dependence on LNG power plants due to the recent abandonment of many oil power plants, the suspension of nuclear power plants, and the expansion of photovoltaic and wind power, which have fluctuating supply.

Since fiscal 2021, as with the worldwide energy situation, economic recovery from the COVID-19 pandemic, a decrease in upstream investment due to decarbonisation, extreme weather conditions, the Russian invasion of Ukraine and other factors have led to extreme supply and demand pressures and increased fuel and electricity prices. In March 2022, the government for the first time issued a warning to people in the Tokyo area with regard to electricity supply and demand pressures.

Learning from these lessons, the government has published guidelines for electricity generators in order to demonstrate good practice in fuel procurement and promoted hedging trades in markets such as the forward market, futures market and base-load market (see **2.1 The Wholesale Electricity Market**), and prepared risk management guidelines to explain and demonstrate basic risk assessment methodology and

good practice for risk management in the electricity field.

Also, the government has created a framework for the relevant parties (ie, electricity companies, OCCTO and the government) to deal with the tight supply and demand balance such as emergency power and fuel accommodation and an urgent call to increase power generation.

Furthermore, on 13 May 2022, the Diet passed a bill to amend the Electricity Business Act (the "2023 Amendment") which changed the ex-post filling obligation for the abolishment of certain generation facilities to a prior filling obligation so that the government can secure sufficient time to deal with electricity supply shortages. The 2023 Amendment came into force on 1 April 2023.

In response to a number of Electricity Retail Business operators withdrawing from Electricity Retail Business due to market price spikes in electricity, the government is also tightening the regulations affecting Electricity Retail Businesses in order to protect consumers.

Carbon-neutral target in 2050 and raising the 2030 GHG emissions reduction target

In response to the increased global interest in sustainability and the potential for economic growth, the Japanese Prime Minister declared in October 2020 that Japan would aim for net-zero greenhouse gas (GHG) emissions and seek to become a carbon-neutral society by 2050. Moreover, the Japanese Prime Minister declared at the virtual climate summit held in April 2021 that Japan aims to reduce GHG emissions by 46% from 2013 levels, which is a sharp increase from the previous target of 26%.

In order to achieve these goals, the government is discussing a variety of measures including promotion of renewable energy power plants as well as investment and innovation in the power industry. As a part of these measures, on 26 May 2021 the Japanese Diet passed a bill to amend the Act on Promotion of Global Warming Countermeasures, which includes a guiding principle of achieving carbon neutrality in 2050. The amendment became law on 1 April 2022.

The 2023 Amendment also includes decarbonisation programmes such as new regulation of storage batteries and the promotion of non-fossil fuels (see 3.2 **Principal Laws and/or Policies Relating to the Early Retirement of Carbon-Based Generation** and **3.3 Programmes for the Development of Alternative Energy Sources**).

In addition, the government has developed a roadmap that outlines investment promotion measures to be taken by the government to achieve the Green Transformation (GX), and the Act on Promotion of Smooth Transition to Decarbonised Growth Economy (the "GX Act") was passed on 12 May 2023 to realise some of these measures. The GX Act provides as follows.

- The government can issue GX Bonds (scheduled to total approximately JPY20 trillion) from 2023 to 2032 to secure financial resources to invest in business and in research relating to increasing industrial competitiveness and reducing GHG emissions. These GX Bonds are to be redeemed by 2050 from the "Surcharge for Fossil Fuels" and the "Surcharge for Specific Operators" (each as defined below).
- The following two systems will be introduced in phases in preparation for a full-scale implementation of an emissions trading system:
  (a) the Surcharge for Fossil Fuels is to be imposed from 2028 on those who mine or import fossil fuels according to the

amount of GHG emissions generated from the fossil fuels they mine or import which will be calculated based on the volume of fossil fuels they mine or import; and

(b) GHG emission allowances will be allocated from 2033 to electricity generators with higher GHG emissions (the "Specific Operators") partly for free and partly by auctions (charges incurred by Specific Operators to acquire such emission allowances by auctions are called the "Surcharge for Specific Operators"), and the percentage of emission allowances allocated by auction is scheduled to gradually increase.

A major part of the GX Act is scheduled to be enacted by August 2023, but the detailed design of the emissions trading system, including the system of the Surcharge for Fossil Fuels and the Surcharge for Specific Operators will continue to be a subject of consideration, and further supporting laws and regulations are scheduled to be introduced within two years of the enactment of the GX Act.

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 these 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 will be put on an equal footing 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 strongly encourages 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 and to perform wholesale transactions without discriminating between their group companies and others.

Other unique characteristics of Japan's power industry include the following:

- there is no interconnection with other countries, which means that the electricity demand must be satisfied by electricity generated by power generation facilities in Japan; and
- there are two types of electric frequency in Japan (50 Hz in Eastern Japan and 60 Hz in Western Japan) and thus a frequency conversion facility is necessary to transmit electricity between Eastern and Western Japan.

2. Market Structure, Supply and Pricing

2.1 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 the 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 50 kWh 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 the trading of electricity supplied for a certain period starting on a day that is three 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 50 kWh, 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 intra-day trading.

New Electricity Markets

In addition to the above, several new electricity markets have opened 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 held 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. The capacity market is expected to improve power producers' predictability to recover certain fixed costs in the generation business in which such fixed costs have been difficult to recover from the wholesale JEPX Market (ie, "stranded costs"). If a generator places the successful bid at a capacity market auction it may receive a certain amount of fixed income from OCCTO for four years after the auction, which is funded by a capacity surcharge that OCCTO levies from retailers.

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. The European Energy Exchange (EEX) and New York Mercantile Exchange (NYMEX) also launched a Japanese futures market in May 2020 and February 2021, respectively.

In 2021, the Transmission and Distribution Grid Council (TDGC) commenced operating a balancing market (also referred to as a real-time market), which is comprised of TSOs. This market enables TSOs to procure control reserves by auction, which will help them make supply-demand adjustments and maintain frequency control in their region in a more economically efficient manner. This also allows generators and

demand response aggregators to make profits by making use of their balancing functions.

In general, there are no price regulations on wholesale electricity prices. However, METI has placed a ceiling on the imbalance fee, which in effect functions as a price cap on the JEPX market price. Moreover, 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 manipulated or unduly expensive.

2.2 Electricity Imports and Exports

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 of Electricity

According to ANRE, the supply mix of electricity in 2019 was as follows:

- natural gas 37.1%;
- coal 31.9%;
- oil 6.6%;
- nuclear 6.2%;
- hydro 8%;
- solar 6.7%;
- wind 0.7%;
- biomass 2.6%; and
- geothermal 0.3%.

As of the time of writing, Japan's target for the supply mix in 2030 is:

- natural gas 20%;
- oil 2%;
- coal 19%;
- nuclear 20–22%;
- hydro 11%;
- solar 14%–16%;
- wind 5%;
- biomass 5%; and
- geothermal 1.0%.

2.4 Law Governing Market Concentration Limits

There are no concentration limits in Japan.

2.5 Surveillance to Detect Anti-competitive Behaviour

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, the EGC may give a warning to such an operator and advise the Minister of Economy, Trade and Industry to issue an order to such an 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.

On 30 March 2023, JFTC issued Cease and Desist Orders and Administrative Monetary Penalty Payment Orders to some major utilities due to cartel behaviour (some of these orders are contested at the time of writing). JFTC determined that these major utilities agreed with each other in the fall of 2018 at the latest to restrict sales to consumers located in areas where the other had previously monopolised the power supply before the liberalisation of the electricity retail market. The total amount of the Administrative Monetary Penalty Payment Orders exceeds JPY100 billion, the highest amount ever

ordered by the JFTC. EGC is also considering taking action against such cartel agreements.

3. Climate Change Laws and Alternative Energy

3.1 Climate Change Law and Policy

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

Pursuant to the Act, the Japanese government initially adopted a Plan of Global Warming Countermeasures in 2016 under which Japan was to target a 26% reduction in its GHG emissions below 2013 levels by 2030 and an 80% reduction by 2050. On 31 March 2020, Japan subsequently submitted its Nationally Determined Contributions (NDC) in accordance with the Paris Agreement that refers to the same target for 2030. However, as described in **1.7 Announcements Regarding New Policies**, pursuant to the Japanese Prime Minister's declaration, the Japanese government now aims for a 46% reduction by 2030 and net-zero emissions by 2050.

The Japanese Diet also passed a bill to amend the Act on Promotion of Global Warming Countermeasures. The amended Act states that achievement of a carbon-neutral society by 2050 is a fundamental principle and obliges Japanese prefectures and large cities to set the carbon reduction targets to promote renewable energy.

3.2 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 of Electricity**). However, in order to reduce the amount of carbon dioxide emissions, the power industry in Japan is striving 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) (the "Rationalisation Act"). The Act obliges energy users above a prescribed amount of energy (1,500kl per annum, with non-crude-oil energy sources converted into a crude oil amount in accordance with the prescribed formula) to report on their energy use, and thereby seeks to promote the efficient use of energy.

As an action taken by the government to facilitate the retirement of aged coal-fired power plants, METI has also introduced measures to reduce potential income from the capacity market and imposed an obligation on certain coal power plant operators to prepare fade-out plans for their inefficient coal power plants to cease power production by 2030.

Further, the 2023 Amendment amended the name of the Act on Rationalising Energy Use to the "Act on Rationalising Energy Use and Conversion to Non-fossil Fuel Energy" and encourages energy users to use non-fossil fuel energy. The regulations under this Act previously only covered fossil fuel energy use, however, the 2023 Amendment has also made non-fossil fuel energy use subject to the regulations and imposed an obligation on certain energy users to report on their energy use (both fossil fuel energy use and non-fossil fuel energy use) and to prepare plans for conversion to non-fossil fuel energy.

However, after the severely tight balance of supply and demand of electricity since winter 2020, how to satisfy both a stable supply of electric-

ity and the retirement of inefficient coal power plants has become an issue (see **1.7 Announcements Regarding New Policies**).

3.3 Programmes for 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") 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 aims to increase the share of non-fossil energy sources to 44% by 2030. Electricity suppliers of 500,000 MWh or more are required to prepare and submit an implementation plan to achieve such a target and provide a progress report every year.

The 2023 Amendment also amended the name of the Act on the Promotion of Use of Non-fossil Fuel Energy Sources and Effective Use of Fossil Fuel Energy Materials by Energy Suppliers to the "Act on the Promotion of Use of Energy Sources Complying with Environmental Suitability and Effective Use of Fossil Fuel Energy Materials by Energy Suppliers" and encourages thermal power plant operators to use decarbonised fuels such as hydrogen and ammonia and to install carbon dioxide capture and storage systems (CCS) in their thermal power plants.

The FiT Regime

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"), promulgated in 2011, introduced a feed-in tariff regime ("FiT Regime"). The FiT Act encouraged the development of alternative energy sources by offering a very generous feed-in tariff to renewable energy generators.

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. Moreover, under the FiT Regime, renewable energy generators do not have an obligation to supply energy (it is a right of renewable energy generators to supply energy) and are exempted from imbalance risks.

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 charging a FiT surcharge to consumers. Electricity retailers are required to transfer funds collected as surcharge to OCCTO and OCCTO pools these funds. OCCTO 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 FiT regime and harmonise it with the conventional energy market, the

2022 Amendment amended the name of the FiT Act to the Act on Special Measures Concerning Promotion of Usage of Electricity from Renewable Energy Sources and introduced the feed-in premium regime (the "FiP Regime") from 1 April 2022. The FiP Regime grants 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 manage the volatility risks of the market price and the off-taker's credit risks of the energy they generate to a certain extent. Moreover, under the FiP Regime, as with conventional power plants operators, renewable energy generators will need to manage their imbalance risks.

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 (NFC) represents an amount of non-fossil fuel energy and has a corresponding CO_2 emissions reduction value under the Act on Promotion of Global Warming Countermeasures. At the time of writing, the NFCs are traded in two markets: the Market for the Achievement of the Targets of the Promotion Act and the Market for the Trading of Renewable Energy Values.

The Market for the Achievement of the Targets of the Promotion Act deals with the NFCs outside the FiT regime ("Non-FiT NFCs") and the purchasers are basically limited to retail electricity suppliers. 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-FiT NFCs and this market are expected to encourage retail electricity suppliers to achieve that target. In addition, they can promote themselves as a CO_2-neutral supplier by purchasing the Non-FiT NFCs. From a consumer's perspective, those who purchase electricity from such CO_2-neutral supplier may claim that they purchase CO_2-neutral electricity for the purposes of the Act on Promotion of Global Warming Countermeasures. Also, under growing global initiatives such as the Carbon Disclosure Project (CDP), Science Based Target (SBT) and RE100, those who purchase electricity from a supplier with a Non-FiT NFC derived from renewable energy may claim that they purchased renewable energy sourced electricity. From a power producer's perspective, they may earn additional income by selling the Non-FiT NFC. This market is expected to incentivise the development of non-fossil energy sources outside the FiT regime.

The Market for Trading of Renewable Energy Values was newly established in November 2021 following the growing demand for renewable energy-sourced electricity by consumers. This market deals with the NFCs under the FiT regime (the "FiT NFCs") and not only retail electricity suppliers but also consumers can purchase the FiT NFCs in this market. Although the FiT NFCs do not give benefits under the Promotion Act to retail electricity suppliers, both retail electricity suppliers and consumers may deduct the amount of CO_2 represented by the FiT NFCs from their CO_2 emissions for the purposes of the Act on Promotion of Global Warming Countermeasures. Income from the sale of FiT NFCs belongs to OCCTO and is applied to reduce the rate of the FiT surcharge imposed on consumers. This market is expected to sustain the

development of renewable energy sources under the FiT regime.

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, in March 2023, OCCTO prepared a master plan demonstrating the construction of a cross-regional interconnection network in Japan to promote renewable energy and achieve the carbon-neutral target in 2050.

4. Generation Facilities

4.1 The Construction and Operation of Generation Facilities

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

- the Electricity Business Act;
- the Environmental Impact Assessment Act (Act No 81 of 1997, as amended) (the "EIA Act");
- the Rationalisation Act; and
- the Act on the Regulation of Nuclear Source Material, Nuclear Fuel Material and Reactors.

4.2 Obtaining Approvals for the Construction and Operation of 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 or the intended facility meets certain specifications.

The generation facility must also pass a pre-use inspection conducted by METI before being used for commercial operation.

EIA Act

The operator must perform an environmental impact assessment in accordance with the EIA 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 publishes it and is expected (but not obliged) 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.

Rationalisation Act

With respect to the construction of thermal power plants with a coal or other fossil fuel energy source, the Rationalisation Act 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 delegated legislation.

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 for the Construction and Operation of Generation Facilities

In addition to the requirements to obtain construction and operation approvals as summarised in **4.2 Obtaining Approvals for the Construction and Operation of Generation Facilities**, an operator of an Electricity Generation Business is, in particular, obliged to do the following, pursuant to the Electricity Business Act and its delegated legislation:

- supply electricity as directed by the transmission and distribution network operators so that the demand and supply of electricity within the network will be balanced;
- supply electricity in accordance with 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 Eminent Domain, Condemnation or Expropriation Rights

The Expropriation of Land Act (Act No 219 of 1951, as amended) 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 Decommissioning a Generation Facility

If an operator of an Electricity Generation Business intends to suspend or terminate the whole of its generation business, it must submit a notification to METI in advance (as described in **1.7 Announcements Regarding New Policies**, the 2023 Amendment introduced the prior filling obligation for the abolishment of certain generation facilities). 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 2022 Amendment, operators are required to establish a mandatory reserve to cover decommissioning costs.

5. Transmission Lines and Associated Facilities

5.1 Regulation of the Construction and Operation of Transmission Lines and Associated 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 TSOs 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 before being provided for commercial operation. Construction of transmission facilities does not require an environmental impact assessment under the EIA Act.

5.2 Obtaining Approvals for the Construction and Operation of Transmission Lines and Associated 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, three exceptions to this monopoly.

Electricity Transmission Business Licence Holders

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

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 certain basic facts regarding the services to be provided such as geographical area of service, layout of transmission and distribution lines, and the specifications thereof.

Electricity Distribution Business Licence Holders

As described in **1.1 Law Governing the Structure and Ownership of the Power Industry**, while General Electricity Transmission and Distribution Business covers electricity distribution business in Japan, the 2022 Amendment allows a TSO to transfer or lease a part of its facilities in its service area to a DSO. The purpose of this new regulation is to enhance efficiency of the power system, disperse power sources into some regions and improve power supply resilience. Local electricity companies, infrastructure companies and IT companies are expected to be DSOs. The regulations applicable to Electricity Distribution Business have much in common with those of General Electricity Transmission and Distribution Business since Electricity Distribution Business is, in effect, an extract from General Electricity Transmission and Distribution Business. The operation of an Electricity Distribution Business requires the approval of METI.

5.3 Terms and Conditions Imposed in Approvals for the Construction and Operation of a Transmission Line and Associated Facilities

A TSO is obliged to perform the following pursuant to the Electricity Business Act and its delegated legislation. 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;
- provide electricity retail services in isolated islands within its service area;
- not to allow their directors to assume an office of its parent holding company or any of its affiliates that operate an Electricity Retail Business or an Electricity Generation Business (such parent holding company and affiliates being "interested parties");
- not to trade with interested parties except where permitted under the delegated legislation;
- 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 and record 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.

5.4 Eminent Domain, Condemnation and Expropriation Rights

See **4.4 Eminent Domain, Condemnation or Expropriation Rights**.

5.5 Monopoly Rights to Provide Transmission Services

Each TSO is assigned a regional service area and is granted de facto exclusivity within such service area by METI since METI does not grant two General Electricity Transmission and Distribution Business licences in relation to any service area. Electricity Transmission Business licences, Specified Electricity Transmission and Distribution Business licences and Electricity Distribution Business licences are exceptions to these monopoly arrangements as described in **5.2 Obtaining Approvals for the Construction and Operation of Transmission Lines and Associated Facilities**.

5.6 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 the service charge rates are set out in the regulations listed below:

- executive rules of the Electricity Business Act (*denkijigyoho shikokisoku*);

- rules on the methodology to compute tariffs for transmission and distribution services (*ippan sohaiden jigyo takusokyokyuto yakkan ryokin santei kisoku*);
- rules on the methodology to balance income and loss from transmission and distribution services (*denkijigyo takusokyokyuto shushi-keisan kisoku*).

The terms and conditions of transmission and distribution services are first proposed by the TSO and then fixed upon the approval of METI based on the advice of EGC.

METI reviews the proposed terms and conditions to check if they satisfy the following requirements:

- the tariff rate is computed and determined with the assumption that the operator's actual revenue will not exceed its projected revenue approved by METI;
- those terms and conditions do not significantly undermine accessibility to the transmission and distribution services;
- the method of computing the tariff rate is appropriately and clearly stated in those terms and conditions;
- the allocation of responsibility as well as cost sharing between the TSO and users of the transmission and distribution network are appropriately and clearly stated in those terms and conditions;
- those terms and conditions do not discriminate against any specific person; and
- those terms and conditions do not hinder the public interest.

Under the 2022 Amendment, in relation to determining the tariff rate, a "revenue cap" was introduced, which has been effective since 1 April 2023. Under the revenue cap, the TSOs are required to determine their tariff rate with the assumption that the operator's actual revenue will not exceed its projected revenue approved by METI. The TSOs propose their revenue projections and business plans for the forthcoming five years based on METI's guidelines of the goals to be achieved by the TSOs (for instance, development of the transmission and distribution network, promotion of the interconnection of renewable power, and improvement in customer satisfaction, etc). METI and EGC then review those projections and, if acceptable to METI and EGC, their projections and such projected revenues become the cap. The revenue cap is expected to incentivise the TSOs to reduce costs for transmission and distribution services and will lead, ultimately, to a reduction in the total electricity price for consumers.

Further, while the tariff rate is currently only charged to the demand-side (ie, retailers), METI plans to introduce a generation-side tariff in order to incentivise generators to select their power plant site in a location beneficial to effective power grid operation and formation. METI currently aims to introduce the generation-side tariff from the 2024 fiscal year.

5.7 Open-Access and Non-discriminatory Transmission

Pursuant to the Electricity Business Act, TSOs are obliged to provide access to their transmission and distribution network on a non-discriminatory basis.

6. Distribution

6.1 Law Governing the Construction and Operation of Electricity Distribution Facilities

See **5.1 Regulation of the Construction and Operation of Transmission Lines and Associated Facilities**.

6.2 Obtaining Approvals for the Construction and Operation of Electricity Distribution Facilities

See **5.2 Obtaining Approvals for the Construction and Operation of Transmission Lines and Associated Facilities**.

6.3 Terms and Conditions Imposed in Approvals for the Construction and Operation of Electricity Distribution Facilities

See **5.3 Terms and Conditions Imposed in Approvals for the Construction and Operation of a Transmission Line and Associated Facilities**. Note, however, that DSOs are not obliged to provide last-resort services and electricity retail services in isolated islands within their respective service areas.

6.4 Eminent Domain, Condemnation or Expropriation Rights for the Construction and Operation of Electricity Distribution Facilities

See **4.4 Eminent Domain, Condemnation or Expropriation Rights**.

6.5 Monopoly Rights for Electricity Distribution Entities

See **5.5 Monopoly Rights to Provide Transmission Services**.

6.6 Electricity Distribution System Charges and Terms of Service

Unlike TSOs, DSOs are not obliged to obtain the approval of METI with regard to their tariff rates and the terms and conditions of distribution services. However, the Electricity Business Act requires a DSO to make a prior written notification to METI if the operator sets or changes its tariff rates or prepares or amends the terms and conditions of its distribution services. If METI considers that such tariff rates or such terms and conditions do not comply with certain requirements, METI may order to them to revise the tariff rates or the terms and conditions. The requirements are set out in the criteria for examinations concerning dispositions of the Minister of Economy, Trade and Industry under the Electricity Business Act (*denki jigyoho nimotozuku keizaisangyodaijin no shobun nikakaru shinsakijuntou*).

See also **5.6 Transmission Charges and Terms of Service**. Tariff rates and the terms and conditions of distribution services of DSOs must be in alignment with those of TSOs in many respects. For instance, unit prices of distribution services of DSOs must be within 5% of those of TSOs on an annual average basis.

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