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Japan: Law and Practice

Rintaro Hirano, Yutaro Fujimoto, Yurika Masakane and Yutaro Kato
Nagashima Ohno & Tsunematsu

JAPAN

Law and Practice

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Nagashima Ohno & Tsunematsu is one of the foremost providers of international and commercial legal services based in Tokyo. The firm has over 598 lawyers, including over 52 experienced foreign lawyers from various jurisdictions (as of June 2024). Its overseas network includes offices in New York, Singapore, Bangkok, Ho Chi Minh City, Hanoi, Jakarta 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 and investors on their energy projects, including all associated regulatory matters, as well as financial institutions on financing for these projects. The firm has dealt with a number of renewable power projects since the introduction of the feed-in tariff in Japan.

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1. Structure and Ownership of the Power Industry

1.1 Law Governing the Structure and Ownership of the Power Industry

General Structure and Ownership

Inception

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 was 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 by 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 the "major utilities".

There were two exceptions to this vertical integration. They are both wholesale electricity generators:

- 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 the major utilities) to supplement the generation capacity of the original nine companies; and
- the Japan Atomic Power Company, which was incorporated in 1957 to promote the development of nuclear power plants by the major utilities and J-Power.

Power industry liberalisation

This vertical integration and the regional monopolies over the generation, transmission, distribution and retail sectors were gradually relaxed and liberalised after 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 consumers, or purchasers of 50 kW or more (the PPS licence scheme was abolished in 2016 when all electricity retailers were incorporated 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 limited geographical area through a transmission and distribution network that it operates and maintains on its own in such area.

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.

The power industry also completed a series of structural reforms that began in 2013:

- establishing a system to efficiently manage electricity across the transmission networks in Japan;
- fully liberalising the retail sector; and
- "legally unbundling" the transmission and distribution sectors from the generation and retail sectors.

The Organisation for Cross-Regional Co-Ordination of Transmission Operators (OCCTO) and the Electricity and Gas Market Surveillance Commission (EGC) were established in 2015 (see **1.5 Central Planning Authorities**). Subsequent to which, the retail sector was fully liberalised in 2016. However, as the major utilities and their affiliates still dominate the market, the existing basic electricity retail tariffs have continued to be regulated to secure fair competition with other retailers. This regulation is expected to be lifted at such time as the government considers that a sound competitive market has been established.

"Legal unbundling" occurred in April 2020 when new rules were introduced prohibiting a transmission system operator (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 on certain isolated Japanese islands).

Under this prohibition, TSOs are required to create a separate entity if they also want to conduct an Electricity Generation Business or Electricity Retail Business within the 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 TSOs from exercising influence over the operations of their affiliate retailers. See **4.3 Terms and Conditions Imposed on Approvals to Construct and Operate a Transmission Line and Associated Facilities**.

Further, in order to respond to new entrants' needs after this structural reform, the government has established several new electricity markets:

- the capacity market;
- the long-term decarbonised power source auction;
- the futures market;
- the base-load market;
- the balancing market; and
- the non-fossil fuel energy certificates trading market.

See **2.1 The Wholesale Electricity Market**.

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 business generates and sells electricity to retail sellers and TSOs.

Specified Electricity Wholesale Business (Tokutei Oroshikyokyu Jigyo)
This is the aggregation business of small power sources, including residential rooftop solar and batteries. Specified Electricity Wholesale Business operators sell such aggregated power wholesale to electricity retail business operators, etc (also referred to as an "Electricity Aggregation Business"). The Electricity Business Act has regulated this business since 1 April 2022, as it has much in common with the Electricity Generation Business, in that aggregated power is also an important power source for the national power system.

General Electricity Transmission and Distribution Business (Ippan Sohaiden Jigyo)
This operates and maintains an electricity transmission and distribution network. A 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) has conducted and continues to conduct since its inception under the regional monopoly regime. General Electricity Transmission and Distribution Business operators (ie, TSOs) are also required to provide ancillary services such as supply-demand adjustment and frequency control in their region.

Electricity Distribution Business (Haiden Jigyo)
This has also been a regulated business since 1 April 2022. It handles the operation and maintenance of a certain portion of the electricity distribution network in the service area of a TSO. While the General Electricity Transmission and Distribution Business covers the 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, a distribution system operator or DSO). DSOs are also required to provide ancillary services in their area.

Electricity Transmission Business (Soden Jigyo)
This business transmits 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)
The Specified Electricity Transmission and Distribution Business operator is allowed to sell electricity on its own network to consumers within a certain limited geographical area.

Electricity Retail Business (Kouri Denki Jigyo)
This business sells electricity to consumers.

1.2 Principal State-Owned or Investor-Owned Entities

All the major utilities are investor-owned companies with one exception: Tokyo Electric Power Company Holdings. More than 50% of this major utility's shares are held by the Nuclear Damage Compensation and Decommissioning Facilitation Corporation – a quasi-government institution that receives half of its capital from the government and which was established in response to the Fukushima nuclear incident in 2011. All the major utilities are listed on a stock exchange

in Japan and their stock is freely traded in the market.

Generation

As of May 2025, there were 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 2025, there were also 105 Specified Electricity Wholesale Business licence holders.

Transmission and Distribution

As of May 2025, there were ten TSOs, three Electricity Transmission Business licence holders and 44 Specified Electricity Transmission and Distribution Business licence holders. At the time of writing, there 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

The Electricity Retail Business has been gradually liberalised since 1995 and was fully liberalised in 2016. The number of Electricity Retail Business licences has grown significantly from 57 in August 2015 to 761 in May 2025. Although most Electricity Retail Businesses are investor-owned companies, some retail electricity suppliers are owned by municipal governments.

While the 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 October 2024, the share by sales volume of the electricity supplied by the new entrants was approximately 19.2%.

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.

Requirements

However, under the Foreign Exchange and Foreign Trade Act (Act No 228 of 1949, as amended), a foreign investor may not (i) invest in an unlisted power company; or (ii) 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.

Written notice

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 this may be shortened or extended to up to five months at the discretion of MOF and METI.

Exemption scheme

The exemption scheme is applicable to (i) investments which result in the investor owning less than 10% of the shares in a listed company that operates in the core sectors; and (ii) 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 a General Electricity Transmission and Distribution Business, Electric-

ity Transmission Business, Electricity Generation Business which owns a power plant or battery energy storage system with a maximum capacity of 50,000 kW or more, and Specified Electricity Wholesale Businesses in which the total output of electricity aggregated from power sources is 50,000 kW or more; "non-core sectors" are simply those that are not core sectors.

Other requirements for prior written notice

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

Warnings and Orders

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 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 cannot 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 submit 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.

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

Renewable Energy Power Plant

With regard to the sale of renewable energy power plants subject to the feed-in tariff regime ("FIT Regime") or feed-in premium regime ("FIP

Regime"), since 1 April 2024, the seller and the purchaser have been required to conduct briefing sessions for local residents pursuant to the Renewable Energy Special Measures Act (see **1.6 Recent Changes in Law or Regulation**).

Nuclear Power Plant

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.

Anti-Monopolisation

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 a business substantially restricts competition in a particular field of trade, the Japan Fair Trade Commission (JFTC) may issue an order forbidding such actions or changing the terms of such actions.

1.5 Central Planning Authorities

METI and ANRE

The ministry responsible for the 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 national 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 trades made in the energy market and propose better regulations to promote competition.

In order to achieve its mission, EGC, as an advisory body to METI:

- issues warnings to operators of electricity businesses when 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

Response to Breach of Legal Unbundling

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 considered these information leaks a serious breach, as they had a significant adverse impact on the legal unbundling rules, and it issued business improvement orders or warnings against some of the major utilities and their subsidiaries. METI subsequently decided to implement additional measures against TSOs, such as imposing a physical segregation on the IT systems of TSOs and their affiliate retailers, imposing a requirement for rigorous internal control systems, and instigating outside monitoring by EGC and industry groups of TSOs.

Changes to the Electricity Business Act in 2022 for the Establishment of a Resilient and Sustainable Power System

In recent years, Japan has suffered a number of natural disasters that damaged the stable power supply. In 2018, the Hokkaido Eastern Iburi earthquake caused the first large-scale blackout in Japan in living memory, and in 2018 and 2019, extraordinarily large and powerful typhoons hit the main island of Japan and caused wide-scale destruction of the electricity distribution infrastructure. Faced with these incidents, on 5 June 2020, the Diet (national legislature) passed a Bill to amend the Electricity Business Act (the "2022 Amendment"). The 2022 Amendment introduced substantial changes to the Electricity Business Act in order to:

- enhance co-operation among electricity companies in the case of emergencies;
- strengthen the power grid network; and
- establish a resilient power distribution system.

Under the 2022 Amendment, TSOs are required both to create co-operation plans and to establish reserves to cover the cost of dealing with emergencies. OCCTO has been 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.

Response to 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 a 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 the JEPX foundation) and also triggered a high imbalance fee. This, in turn, caused a financial crisis for a number of retailers and some commenced bankruptcy procedures.

The government listed the following as the major reasons for that incident: a significant increase

in the demand for electricity due to extraordinarily cold weather, curtailment of electricity production arising from an LNG shortage, 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 the use of photovoltaic and wind power, the supply of which fluctuates.

Further, since 2021, as in other countries in the world, the economic recovery from the COVID-19 pandemic, decrease in upstream investment in fossil fuels due to the decarbonisation trend, extreme weather conditions and the Russian invasion of Ukraine have all led to extreme supply-and-demand pressures and increased fuel and electricity prices. As a result, 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 the above, the government issued guidelines for electricity generators in respect of good practice in fuel procurement, and suggested hedging trades in markets such as the forward market, futures market and base-load market (see **2.1 The Wholesale Electricity Market**), as well as issuing another set of guidelines to explain and demonstrate basic risk assessment methodology and good practice for risk management in the electricity field.

In addition, the government 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.

Further, 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.

Changes to the Renewable Energy Special Measures Act

The Act on Special Measures Concerning Procurement of Electricity From Renewable Energy Sources by Electricity Utilities (Act No 108 of 2011, as amended – the "Renewable Energy Special Measures Act"), promulgated in 2011, introduced the FIT Regime. Under the Renewable Energy Special Measures Act, renewable energy that meets 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. In order to promote investment in renewable energy, the feed-in tariff – that is, the price of renewable energy – is set at a rate generally higher than the market rate.

The 2022 Amendment also amended the Renewable Energy Special Measures Act. In order to harmonise the renewable energy market with the conventional energy market, the 2022 Amendment introduced the FIP Regime from 1 April 2022 to complement the existing FIT Regime. 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 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, to a certain extent, the volatility risks of the market price and the off-taker's credit risks of the energy they generate. Moreover, under the FIP Regime, as with conventional power plant operators, renew-

able energy generators need to manage their imbalance risks.

Under the FIT Regime and FIP Regime, the introduction of renewable power generation facilities has been significantly growing and many new companies have entered the renewable energy market. However, since power generation facilities have a significant impact on the local community and environment where they are installed, there have been growing concerns in local communities regarding safety, and the potential impact on the landscape and environment. To promote the introduction of renewable power generation facilities in a sustainable manner, harmonisation between renewable energy projects and the local community is important. As such, in May 2023, the Diet passed a Bill to amend the Renewable Energy Special Measures Act (the "2024 Amendment of Renewable Energy Special Measures Act"), which came into force on 1 April 2024. Under the 2024 Amendment of Renewable Energy Special Measures Act, renewable energy project operators are required to hold briefing sessions with local communities in compliance with detailed requirements if such operators obtain initial approval under the FIT Regime or FIP Regime (ie, before they commence operating their renewable energy facilities) or if they change the ownership structure of the project in any material respect.

Change to Bidding Rules Under the Offshore Wind Promotion Act

In order to promote offshore wind electricity generation in Japan in the general sea area (rather than the port and harbour areas), the 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 – the "Offshore Wind Promotion Act"). However, the result of public bidding for the first batch (consisting of three project sea areas) of offshore wind electricity generation concessions under the Offshore Wind Promotion Act shocked the industry because consortiums represented by the same company won all three project sea areas. The government, believing that offshore wind farm projects must be open to more players in order for the industry to grow in the long term, introduced new rules under which a single bidder could only win offshore wind farm concessions up to 1 GW of power. Under the public bidding of the second batch (consisting of four project sea areas) and the third batch (consisting of two project sea areas) which were conducted under the new rules, those project sea areas were respectively awarded to different consortiums for each batch.

In order to promote offshore wind power generation further, the government submitted a Bill to the Diet in March 2025 to expand the promoted areas to include the entire Exclusive Economic Zone (EEZ) under the Offshore Wind Promotion Act.

The construction of offshore wind farms usually requires large investment over a long period, and thus the construction is susceptible to price fluctuation risks such as rising labour costs, inflation, interest rate hikes, and exchange rate fluctuations. As such, the government is discussing revisions to the bidding rules to enhance the reliability and feasibility of offshore wind projects, not only for future bid projects but also for the existing bid projects from the first to the third batches. Specifically, it is expected that the amount in deposits required from bidders will be increased and that part of the deposits will be forfeited in the event of a delay in the commencement of commercial operations. In addition, potential adjustment of the bid price

against construction price fluctuation is under discussion so that the successful bidder will not shoulder such risks entirely by itself.

1.7 Announcements Regarding New Policies

Carbon-Neutral Target in 2050

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.

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 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.

In addition, the 2023 Amendment also includes decarbonisation programmes such as new regulation of grid-scale batteries and the promotion of non-fossil fuels. Further, the amended Act on Rationalising Energy Use and Conversion to Non-Fossil Fuel Energy (Act No 49 of 1979, as amended, the "Rationalisation Act") encourages energy users to shift towards non-fossil fuel energy. For example, the Rationalisation Act imposes an obligation on certain energy users to report on their fossil fuel energy use and non-fossil fuel energy use, and to prepare for conversion to non-fossil fuel energy. Yet another act, the amended Act on the Promotion of Environmentally Compatible Utilization of Energy Sources and Effective Utilization of Raw Fossil Fuel Materials by Energy Companies (Act No 72 of 2009, as amended, the "Promotion Act") encourages thermal power plant operators to use decarbonised fuels such as hydrogen and ammonia, and to install a carbon dioxide capture and storage system (CCS) in their thermal power plants.

In the context of this movement towards the carbon neutral target, (i) the Act on Promotion of Supply and Use of Low Carbon Hydrogen, etc, for a Smooth Transition to the Decarbonised Growth Economy (the "Hydrogen Society Promotion Act"); and (ii) the Act on Business of Carbon Dioxide Capture and Storage System (the "CCS Act") were passed in May 2024. The Hydrogen Society Promotion Act was enacted on 23 October 2024, while the CCS Act was partially enacted on 5 August and 18 November 2024. These are the first pieces of legislation in Japan which focus on business regarding hydrogen and CCS, respectively. The Hydrogen Society Promotion Act aims to support certified operators who intend to supply or use low-carbon hydrogen (meaning, hydrogen and its compounds, which contribute to the reduction of carbon dioxide, and which are to be designated by legislation) by providing subsidies and certain preferential treatment for permits necessary to conduct such business. The CCS Act establishes the legal framework and regulations for CCS business, especially regarding exploratory drilling, and the storage and transport of carbon dioxide. The CCS Act further provides that an operator can conduct carbon dioxide storage and exploratory drilling only when the operator is selected through a public tender process for each area where a stratum suitable for the storage of carbon dioxide exists or may exist. The government is also discussing subsidies to support the introduction of CCS business into Japan.

Further, on 18 February 2025, the Cabinet approved the 7th Strategic Energy Plan under the Basic Act on Energy Policy (the "Strategic Energy Plan"). This sets forth the fundamental direction of the national energy policy. Under the revised plan, the phrase "reduce dependence on nuclear power as much as possible", which had appeared in the previous (6th) Strategic Energy Plan was removed. This suggests a shift towards a more prominent role for nuclear power in Japan's long-term energy strategy.

On the same day, the Cabinet also approved the Global Warming Countermeasures Plan. This plan outlines concrete measures to achieve Japan's GHG reduction targets for 2030, 2035 and 2040. In this context, the government updated the Nationally Determined Contribution (NDC) of Japan under the Paris Agreement, including revising GHG reduction targets to a 60% reduction by 2035 and a 73% reduction by 2040 from 2013 levels. These targets serve as linear milestones towards achieving carbon neutrality in 2050.

Green Transformation

In addition, on 10 February 2023, the government developed a roadmap that outlines investment promotion measures to be taken by the government to achieve the Green Transformation ("GX") and, as a means to realise some of these measures, the Act on the Promotion of the Smooth Transition to a Decarbonised Growth Economy (the "GX Act") was passed on 12 May 2023 and took effect in June 2023. 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 businesses and 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 the 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 auction (the charge incurred by Specific Operators to acquire such emission allowances by auction is called the "Surcharge for Specific Operators"), and the percentage of emission allowances allocated by auction is scheduled to gradually increase.

Subsequently, on 25 February 2025, the Cabinet submitted a Bill to amend the GX Act. The draft legislation aims to facilitate the smooth transition to a decarbonised growth-oriented economic structure and introduces measures including the legal codification of the GHG emissions trading system. Under the proposed system, starting in 2026, businesses falling within the scope of the scheme will receive emissions allowances free of charge, based on government-issued guidelines that reflect the specific characteristics of each industry. These guidelines also take into account factors such as the risk of offshoring production

facilities, the scale of investment in GX-related research and development, and the status of equipment upgrades or decommissioning. If the actual emissions of a business exceed the allocated allowances, the business will be required to procure additional allowances. Conversely, businesses that achieve emission reductions and generate surplus allowances may sell them or carry them forward to subsequent years.

Long-Term Decarbonised Power Source Auction

As a special category of auction in the capacity market, long-term decarbonised power source auctions started from 2023, aimed at promoting investment in decarbonised power sources. Generators who plan to establish new decarbonised power sources (including LNG power plants) may participate in these auctions at a bid price equal to the fixed costs expected to be required for the construction and operation of such power sources, plus certain profit margins to secure approximately 5% of the weighted average cost of capital. If a bid is successful, the generator is entitled to receive an amount equivalent to the bid price annually from OCCTO, on the condition of maintaining its generation capacity for 20 years (or a longer period, if the generator designates a longer period at the time of bidding), commencing from the next fiscal year in which generation capacity is to be provided. In addition, instead of receiving the full amount of such fixed remuneration, generators must pay OCCTO approximately 90% of the profits earned from the operation of such power sources.

Grid-Scale Battery Promotion

In order to relax supply-demand pressures and prevent price spikes in the electricity market, the grid-scale battery business is being encouraged. In the grid-scale battery business, electricity is (i) stored when the electricity market price is low; and (ii) discharged when the electricity market price is high to earn a profit. To establish an appropriate business environment, METI has reformed legal frameworks for the grid-scale battery business. The 2023 Amendment stipulates that the discharge from grid-scale batteries that have stored electricity over a certain capacity is to be regulated, as electricity generation business under the Electricity Business Act. At the time of writing, the supply of electricity for charging grid-scale batteries is regulated as electricity retail business under the Electricity Business Act. However, since the electricity supply to charge grid-scale batteries is different in nature from that supplied to consumers, METI is considering the introduction of a new type of licence for such supply to grid-scale batteries.

Master Plan and Network Construction Plans

In March 2023, OCCTO prepared a master plan for the construction of a cross-regional interconnection network in Japan (the "Master Plan") to promote renewable energy and achieve the Japanese government's proclaimed carbon-neutral target in 2050. Individual network construction plans for each transmission-grid (which corresponds to the major utilities' coverage) are to be prepared with the costs and benefits of the networks under each plan taken into account, in accordance with the Master Plan. As of the date of this article, several network construction plans have been under development, the implementation of some of which is estimated to cost over hundreds of billions of Japanese yen. For example, implementation of the construction plan for the submarine network connecting the Hokkaido–Tohoku–Tokyo areas is forecast to cost approximately JPY2.5 trillion to JPY3.4 trillion. However, recent significant increases in construction costs and changes to the power business environment have provoked discussion

to revise the Master Plan (and the network construction plan, accordingly).

Integrated Market Under Discussion

As TSOs often run short of control reserves, the trading prices of control reserves tend to be high even when a sufficient quantity of kWh's is sold on the JEPX spot market. In order to provide a solution for this situation, ANRE and OCCTO have been discussing the establishment of a market integrating kWh trades at the JEPX spot market and control reserve trades at the balancing market. An integrated market will seek to optimise kWh trades and control reserve trades overall. There are many undecided issues surrounding the idea of an integrated market, and it remains under discussion (possibly starting in 2030). If the integrated market is established, it could alter many aspects of the existing electricity trading systems, such as bid rules and pricing in the various markets, balancing mechanisms and curtailment rules.

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 control 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 on an equal footing with major utility retailers has been an important issue. Among the unique aspects of the power industry in Japan is that while the government continues to establish regulations to address that issue, it is also strongly encouraging the major utilities to voluntarily develop solutions to support new-entrant retailers. For example, the government has requested that the major utilities voluntarily commit themselves to supplying their surplus electricity to the JEPX at marginal cost and to performing wholesale transactions without discriminating between their group companies and others. In particular, in order to evaluate whether and to what extent major utilities comply with their commitment to such non-discrimination in wholesale transactions, EGC established detailed criteria in 2023. While these criteria are not a requirement under the statutes, EGC publicly announced the evaluation regime so that it can urge the major utilities to comply with their commitment. At the time of writing, many major utilities had been evaluated as being fully compliant with the non-discrimination criteria.

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 electrical 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. The JEPX is the electricity wholesale market in Japan. Trades available on the JEPX as wholesale electricity are:

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

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 keep competition on an equal footing between the major utility retailers and other retailers, wholesale trading of electricity by the major utilities is monitored so that the price cannot be manipulated or unduly inflated.

Market Trading on the JEPX

Spot market trading

This is trading of electricity supplied on the next day after the 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

This 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

This is trading of electricity supplied on a day when 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

This 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, 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 as a wholesale market of electricity generated by a nuclear power plant, a traditional large-scale hydropower plant, a coal-fired power plant or a geothermal power plant (also known as "base-load electricity") to electricity retailers. The major utilities and J-Power are required to offer base-load electricity to the base-load market at no more than the amount calculated by a prescribed formula, to secure retailers' access to base-load electricity for a price that is not 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 a 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.

Power futures markets

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) also launched a Japanese futures market in May 2020. After the sharp price spike in 2020, the trading volume of Japan power futures is growing sharply and steadily. The futures markets provide hedging on the physical power market, price indexing of domestic electricity in Japanese yen, and clearing counterparty credit risk. In order to further promote the power futures markets, METI has discussed, through its working group on stimulation of power futures in Japan, taking various other measures such as strengthening the linkage between physical and futures markets, expanding market participants such as financial institutions, disseminating know-how and establishing best practices for power futures trading and improving surveillance to ensure transparent and fair trading.

Balancing market

In 2021 a balancing market (also referred to as a "real-time market") was established. This market enables the 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.

Control reserves sold in the balancing market are classified into five types by response time and duration. The balancing market initially started handling a type of control reserve in the low-speed range. Then, gradually, other types of control reserves were added to this market and in April 2024, the balancing market finally began handling all five types of control reserves. The balancing market was previously operated by the TSOs, but since April 2024, has been operated by the Electric Power Reserve Exchange (EPRX), a general incorporated association established by the TSOs.

Since the balancing market has several critical issues such as a shortage of seller bids and high-price bids, there have been discussions regarding whether the balancing market should be integrated into the JEPX spot market (see **1.7 Announcements Regarding New Policies**).

Non-fossil fuel energy certificates trading market

As a measure to achieve the non-fossil energy source target, the non-fossil fuel energy certificates trading market was established in May 2018. 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 (Act No 117 of 1998, as amended). At the time of writing, 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 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 obliged under the Promotion Act to ensure that 44% or more of their electricity supply comes 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.

The Market for Trading of Renewable Energy Values was 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 ("FIT NFCs") and not only retail electricity suppliers but also consumers can purchase FIT NFCs in this market. Although 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.

Point to note regarding supply to high-load consumers

There are no special market regulations regarding supply for high-load consumers. However, in response to the expansion of localised high-load electricity demand at data centres, semiconductor factories and other facilities, the following measures are being discussed to efficiently and rationally develop and utilise transmission and distribution networks:

- setting payment deadlines for grid construction costs to be paid by consumers to the TSO;
- shifting part of the cost for upgrading the upper-level grid network, which was previously borne by TSOs, to high-load electricity consumers;
- releasing grid capacity exceeding actual electricity demand by high-load consumers; and
- placing the additional burden of expense onto high-load consumers for delayed construction of high-load consumption facilities.

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 these do not occur.

2.3 Supply Mix of Electricity

According to ANRE, the supply mix of electricity in 2023 was as follows:

- natural gas 32.9%;
- coal 28.3%;
- oil 7.4%;
- nuclear 8.5%;
- hydro 7.6%;
- solar 9.8%;
- wind 1.1%;
- biomass 4.1%; and
- geothermal 0.3%.

As of the time of writing, Japan's outlook for the supply mix in 2040 is:

- thermal 30%–40%;
- nuclear 20%;
- hydro 8%–10%;
- solar 23%–29%;
- wind 4%–8%;
- biomass 5%–6%; and
- geothermal 1%–2%.

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

In addition, under the Act on Prohibition of Private Monopolisation and Maintenance of Fair Trade, the JFTC oversees the power industry. If any anti-competitive behaviour is detected, the 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, the JFTC issued cease and desist orders and Administrative Monetary Penalty Payment Orders to some of the major utilities due to cartel behaviour (some of these orders are being contested at the time of writing). The JFTC determined that these major utilities agreed with each other in the autumn of 2018 at the latest to restrict sales to consumers located in areas where the other major utilities 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. METI also issued Business Improvement Orders, which included orders to some major utilities suspected of engaging in cartel behaviour, to implement measures preventing anti-competitive behaviour. In addition, METI instructed all the major utilities to implement measures to establish fair power trading relationships.

3. Generation Facilities

3.1 Constructing and Operating Generation Facilities

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

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

3.2 Obtaining 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 an application to OCCTO for 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 EIA 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 EIA 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 EIA.

Draft environmental impact statement
Based on the completed EIA, 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 the 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 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, and approval of the nuclear reactor construction plan, from the NRA. Further approval from METI for the construction plan of a nuclear reactor is required under the Electricity Business Act.

Renewable Energy Special Measures Act
If an operator desires to participate in the FIT Regime or FIP Regime, it must comply with the Renewable Energy Special Measures Act, including briefing sessions with the local community. See **1.6 Recent Changes in Law or Regulation**.

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

3.3 Approvals to Construct and Operate Generation Facilities
In addition to the requirements to obtain construction and operation approvals as summarised in **3.2 Obtaining Approvals to Construct and Operate Generation Facilities**, an operator of an Electricity Generation Business is 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.

3.4 Eminent Domain, Condemnation and Expropriation Rights to Construct and Operate Generation Facilities

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 the MLIT, which will grant the operator an award of expropriation unless the undertaking is found to be materially different, or materially differently implemented, than as explained to the MLIT and/or the relevant local government.

3.5 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 abolition 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 the 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 Renewable Energy Special Measures Act, operators are required to establish a mandatory reserve to cover decommissioning costs for those facilities subject to the FIT Regime or the FIP Regime.

Moreover, in order to promote the recycling of solar panels, the introduction of a comprehensive system for recycling solar panels is being considered. Under this system, manufacturers or importers of solar panels will be obliged to contribute to funds to be established to cover the costs of recycling, from which operators will then be able to access funds as necessary and/or appropriate for recycling activities.

With regard to offshore wind power generation facilities subject to the Offshore Wind Promotion Act, measures to ensure decommissioning costs

are adequately funded are required to be taken under the bidding guidelines. In addition, as with solar powerplants, operators of onshore and offshore wind farms will be subject to mandatory reserve funding accumulation to cover decommissioning costs under the Renewable Energy Special Measures Act.

4. Transmission Lines and Associated Facilities

4.1 Constructing and Operating 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.

In addition, TSOs need to consider the Master Plan and network construction plans for the geographical area they are responsible for when they develop their transmission lines and associated facilities. See **1.7 Announcements Regarding New Policies**.

4.2 Obtaining Approvals to Construct and Operate 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 seems unlikely that METI would issue a new licence to conduct General Electricity Transmission and Distribution Business.

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 merely 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 the efficiency of the power system, disperse power sources in some regions and improve power supply resilience. Local electricity companies, infrastructure companies and IT companies are expected to be DSOs. The regulations applicable to an Electricity Distribution Business are much the same as those applicable to a General Electricity Transmission and Distribution Business, since an Electricity Distribution Business is, in effect, an offshoot of a General Electricity Transmission and Distribution Business. The operation of an Electricity Distribution Business requires the approval of METI.

4.3 Terms and Conditions Imposed on Approvals to Construct and Operate a Transmission Line and Associated Facilities

A TSO is obliged to do the following pursuant to the Electricity Business Act and its delegated legislation:

- offer access to the 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 on isolated islands within its service area;
- not allow its directors to assume an office in 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 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 segmented financial statements regarding its transmission and distribution services to METI;
- submit a report to METI 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.

4.4 Eminent Domain, Condemnation and Expropriation Rights to Construct and Operate Transmission Lines and Associated Facilities

See **3.4 Eminent Domain, Condemnation and Expropriation Rights to Construct and Operate Generation Facilities**.

4.5 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 **4.2 Obtaining Approvals to Construct and Operate Transmission Lines and Associated Facilities**.

4.6 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*); and
- 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;
- the 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 the terms and conditions;
- the allocation of responsibility as well as cost-sharing between the TSO and users of the transmission and distribution network is appropriately and clearly stated in the terms and conditions;
- the terms and conditions do not discriminate against any specific person; and
- the 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 (eg, 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 these projections and, if acceptable to METI and EGC, these 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 lead, ultimately, to a reduction in the total electricity price for consumers.

Further, while the tariff rate was previously only charged on the demand-side (ie, retailers), from 1 April 2024, each TSO is able to charge a tariff on generators that use the transmission services of TSOs. This tariff charged on generators ("Generation-Side Tariff") consists of (i) a kW tariff, where the rate is determined with reference to the maximum generation capacity of the facility minus the demand capacity of the facility; and (ii) a kWh tariff, where the rate is determined with reference to the actual generated electricity. The Generation-Side Tariff is expected to be passed on to electricity retailers and will ultimately be borne by consumers. Through this system, transmission costs are borne equally by consumers whether or not such consumers are located in the generation area.

4.7 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.

5. Distribution

5.1 Constructing and Operating Electricity Distribution Facilities

See **4.1 Constructing and Operating Transmission Lines and Associated Facilities**.

5.2 Regulatory Process for Obtaining Approvals to Construct and Operate Electricity Distribution Facilities

See **4.2 Obtaining Approvals to Construct and Operate Transmission Lines and Associated Facilities**.

5.3 Terms and Conditions Imposed in Approvals to Construct and Operate Electric Distribution Facilities

See **4.3 Terms and Conditions Imposed on Approvals to Construct and Operate a Transmission Line and Associated Facilities**. Note, however, that DSOs are not obliged to provide last-resort services and electricity retail services on isolated islands within their respective service areas.

5.4 Eminent Domain, Condemnation or Expropriation Rights to Construct and Operate Electricity Distribution Facilities

See **3.4 Eminent Domain, Condemnation and Expropriation Rights to Construct and Operate Generation Facilities**.

5.5 Monopoly Rights for Electricity Distribution Entities

See **4.5 Monopoly Rights to Provide Transmission Services**.

5.6 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 the DSO 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 **4.6 Transmission Charges and Terms of Service**. Tariff rates and the terms and conditions of the 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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