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Generation-Side Tariff (Background and Current Status)¹

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In this newsletter, the background and current status of discussions relating to a generation-side tariff, and possible practical responses thereto, will be outlined and explained.

1. Background

(1) Increased Expense of Transmission and Distribution ("T&D") Equipment

Since the Great East Japan Earthquake in 2011, entry into the electricity generation industry has become easier, since (i) the electric business has been gradually liberalized, and (ii) T&D sectors have been legally unbundled from the generation and retail sectors. In addition, power plants such as renewable energy power sources have been increasingly dispersed owing to the introduction of a Feed-in Tariff (FIT) scheme. As a result, system enhancements have become much more commonplace, and the costs incurred by such have increased accordingly.

As the existing T&D network was developed in the period of high economic growth in Japan (i.e., from the later 1950s to the early 1970s), it is expected that large amounts will be spent on renewal costs for T&D networks in the future.

(2) Wheeling Charges and Composition thereof

Under the current scheme, operation and maintenance ("O&M") costs for T&D equipment have been collected as a part of wheeling charges.

Wheeling charges mean the fees paid by an electricity retailer (*kouri denki jigyo*sha, under the Electricity Business Act (Act No. 170 of 1964, as amended, the "EBA")) (the "Retailer") to a general electricity T&D operator (*ippan sohaiden jigyo*sya under the EBA) (the "GTD Operator"), etc., when the Retailer delivers electricity generated by an electricity generator (including the Electricity Generator

¹ This is the English summary of our Japanese newsletter issued on October 18, 2021. Please see https://www.aml-law.com/asset/pdf/bulletins12_pdf/211018.pdf

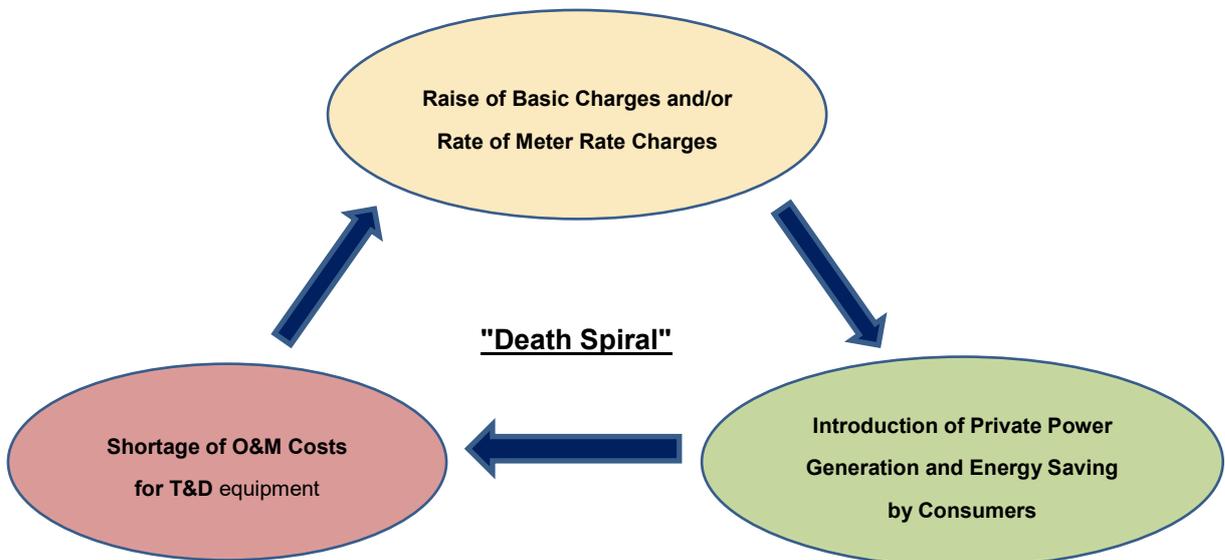
(*hatsuden jigyosha*) under the EBA) (the "Generator") to consumers. While wheeling charges are primarily paid by the Retailer, the consumer has ultimately borne the corresponding cost since an equivalent amount is reflected in the electricity charges and is collected by the Retailer from consumers.

Generally, while wheeling costs (i.e., O&M costs for T&D equipment) consist of (i) 80% of an amount equivalent to fixed costs, and (ii) 20% of an amount equivalent to variable costs, wheeling charges consist of (i) 30% of a fixed basic charge imposed in accordance with the contractual maximum output (kW), and (ii) 70% of meter rate charges (kWh) imposed in proportion to usage.

(3) Promotion of Private Power Generation/Energy Conservation and "Death Spiral"

On the other hand, it is currently expected that electricity demand in 2030 will be almost the same level as in 2013 due to population decline and to the promotion of thorough-going energy conservation.

Based on the above assumptions and taking into account that O&M costs for T&D equipment will increase in the future, it will be inevitable that basic charges and/or the rate of meter rate charges are raised if substantial portions of such costs are collected from wheeling charges. However, such a raise will encourage consumers to use onsite power sources such as private power generation, or to further save energy, which could result in a situation in which collecting wheeling charges will be more difficult (a so-called "Death Spiral").



(4) Fundamental Concept of Generation-Side Tariff

In the first place, consumers have borne O&M costs for T&D equipment in principle because it has been considered that T&D enhancement is attributable to and benefits consumers, against a background where T&D equipment has been installed to transmit electricity to urban areas and other points of demand from large power sources installed in response to growing electricity demands.

However, as power plants and systems have been dispersed as mentioned above, cases have significantly increased in which the Generator brings about a necessity for T&D network enhancement.

The starting point of the discussion on a generation-side tariff was that the generation-side and consumer-side should equally bear an amount equivalent to fixed costs out of the costs for upper systems² (i.e., costs for transmitting and receiving electricity) because both are deemed to be benefited by them. If a generation-side tariff were introduced, it has been estimated that the generation-side would bear costs of approximately 150 yen/kW per month.

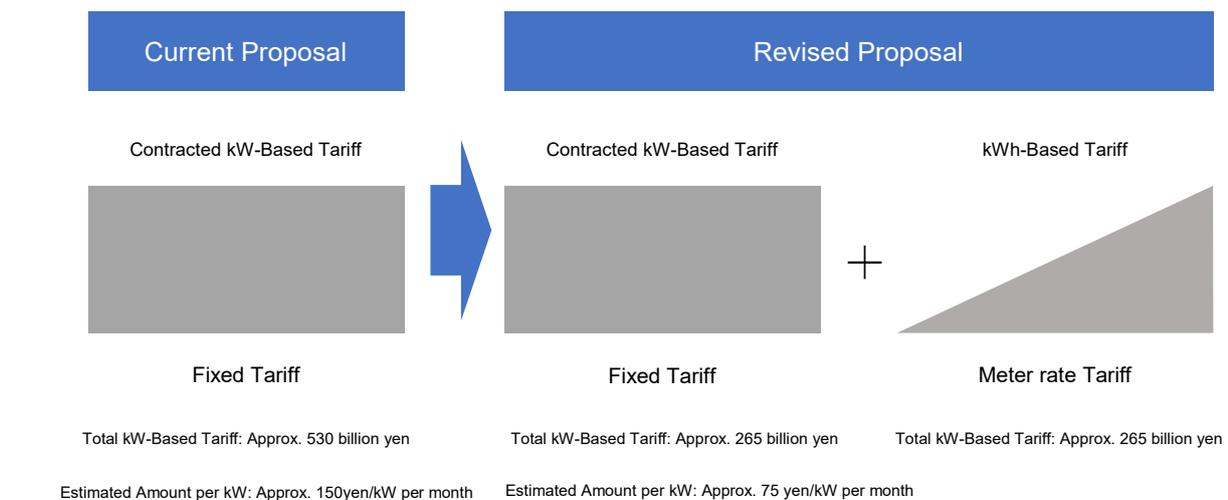
2. Recent Discussion on Generation-Side Tariff

(1) Introduction of kW and kWh-Based Tariff

In Japan, in parallel with the discussion on a generation-side tariff, discussions are currently being carried out with a view to introducing market-driven congestion management methods, which are called a "Zone System" and a "Nodal System", to bulk power systems (*kikan keito*) in the future.

Under these methods, the order of priority according to which power plants utilizing the bulk power system during each time slot will be determined based on the market price of the electricity generated by each of the power plants. As a result, some power plants may not utilize the bulk power system in congested areas during a certain time slot. Under such circumstances, it is no longer ensured that each power plant can always utilize the system at the maximum power output (kW). Rather, it is more appropriate to say that each power plant benefits from the system in accordance with the amount of electricity (kWh) which the power plant has supplied through the systems.

Although a generation-side tariff had been scheduled to be introduced solely on a kW-basis, the Secretariat has proposed at the 54th meeting of the Expert Panel on Instrumental Arrangements (*seido senmon sekkei kaigo*, a subordinate organization of the Electricity and Gas Surveillance Commission, the "Expert Panel") held on January 25, 2021, that the ratio of a tariff based on (i) maximum power output (kW), and (ii) the amount of electricity (kWh) which has been supplied through the T&D system, should be set at 1:1, considering the future conditions affecting costs for the development of power transmission equipment in advance. The proposal was approved by the attendees at the Expert Panel.



² Upper systems mean (i) bulk power systems (*kikan keito*) other than a distribution network, and (ii) extra-high voltage systems (*tokubetsu koatsu keito*).

(2) Existing PPA (Pass-through Guidelines)

Under the existing power purchase agreement (PPA) between the Generator and the Retailer, the wholesale price is set on the assumption that the Retailers bear all wheeling charges. Therefore, there has been an ongoing discussion regarding how to deal with the existing bilateral PPA between the Generator and the Retailer after a generation-side tariff is introduced.

Specifically, the Expert Panel is now preparing guidelines for reviewing the existing bilateral PPA ("Pass-through Guidelines") so that the Generators and Retailers can discuss properly amendments to the PPA. The Pass-through Guidelines will provide a policy to ensure that appropriate discussions between the Generators and the Retailers take place and to revise contract terms and conditions to ensure that 0.5yen/kWh, which equals the reduced amount of the wheeling charges borne by the Retailer on average nationwide for all power sources once a generation-side tariff is introduced, would be properly appropriated to wholesale prices (i.e. passed-through to the Retailer).

(3) Impact on FIT Scheme Project

A. Retailer Offtake Scheme and GTD Operator Offtake Scheme

There are two types of offtaker of power sources to which a Feed-in Tariff is applied (FIT power sources): the Retailer (the "Retailer Offtake Scheme") or the GTD Operator (the "GTD Operator Offtake Scheme").³

It is currently expected that the Pass-through Guidelines will be applied to the existing Retailer Offtake Scheme, and a transfer of 0.5yen/kWh to the Retailers, which is the average nationwide for all power sources, will be permitted thereunder.

B. Level of Generation-Side Tariff for Each Renewable Power Source upon Adjustment

As a premise, the level of a generation-side tariff and retail pass-through varies depending on each area since the wheeling charges vary depending on each area. As mentioned above, the discussions are now proceeding on the basis that a generation-side tariff consists of (i) the amount equivalent to the contracted capacity (kW), and (ii) the amount of electricity (kWh) which has been supplied through the T&D network. However, the amount of the generation-side tariff per kWh varies depending on each FIT power source, since the equipment utilization rate is different according to the FIT power source due to its nature. The estimated level of a generation-side tariff/retail pass-through per kWh in each area has been estimated as follows (see below). This estimation was based on a simplified calculation using data for wheeling costs, etc., for the year 2015.

³ Specifically, (i) the Retailer Offtake Scheme was taken if the PPA was executed on or prior to March 31, 2017, and (ii) the GTD Operator Offtake Scheme was taken if the PPA was executed on or after April 1, 2017, respectively. The Retailer Offtake Scheme accounts for 75% of FIT power sources on a total purchase volume basis.

(Reference) Range of Tariff/Retail Pass-through Level in Each Area

<u>Range of Tariff Level in Each Area (Categorized by Power Sources/without Discount)</u>	<u>Range of Retail Pass-through Level in Each Area</u>
Solar power	: 0.84-1.07 yen/kWh
Wind power	: 0.64-0.78 yen/kWh
Geothermal power	: 0.41-0.47 yen/kWh
Small and medium hydroelectric power	: 0.39-0.44 yen/kWh
Biomass	: 0.37-0.42 yen/kWh

*This estimation was made based on a simplified calculation using cost data for all general electricity T&D utilities for the year 2015 and is based on various assumptions.

Among each renewable power source listed above, adding to the FIT procurement price in accordance with the Pass-through Guidelines means that it will be able to cover the generation-side tariff to be imposed on geothermal power plants, small and medium hydroelectric power plants and biomass plants (0.37-0.47yen/kWh, 0.4yen/kWh on average nationwide), since their equipment utilization rate is relatively high. On the other hand, since an excess portion will remain such as cannot be covered solely by increasing the wholesale price in accordance with the Pass-through Guidelines with respect to solar power plants and wind power plants, adjustment measures (including the details thereof) are now an issue subject to discussions.

C. Existing Retailer Offtake Scheme

With respect to a generation-side tariff, there have been discussions from the beginning of the deliberation process to the effect that it would not be unreasonable to request the Generator to bear the whole of the generation-side tariff if the power plant is a commercial solar project⁴ for which a profit incentive period has been set, in contrast to other renewable power sources.

In light of the background of the discussions, at the 32nd Subcommittee Meeting on the Large-Volume Introduction of the Renewable Energy and Next Generation Electric Network (May 12, 2021)⁵, the Secretariat provided the following options in order to deal with excess amounts remaining on the generation-side, even after transferring the burden of costs to the Retailer in accordance with the Pass-through Guidelines: (1) With respect to each FIT power source (the Retailer Offtake Scheme), either "

⁴ Pursuant to Article 2, Paragraph 1 through Paragraph 4 of the Public Notice on Procurement Prices, solar plants with an output of 10kW or more and that are procured at the price of 40 yen/kWh, 36 yen/kWh, 32 yen/kWh or 29 yen/kWh fall under these commercial solar power projects.

⁵ *saisei kano enerugi tairyo donyu, jisedai denryoku network sho iinkai*, a subcommittee of Ministry of Economy, Trade and Industry.

A. the entire excessive amount will be covered by a levy on consumers under the FIT scheme", or "B. only a portion of excess amounts (e.g., amounts equivalent to 0.25yen/kWh⁶) will be covered by a levy on consumers under the FIT scheme, and the Generator bears the residual amounts"; and (2) with respect to commercial solar projects during the profit incentive period, "C. the Generator bears the entire excessive amounts". The attendees of the Subcommittee Meeting were divided among these options (the proposed options are found in the cells highlighted in yellow in the diagram below).

	(i) Commercial solar projects during profit incentive period	(ii) Other FIT power sources (the Retailer Offtake Scheme)
A. The entire excessive amount will be covered by a levy on consumers under the FIT scheme		
B. Only a portion of excess amounts (e.g. an amount equivalent to 0.25yen/kWh) will be covered by a levy, and the Generator bears the residual amount		
C. Generator bears the entire excessive amounts		

Once the generation-side tariff is introduced, it is expected that the agreed price in the spot market under Japan Electric Power Exchange will rise, but the levy will be reduced in conjunction with such an increase of the agreed price. Therefore, it is expected that the related council/committee will again discuss the adjustment measures based on these points after having discussions with and receiving proposals from the relevant departments in the future.

3. Practical Actions

(1) Focus on Trends of Discussion on Existing Retailer Offtake Scheme

As mentioned above, once a generation-side tariff is introduced, (i) excess amounts will remain that are not covered by a pass-through to the Retailers in accordance with the Pass-through Guidelines with

⁶ 0.25yen/kWh is equivalent to half of the burden level of the solar power with the highest kWh unit price (approx. 0.5 yen/kWh) remaining after the retail pass-through implemented in accordance with the Pass-through Guideline. If 0.25 yen/kWh is to be covered by the levy, since wind power charges range from 0.64 yen to 0.78 yen/kWh, depending on the area, most of it will be covered by the levy even if either of the adjustment measures A or B is adopted.

respect to FIT power sources related to the existing Retailer Offtake Scheme, and (ii) such excess portion may not be covered by a levy under the FIT scheme and, as a result, may have to be borne by the generation-side. Future discussions of this issue merit careful attention.

If the Generator must pay (a part of) the generation-side tariff out of its pocket, it will have some impact on the Generator's cash flow. If project financing has already been arranged regarding any given power plant, sponsors and lenders will have to discuss how to deal with the cash flow impact, including by reflecting it in their business plan or by way of some other procedural arrangement⁷.

(2) Impact on New FIT Scheme Projects

Considering that the introduction of a generation-side tariff may cause the burden of costs on the Generator to increase, with respect to new FIT scheme projects, it is expected that a generation-side tariff will be treated as "costs that are deemed to be normally necessary to efficiently implement the business", and the detailed level and treatment (whether and how much such costs should be reflected to FIT procurement prices) thereof will be discussed within the Calculation Committee for Procurement Prices (*chotatsu kakakutou santei iinkai*, a subordinated committee of the Ministry of Economy, Trade and Industry).

(3) Other Discussions on a Generation-Side Tariff

Introduction of a generation-side tariff has been discussed as the package associated with uplifting limits on the consumer burden for the initial costs for T&D enhancement, such as the construction costs of T&D equipment, which reduce the burden of costs borne by the Generator; therefore, a generation-side tariff is highly likely to be introduced in the future. However, as mentioned in this newsletter, there are some details that have not been entirely determined at this time, such as the handling of FIT power sources. A continued monitoring of the trending of future discussions is necessary so that prompt and appropriate practical responses can be made once the generation-side tariff is introduced.

⁷ Depending on the projects, it could constitute a cash trap event, a mandatory prepayment event and/or an event of default under the related loan agreement for the project finance structure.

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