

Issues and Recommendations on Renewable Electricity Procurement - Corporate Voices for Decarbonization -

In a situation where decarbonization efforts are accelerating throughout the world, many companies in Japan are actively using renewable electricity to promote decarbonization. In response to requests from customers, suppliers, investors, and others, increasing the use of renewable electricity has become a top management priority. However, the share of electricity from renewables in Japan is low at around 20%, and the purchase price is relatively high.

There are many challenges that companies face in using renewable electricity. Based on the opinions of 27 companies that are leading the way in the use of renewable electricity, we have summarized the current major challenges in 10 areas. In addition to issues related to corporate PPAs (Power Purchase Agreements), there are issues related to policies such as the Non-fossil Certificate system and the competitiveness of new suppliers. To resolve these issues, we propose 5 recommendations to the government and electricity suppliers.

Japan must keep up with the tide of decarbonization, and by allowing companies to rapidly decarbonize their businesses through the use of renewable electricity, this will help strengthen the industrial competitiveness of Japan as a whole. Accelerating the use of renewable electricity through cooperation between the public and private sectors is required right now.

This document summarizes the result of studies conducted by a working group (February - May 2023) of 27 companies as part of the activities of the Renewable Energy Users Network (RE-Users), a forum for information sharing among companies working to expand the use of renewable electricity. Renewable Energy Institute, which operates RE-Users, served as the secretariat.

[Companies Participating in the Working Group]

Aeon, Amazon Web Services Japan, Daiwa House Industry, Fujitsu, Hulic Property Solution
Kao, Kirin Brewery, Konica Minolta, Marui Group, Mitsubishi Estate, Mitsui Sumitomo Insurance
Murata Manufacturing, Ricoh, Seiko Epson, Sekisui House, Seven & i Holdings, Sony Group
Unilever Japan
and others (27 in total, only names that can be disclosed are listed in alphabetical order)

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10 major issues and 5 recommendations

- Issues related to corporate PPAs
 1. It takes a lot of time and effort to conclude a contract.
 2. Suitable sites for construction of power generation facilities are limited.
 3. Unable to obtain cooperation from suppliers. (for physical PPAs)
 4. Accounting treatment is not defined. (for virtual PPA)

- Issues related to electricity procurement overall
 5. Limited means of procuring additional electricity.
 6. Supply of electricity other than solar power is not increasing.
 7. Non-fossil Certificate system is complicated and not easy to use.
 8. Growing concerns about environmental impact and human rights issues.
 9. Competitiveness of new suppliers is declining.
 10. Frequent changes in domestic and international systems.

- Recommendations (to the government and electricity suppliers)
 1. Develop and publish guidelines for corporate PPAs.
 2. Promote development of renewable electricity with additionality.
 3. Improve the Non-fossil Certificate system in line with international requirements.
 4. Establish fair playing fields for electricity suppliers.
 5. Enhance domestic development of renewable energy-related technologies.

The importance of the above issues and recommendations are explained more specifically on the following pages.

[Supplemental Explanation]
Major Issues Regarding the Use of Renewable Electricity

● **Issues Related to Corporate PPAs**

Corporate PPAs are a growing method for companies to purchase renewable electricity in many countries around the world. Corporate PPAs allow companies to purchase power from newly constructed renewable energy generation facilities under long-term contracts. By building new renewable electricity generation facilities, companies can contribute to replacing thermal power generation by fossil fuels, thereby reducing CO₂ (carbon dioxide) emissions associated with power generation. As an effective means of promoting the decarbonization of electric power, an increasing number of companies in Japan are adopting this method. However, several issues remain in its implementation.

1. It takes a lot of time and effort to conclude a contract.

Since corporate PPA is a new method, the contracting method between the electricity purchaser and supplier has not yet been established. The following issues exist, and it is time-consuming and labor-intensive to conclude a contract.

- No standardized contract templates.
- Hard to evaluate the appropriateness of the unit price to be contracted.
- Difficult to obtain internal approval for long-term contracts.
- Few means to find developers.

2. Suitable sites for construction of power generation facilities are limited.

The basic requirement for corporate PPAs is to build new renewable energy generation facilities, but various regulations and grid connection issues limit the number of suitable sites where new facilities can be built.

- Difficult to obtain permission for conversion to agricultural land or development of forest land.
- Many locations cannot be connected to the grid.
- Difficulty in using power generation facilities in other areas.

3. Unable to obtain cooperation from suppliers. (for physical PPA*)

* Physical PPA: purchase of electricity and environmental value (no CO₂ emissions etc.) as a set.

When concluding a Physical PPA, which is one of the contract types of the corporate PPA, the customer may not be able to receive services from the retailer from whom the customer had previously purchased electricity.

- Unable to cover the electricity shortage under the physical PPA ("Partial supply").
- Unable to receive conventional discount programs ("Electric kitchen discount" etc.).

4. Accounting treatment is not defined. (for virtual PPA**).

**Virtual PPA: purchase of only environmental value (electricity is sold on the wholesale market).

In a virtual PPA, the cost for the purchaser fluctuates according to the wholesale market price. Although it has equivalent characteristics to financial instruments, the accounting treatment is not yet defined specifically.

- No appropriate accounting and taxation method.
- Difficult to predict future market prices for assessing the cost fluctuation risk.
- No clear guidelines under the Commodity Derivatives Act.

● Issues related to electricity procurement overall

There are other important issues for procuring renewable electricity. In Japan, new power generation facilities have not increased much, so the power supply with additionality is low. Most of the new facilities are by solar, and electricity from other generation methods, such as wind power, is expensive. In addition, complicated procedures for environmental assessments, difficulty in using Non-fossil Certificates to trade environmental values, and the declining competitiveness of new suppliers are hindering the increased use of renewable electricity.

5. Limited means of procuring additional electricity.

Since demand cannot be met with the electricity secured through on-site generation and corporate PPAs, it is necessary to purchase renewable electricity with additionality from retailers.

- Regional utilities do not offer affordable green products with additionality.
- Prices for green products are usually high due to low supply (concerns for the rise in the future).
- Difficult to make a long-term purchase plan for additional electricity.
- On the other hand, it is important to maintain old facilities supplying renewable electricity.

6. Supply of electricity other than solar power is not increasing.

In Japan, due to the high generation cost for wind and other energy sources, affordable renewable electricity especially with additionality is limited to solar power.

- Generation cost of biomass and other technologies providing electricity stable is high.
- Generation amount from geothermal and small hydro is low for abundant domestic resources.
- High dependence on foreign technologies (domestic technology development lagging behind).
- Difficult to switch to renewable fuels for co-generation (combined heat and power supply).

7. Non-fossil Certificate system is complicated and not easy to use.

Non-fossil Certificates (NFCs) has become the standard method of proving the use of renewable electricity in Japan. The system is complicated and difficult to use compared to certificates in other major countries, lagging in trading methods and information disclosure.

- FIT NFCs can be purchased by consumers only at the auctions four times a year.
- Minimum price can be raised by the government (unpredictable for subsequent years).
- Attribute information (generation technology, fuel type, operation start date etc.) is missing at the time of issuance.
- It takes time (6 months or so) from the purchase to the completion of attribute allocation.
- Validity period is limited to the fiscal year (difficult to adjust the purchase amount).

8. Growing concerns about environmental impact and human rights issues.

The construction of power generation facilities may have a negative impact on the surrounding environment and landscape, while human rights issues have been raised with respect to foreign-made solar panels and biofuels. In some cases, environmental assessments have made it difficult to construct new power generation facilities.

- Social risks for corporate energy buyers with environmental and human rights issues.
- Environmental assessments are complex, and construction is time-consuming and costly.
- No certification system for sustainability (especially for hydro and biomass).

9. Competitiveness of new suppliers is declining.

There are high expectations for new suppliers competing with the regional utilities to increase the choice of electricity. However, many new suppliers have failed in the business, and price competition is not progressing.

- The number of new suppliers is decreasing (regional utilities is becoming more dominant).
- Distrust in the national system (a fair competitive environment has not been established).
- Large price fluctuations in the wholesale market (affecting electricity procurement costs).

10. Frequent changes in domestic and international systems.

The systems related to renewable electricity are complex and subject to frequent changes both domestically and internationally, making it difficult to plan procurement for the long term. Although system changes are necessary depending on the situation, there are cases corporates cannot assume, and it is difficult to deal with them.

- In Japan, Feed-in Tariff and Feed-in-Premium programs coexist (various differences).
- Technical criteria for renewable electricity by the RE100 change periodically.

[Supplemental Explanation]

Recommendations to the government and electricity suppliers

As companies expand the use of renewable electricity, the most important issues are related to corporate PPAs and the procurement of electricity with additionality. In addition, reform of the Non-fossil Certificate system, fair competition in the electricity market, and domestic technology development are also essential to solving the issues. The government should execute revised policies and electricity suppliers are required to implement solutions quickly. In formulating and implementing the policies, we call for an integrated approach beyond the boundaries between ministries and agencies, with METI (Ministry of Economy, Trade and Industry) and MOE (Ministry of Environment) playing a central role.

1. Develop and publish guidelines for corporate PPAs.

Corporate PPAs are effective as a means of procuring renewable electricity, but there are various issues that need to be addressed before contracts are concluded. The government can promote corporate PPAs nationwide by developing and publishing guidelines for corporate energy users and electricity suppliers. The guidelines should include the following.

- Process and items to be considered before concluding a contract
- Methods for calculating the contract price and evaluating its appropriateness
- Risks and solutions for long-term contracts
- Guidelines for electricity suppliers (execution of partial supply etc.)
- Scope of legal systems and points to note (Electricity Business Act etc.)
- Accounting and taxation methods and points to note (for both domestic and international)
- Standard contract items (contract templates)

2. Promote development of renewable electricity with additionality.

Rapid implementation of the following measures by the government and electricity suppliers will accelerate the development of renewable electricity generation facilities and provide electricity with additionality available to many corporates.

- Expanding suitable land through deregulation (flexible application of the related laws).
- Promoting offshore wind development in the Exclusive Economic Zones.
- Improving grid connection (network enhancement, revising guidelines for grid operators)
- Reduction of curtailment (more accurate supply-demand forecasting etc.)
- Optimizing the procedure of environmental assessments.
- Expanding green products with additionality (by new guidelines for suppliers)
- Introducing a labeling system to evaluate and prove additionality and environmental impact.
- Exempting renewable surcharges for corporate PPAs.

3. Improve the Non-fossil Certificate system in line with international requirements.

Certifying the environmental values (sustainable energy sources, no carbon emissions, etc.) of renewable electricity through certificates is widely used in countries around the world. In Japan, Non-fossil Certificates are used as the standard, but there are many issues compared with the systems in other countries. The following issues need to be improved.

- Tracking (all the certificates should have attribute information at the time of issuance).
- Trading (new methods other than the auctions 4 times a year).
- Transaction prices (abolishing the minimum price, allowing each certificate to set its own price)
- Restrictions on purchasers (all the certificates should be purchased by any type of business).
- Expiration dates (relaxing the restriction from the same fiscal year to an appropriate period)

4. Establish fair playing fields for electricity suppliers.

It is essential to create an environment where many suppliers can compete fairly so that corporates can purchase renewable electricity at a fair price. The following actions are required.

- Fair competitive environment between traditional utilities and new suppliers.
- Transparency of the wholesale market transactions (monitoring internal transactions etc.)
- Supporting measures for new suppliers (for spike of the market price etc.).

5. Enhance domestic development of renewable energy-related technologies.

Most of renewable electricity at low cost in Japan is currently solar power. It is necessary to enhance domestic technology development and manufacturing capacity to ensure a stable and low-cost supply of renewable electricity from wind power and other energy sources.

- Developing power generation technologies suitable for Japan (floating offshore wind etc.)
- Reducing generation cost of small hydro and geothermal with expanding appropriate locations.
- Technologies to reduce environmental impacts of hydro and biomass power generation.
- Improving battery technologies and reducing the installation cost.
- Establishing supply chains independent of overseas suppliers (by alternative technologies etc.)
- Cultivating local industries in cooperation with local governments (incl. industry transitions).