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Forecasting PV Installed Capacity in Japan toward FY 2030/2050 (2019 - 2020 Edition)

**December 2019
RTS Corporation**

Highlights of “Forecasting PV Installed Capacity in Japan toward FY 2030/2050”

- ✓ **Forecast of PV installed capacity in Japan based on the Fifth Strategic Energy Plan which positions renewable energy as a mainstream power source, as well as the global trends of PV power generation**

As a result, the Japanese PV market with 150 GW installation with high feasibility was forecast, largely exceeding the “energy mix” estimated by the Japanese government

- ✓ **Forecast of short- to mid-term PV installed capacity for the period from FY 2020 to FY 2030**

Forecast was made based on the accurate analysis of developments in the FIT program, PV system in which supply and demand are integrated (supply/ demand integrated PV system) and the electricity system reform, etc.

- ✓ **Long-term forecast of PV installed capacity for the period from FY 2030 to FY 2050**

Forecast of PV installed capacity was made by assuming global energy trends, development of energy management and the image of smart society in Japan

- ✓ **Forecast of the market trends of storage batteries related to PV (price/ installed capacity)**

Forecast of price and installed capacity of storage batteries (mainly Li-ion rechargeable batteries) introduced following the termination of the FIT program and the growth of the supply/ demand integrated market was made

- ✓ **Forecast of the trends of the PV market by capacity range (price/ installed capacity)**

Forecast of price and installed capacity was made by capacity range(capacity categories) of PV system

- ✓ **Forecast of PV installed capacity by service area of electric company**

Forecast of PV installed capacity by service area of electric company was made considering the relationship with demands by area

- ✓ **Forecast of PV installed capacity by application**

Indicators to understand the future PV applications are presented by categorizing PV systems into ground-mounted and rooftop systems

- ✓ **POST-FIT business models**

Business models which are assumed to emerge after the FIT program are presented

Introduction

In the Fifth Strategic Energy Plan formulated in 2018, a statement of “making renewable energy a mainstream power source” is included for the first time and the direction of PV to assume part of the responsibility for energy supply is clarified. The Feed-in Tariff (FIT) program which started in FY 2012 has contributed to the rapid launch of the industrial PV market mainly based on the ground-mounted PV power plants in addition to the previously dominating residential PV market. The Ministry of Economy, Trades and Industry (METI) implemented revisions of the FIT program to take measures against various distortions which were caused by rapid expansion of the market. Most recently, an interim report of the Subcommittee for Large-volume Introduction of Renewable Energy and Next Generation Electricity Network was made and the direction which PV should move towards was presented.

In the industry, Zero-Yen installation business based on the third-party ownership model started to develop as a post-FIT countermeasure to further disseminate residential/ industrial PV systems whose prices dropped to the affordable level and additional expansion is expected. Besides, users such as companies and general consumers recognize “PV” as the “cheapest energy” in the future and a reasonable energy source which has resilience such as disaster prevention and short lead time for construction/ start of operation and started to take the initiative in introducing PV systems. Obviously, such movements are boosted by the international efforts for the Sustainable Development Goals (SDGs) and RE100 initiative (for 100 % renewable energy) which is a part of actions to achieve the SDGs, etc.

Based on these situations, as well as forecasting annual and cumulative PV installed capacity taking into account of the social backgrounds and system cost reduction, etc. toward FY 2030, a specific road to achieve “150 GW PV installation by FY 2030,” which RTS Corporation has been continuously stated, is presented. Moreover, consideration was given so that the forecasts work as a key to future planning by presenting the image of PV installation toward FY 2050.

We hope that this report would contribute to further dissemination of PV power generation in Japan under sound market competitions, by overcoming various challenges we face.

October 2019

Osamu Ikki, CEO, RTS Corporation

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Unit: GW (AC-based)

