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In Japan, the rule of RPS, Renewable Portfolio Standard, was introduced in 2003 to oblige the introduction of renewable energy to all utility companies. Since then, renewable energy was shared up gradually and became two folds in 2010 compared with the 2003, whose amount is 10 billion kWh.

But, it is too short to satisfy the introduction because it is only one percent of total utility resource composition.the reason why is very clear that it is very expensive. The renewable energy has a good features not only as fuel for energy supply but also the effect for CO2 reduction. We believe it should be further disseminated.

The photovoltaic market in our country is concentrated to the installation to the individual house, which was summed 0.9 million houses with 80% share of photovoltaic product. To accelerate more, the effort of cost reduction, development of new system combined with utility battery, and various idea involvement are required. As of mega-solar, this year must be initial year of the business since almost all of them were produced for the PR or CSR purpose of enterprises so far. Further cultivation area is to develop the multi-resident building like mansion, big apartment, buildings including public facilities, these of which more than 10kW at least is expected individually.

Regarding wind turbine, the 479 business sites have been deployed all over Japan now. But its number is characterized including too many small scale sites, besides, because of natural condition like turbulent wind, thunder and storm to be very severe compared with Europe and US, many business management is struggling with the continuity of business. There is other issues in wind turbine business such as poor grid system in the suitable place for the wind turbine, installation restriction by laws like Natural Park law, Farmer Land law, Forest and Wood Reservation law, and so on. In order to crack these bottlenecks, it is indispensable to proceed three issues in parallel, which are resolution of grids, deregulation of current laws, and coming introduction of FIT, Feed in Tariff law.

As of geothermal, Japan is the third position all over the world in the storage amount of energy. But, reality is, only 10 percent at most is used actually. The largest reason why is almost all these resources is existed within natural park, where land cultivation is strictly restricted, and hot spring spa is normally engaged on business. The usage of hydraulic power, especially in mid to small scale hydro is a key how the suitable area is found out and precise investigation is required. On biomass, business model constitution is a key, which should be involved from stabilized resource supply to the distribution to end users. The model will be better to have some allowance.

In summary, deployment of renewable energy as usable resources needs FIT system of course, deregulation of existing laws, grid system review and enhancement. These strategic parallel tackling is needed and will be connected finding out the most suitable site for renewable energy development rationally. Technology development and research is also important to make well matching to the Japanese natural condition. Just only calling is meaningless. Action is really required. Please let us know your frank opinion or wish anytime.

Tokuya WADA, Senior Councilor, Climate Change Policy Division,

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I would like to speak about bright future of renewable energy. While it has a deficiency such as localized distribution and cost expensive, it has a great potentiality in our country. At first, it is important that everybody know it. We calculated ultimate potential which is excluded from all restricted conditions, then calculated capable introduction amount involving the items to be restricted. Saying about the restriction of wind, for example, it was assumed that the installation of wind turbine is impossible in the areas such as the land within natural park restricted by law, national reservation area for origin of natural plants and environment resources, special specified area for bird and animal reservation, designated area of world natural heritage, area of disaster prevention trees and forest, further, area in annual average wind velocity less than 5.5m/s, area in the altitude more than 1,000m.

The capable introduction amount was calculated as I stated, in which we further considered several scenarios in the difference of premise conditions. That is, FIT scenario with the installation cost as it has been, technology innovation scenario with drastic cost reduction, reference scenario applicable to the change of characterized items. As that result, even the case of FIT scenario mentioned first the capable potentiality of wind introduction is remarkably shown very big, 24GW to 140GW only in land area. The potential amount of wind is largely localized in Hokkaido and Tohoku, and a part of Kyushu.

On the other hand, localization of solar amount is not so big through the country compared with wind. The offshore wind is attractive energy resource onward. Ministry of Environment took initiative for the actual demonstration using 100kW wind turbine onto the bay of Goto Island, Kyushu. We expect gaining various data to be planned from there like influential data at typhoon, coordination way with fishery union, ideas for environment assessment. These are keywords of our challenge.

Small hydraulic power is also effective so, so. However, we are considering geothermal energy should be run on the track. The most important thing on geothermal is how to formulate the consensus between local resident, local government, and developer. This is more important than the relaxation of National Park law. Almost case is, the final grant of boring or land developing start is grasped in local authority.
In Fukushima, geothermal development has been planned as one of activation plan from 3.11 disaster, so, Ministry of Environment also plans backup keeping the connection with local authority,

The other challenges are, studying on wind turbine installation what method is the best to shorten the environment assessment period before its installation , which is newly introduced after FIT introduction, as of geothermal, how to make a rational system to build common consensus with hot spring business league. If the budget is allowed, we consider to have challenge to battery technology and development.

In maintaining good coordination with Ministry of Economy, Trade and Industry, Ministry of Land, Infrastucture and Transport, and other related ministry, we sincerely consider enforcing to develop the self-control and distributed energy system. Renewable energy has been developed in origin as energy for global warming measure tool, but after the 3.11 disaster it turned to indispensable energy in life. With this intent, if Japanese industry and market are deployed and make a growth, I feel it is wonderful.