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In October 2021, a new Strategic Energy Plan targeting fy 2030 was announced in Japan, showing the government's intention to further interconnect and utilize renewable energy. Prior to that, Green Growth Strategy Through Achieving Carbon Neutrality in 2050 was shown in December 2020. Thus, it is expected that the further introduction and expansion of renewable energy will continue in Japan with various support from the government.

Today, the collateral for demand side control response relies only on financial penalty in Japan. In other words, if resources respond correctly to the system operator's require, the fee will be paid to the resource aggregator, but if the response amount is not sufficient to the requirement, a penalty exceeding the fee will be incurred and the resource aggregator will lose money.

From the system side, connection between the grid operator and the resource aggregator is established with command and monitoring system, but each resource is not linked to the centralized system, in Japan today.

So there is no mechanism for grasping a truly response available amount of each resource in real time nor what kind of resources with response characteristic are available at dispatching timing.

For these reason, operation staff is forced to adjust supply and demand without conviction whether the demand is really responded correctly. In other words, there is the lack of clear visibility of the demand-side resources including demand-side generation.

In order to respond to the expansion of the introduction of renewable energy, which is a variable power source, it is necessary to sophisticate dispatching of supply and demand, and we believe that one of the sophistication is the utilization of demand-side resources, including the use as reserve or regulation power.

So that grid operators can reliably use demand-side resources as reserve or regulation power, developing the control platform for demand-side resources or the connection codes for data linking with demand-side resources is urgently needed.

That's because the demand-side resources are owned by each consumer, and it is necessary to spend replacing duration for equipment in order for each resource to have the necessary functions.

In government strategy, electrification progresses during the 2030s. Before that it is necessary to prepare for the situation where demand-side control is indispensable by stipulating a connection code and incorporating it into the platform.

Though specific discussion what should be specified in the connection code is not begun, at least the following contents would be necessary from the point of the system operator.

How to connect to the platform?

Which information should be shared?

How to respond to the control signal?

How to calculate flexibility ability?