

Questions and Answers at Business Unit IR Meeting 2022 Part 3 (Energy Innovation Initiative)

[Date] December 8th, 2022, 3:00pm - 3:50pm

[Speaker] **Shingo Ueno** Executive Vice President, Head of Energy Innovation Initiative

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<Questioner 1>

With regards to the plan for the invested capital in the next generation energy sector, the amount of which you aim for around JPY1.5 trillion, is that to be invested independently by EII, or through company-wide perspective including other Business Units?

<Kitajima>

Depending on the area, EII jointly develop such as on renewable energy area where Infrastructure Business Unit has been taking the initiative and on CCUS & ammonia area. But in general, the areas other than renewable energy will be handled mainly by EII.

As for forest business, we have been engaged in logs & lumber business for more than 30 years and have a fairly large forest asset overseas. At the start, our business was based on the concept of acquiring upstream interests in timber, but we are reviewing the value of forest assets from a variety of perspectives including the value of absorbing CO₂, in the future, we would like to increase our assets. Specifically, we would like to look at New Zealand, where we already have assets, as well as new markets in Australia and in the US.

Additionally, regarding the next-generation bioenergy, we believe that this one will be launched earlier in terms of time frame than hydrogen and ammonia. In particular, in fuels, biomass-related bioethanol and SAF will start up around 2030, and will expand in earnest after 2030, so we are already preparing specific projects to build up a solid footprint by 2030.

As for CCUS/CCS, focusing on how to capture carbon in a closed circuit, we have already issued several press releases on specific projects in the UK, and we are now working on a number of specific projects as well as in the US. We are thinking of providing our stakeholders with the opportunity to increase profitability by capturing carbon in these areas and reusing it in some cases in this closed circuit, or lowering environmental costs as a business.

<Questioner 1>

Regarding the capacity expansion from 6 MW to 100 MW in the large-scale energy storage business, which I think of quite large scaling up, let me ask some items: the remaining capacity for energy storage and the profitability after considering the cost of reuse when the used EV batteries are used for large batteries, and the feasibility of scaling up the capacity to 100 MW.

<Fujita>

We launched a JV with Nissan called 4R Energy in 2010, and since 2013(then), we have been continuing the demonstration of energy storage business using used 4R batteries. And after that, we have been conducting various demonstration in Koshikishima, Nagasaki, Oita, and Namie.

If you take each used automotive battery, it should deteriorate a bit. Therefore, the storage capacity is less than that of a new one. However, through those demonstration, we have verified that when these used batteries are lined up in a row, they can be used as energy storage systems that are exactly the same as new ones.

Based on this, we are currently constructing a pilot project in Chitose, Hokkaido, that will scale up the technology used in the demonstration to 6 MW of storage batteries. We believe that this will be the first case in Japan where we will be able to link up with the grid ahead of other companies.

In this context, we are trying to verify monetization in the capacity market, or the balancing market, which is a new adjustment power market. If this monetization is as we have hypothesized, we will increase the capacity to 100 MW over the next three years, during the next mid-term plan. We are now in the process of creating an investment plan within the EII.

<Questioner 1>

By linking up with the grid, do you mean that you are aiming for monetization through the optimization of combination of storing electricity and selling it when the market is high, and buying it when the market is low?

<Fujita>

The monetization mechanism is as you say. However, I believe that one of the causes of the fluctuations in the balancing market is still the massive introduction of renewable energy. For example, solar power is generated during the daytime, so electricity is cheaper during the daytime and more expensive in the evening after the sunset. Therefore, the monetization model of our energy storage business itself is to monetize through the market, but what this energy storage service contributes to is the expansion of the introduction of renewable energy in the region.

<Takayama>

After the verification including monetization of up to 6 MW at Chitose, is there any challenges you may need to address when scaling up to 100 MW in the next step including linking up with the grid?

<Fujita>

We believe we have already overcome the biggest challenge. The electricity business includes the generation, transmission or distribution, and retail of electricity, but the storage of energy was not recognized as part of the electricity business at the time of Koshikishima. However, the Electricity Business Act was amended this year, which will allow the storage of electricity to be an electricity business from next year, starting in 2023, and we will finally be able to develop this as a business on the mainland. We have been lobbying hard and have finally overcome this biggest institutional challenge.

In addition, we will be examining in the market from FY2024 onward when to charge and discharge storage batteries in a fluctuating market. This will be our future know-how. In other words, batteries have limited capacity, so they need to be charged at the lowest possible price and discharged at the highest possible price. Optimizing this will be the key to monetization in the future. Regarding this point, SCSK, a group company, is currently working to optimize this using the AI technology.

And, in terms of the technical challenges, basically we have already solved them with 6 MW initiatives, and we only have to put side by side the systems created with 6 MW. However, this grid storage business is now a huge topic of conversation in the industry, especially in Hokkaido, which is an area that is currently lacking in adjustment power, there is now a rush of energy storage businesses. While in this context, we have already secured about 50 MW of grid-access, and we are almost ready for the remaining 50 MW, so we are in a very good position to verify and scale up monetization in the future market development.

<Questioner 1>

Are you in a very advantageous position where your company can easily collect storage batteries through 4R Energy, at least in terms of acquiring used EV batteries?

<Fujita>

As for the reuse, as you mentioned, we receive priority supply from 4R Energy.

<Questioner 2>

Are there any conflicts with the business units since the establishment of EII, and what are the benefits of the establishment? What kind of response are you getting after a year has passed?

<Ueno>

Historically, I believe, in Sumitomo Corporation, the barriers between organizations are quite low and we have had a strong sense of cooperation and consultation rather than competition.

Basically, with the idea of EII, we are trying to quantitatively measure profitability and the degree of contribution, so, we do not expect any fight over to occur, and so far, there has been none.

While the renewable energy unit remains in Infrastructure Business Unit, back when EII was established, last April, because of the low barriers between the Units, we concluded that we would not have any problem within the cooperation. And we have actually seen tremendous progress being made in collaboration, and I believe it is functioning well at the moment.

<Questioner 2>

Please let us know a development outlook of hydrogen.

<Kitajima>

The hydrogen project, as explained today is in the form of local production for local consumption until the middle of Phase 1 and Phase 2, so it is not going to start on such a large scale. On the other hand, if we move into Phase 3, where the hydrogen produced here will be exported to Japan etc., for example, the scale will be quite large.

We are now thinking that there is still a price gap, and we need to determine how we can fill this gap and what carriers can withstand this long-distance transportation.

Based on the Japanese government's projections for the introduction and diffusion rate of hydrogen in 2030, we believe that it is around 2030 that a mass value chain will be firmly in place.

But if we actually start moving things in 2030, of course the FID will have to be made by 2026 to 2027. If we backcast from there, due diligence and FEED will take place in 2024 to 2025, which is surprisingly little time.

Therefore, for this project, we would rather work on verifying the actual operation at the desktop to see if we can achieve stable operation using unstable renewable energy sources. In the case of local production for local consumption, based on the anchor customer like Rio Tinto, we will uncover local demand, which I believe will be extremely important.

It's not enough to just have anchor customers. As Mr. Ueno mentioned earlier in his explanation, Gladstone itself has a very strong initiative to change from being a fossil fuel-centered city. We believe that developing a scheme that will generate demand in these areas will be extremely useful in expanding the project to other regions overseas that meet similar conditions.

<Ueno>

In our hydrogen projects, some are local production for local consumption, of course, and others are for large-scale production and transportation. In a sense, we are all running at the same time now. In Australia, we have another big project here. This is the blue hydrogen project, called HESC. This project is to convert hydrogen from lignite coal into liquefied hydrogen and bring it to Japan on a ship owned by Kawasaki Heavy Industries.

We are also simultaneously working on the hydrogen production project in the state of Sarawak in Malaysia, using green power from hydropower switching to MCH (Methyl Cyclo Hexane: one of the hydrogen carrier) with ENEOS's technology to transport to Japan. We are simultaneously working on various projects beside this.

We are thinking of, looking at the whole picture with the overview of the energy system, and continuing to take a down-to-earth approach.

<Kitajima>

We will not look at hydrogen, biomass, and energy storage in isolation, but rather, as Mr. Ueno just mentioned, from an overview, we will firmly invest looking ahead to 10-year or 20-year, not only in individual Business Lines, but also in EII, while carefully considering the characteristics of each of them. We would like to build the next generation of our company's business in a way that allows us to see how we can successfully move on from the obsolescence of technology and saturation of the market as a whole.

<Questioner 3>

You mentioned a scale of JPY1.5 trillion for the total investment capital, and I would like to confirm your thinking about what your core business model is.

<Kitajima>

It will inevitably vary from case to case and character to character. We do not believe that we must always take the majority or, conversely, that we must never take the majority.

I still think it is quite difficult to do without a partner at all. We believe that the share will naturally vary depending on the role played by local governments and influential companies in the region, and the extent to which they are needed. In addition, we need to basically secure a solid off-take, and another point in the next generation energy is raw materials. We will secure this, and this will result in a move to bring in partners, for example, partners who have a solid supply of raw materials.

<Questioner 3>

Regarding the storage battery business, it would be very helpful if you could also explain what kind of partnership is more realistic.

<Kitajima>

The energy storage business has various income patterns. We will build up income in the capacity market and the supply-demand adjustment market, which will start in 2024.

Rather than simply buying because it is cheap or selling because it is expensive, we can mitigate risk by combining demand and supply forecasts.

In addition, as mentioned 100 MW as one of the assets, we will continue to add or subtract as we go along.

If we were able to grow to such a large scale, we believe that our operational and management know-how would be accumulated then. We would like to shift to energy services for the assets of other companies, so that we can create an asset-light, capital-efficient business as a result.

<Fujita>

Storage batteries can be used in many ways. Therefore, we would like to collaborate with Summit Energy's supply and demand adjustment. However, the system is just now being established, which means that it is still in its infancy. Up to the numbers, we are at the stage of proactively building assets.

In the next phase, we will first work with partners who are willing to take similar risks for this asset investment. We would like to consider various profiles such as using finance and other developments once we are able to manage the risks to a certain degree, and we would like to proceed with this in stages.

<Questioner 3>

The map of the UK is shown in this business development area. Does this mean that such a prospect is now in sight?

<Fujita>

Yes, Japan's electricity system is based on the British system. In terms of the electricity storage market, they are probably five years ahead of the Japanese market, and we are thinking that if we can accumulate such know-how in Japan, we can bring it directly to the UK.

[END]