[English translation of the original Japanese]

Summary of Q&A session at the Panasonic Energy Tokushima Factory Tour
jointly hosted by BofA Securities Japan and Panasonic Group

This document summarizes the Q&A session with participating institutional investors during the site visit to Panasonic Energy's Tokushima Factory in fiscal year 2025.

[Date & Time] Friday, December 5, 2025

[Speakers] BofA Securities Japan
- Mikio Hirakawa, Research Analyst

Panasonic Energy Co., Ltd.
- Kazuo Tadanobu, President & CEO
- Takamasa Kawabe, Managing Executive Officer, Director of Energy Solutions Business Division (ESBD)
- Hiroshi Kato, Deputy Director of Energy Solutions Business Division (ESBD), Director of Energy Storage Systems Business Unit (ESS BU)

Q: Panasonic Energy has strengths in vertical integration. What is the difference compared to horizontal specialization-type manufacturers? Is it possible for competitors to shift to a vertically integrated model? Also, where does your confidence lie in maintaining a high market share going forward? In addition, please tell us about the components you manufacture in-house and the potential for expanding in-house production capability.

A: (Energy CEO, Tadanobu) Our company is characterized by providing complete and comprehensive solutions to customers' challenges. Customer challenges vary with the evolution of data centers and the generations of GPUs. Accordingly, our business model involves proposing optimal specifications, materializing them with customer agreement, and building energy storage systems. We have an advantage in ensuring safety and reliability, which is difficult to achieve with standalone cells or standalone DC-DC converters. Leveraging the expertise unique to a battery manufacturer, we provide comprehensive support from material reliability and thermal countermeasures to algorithm design, which makes our vertical integration highly valued. However, we do not manufacture everything in-house. We intend to internalize areas with high added value while adopting a partner strategy for assembly processes.

A: (Deputy Director of ESBD, Kato) We provide energy storage systems with a data center operator's perspective, engaging in consultation from the earliest stage of the process. Based on the customer's platform strategy, we define functional requirements, translate them into system and module specifications, and further break them down into component specifications. We consistently manage all generations and platforms, securing first-mover advantages. Continuing this process is the source of our competitive edge.

Q: Do customer system configurations differ between ASIC and GPU? Also, does the relationship with customers remain unchanged?

A: (Energy CEO, Tadanobu) NVIDIA GPUs continue to evolve, but power consumption is becoming a challenge. On the other hand, ASICs are generally considered to have high power efficiency and better overall balance. In our view, GPUs are extremely good as learning platforms and have accumulated vast amounts of data. However, as AI advances, computation through learning and inference becomes important, and there is a trend toward performing inference processing with ASICs while balancing the roles of GPUs and ASICs on the server side to control overall power consumption. The ratio may change, but our business is in the area equivalent to the "heart," which is power supply, so even if the required specifications change somewhat, the business foundation will not change significantly. Currently, we are also working to support ASIC platform with customers.

A: (Deputy Director of ESBD, Kato) We understand your concern that ASICs may reduce power consumption and thus decrease our business opportunities. However, whether GPU or ASIC, backup functions and peak shaving are always necessary. Even for inference ASICs, functions such as absorbing and suppressing load fluctuations with capacitors are indispensable, and we will continue to meet that demand. Therefore, we think demand and business opportunities will not

decrease. It is true that power consumption for some servers may decline, but power demand for AI servers for learning is increasing, and overall, we believe overall demand remains extremely high.

Q: Regarding the sales target of 800 billion yen for FY3/29 announced at IR Day, what will be the composition ratio between GPUs and ASICs?

A: (Energy CEO, Tadanobu) The composition ratio of GPUs and ASICs for the 800-billion-yen sales target is not clearly defined. Since customers do not provide us with a breakdown based on their strategies, the target sales figure is based on the total demand, including both categories.

Q: Panasonic Energy has an 80% share. What kind of companies are included in the remaining 20%?

A: (Deputy Director of ESBD, Kato) As the data center business is highly socially significant and serves as critical infrastructure, BCP (Business Continuity Planning) is strongly required by customers. Therefore, 100% monopoly by one company is not realistic.
In general, the share composition is roughly 7:2:1 (the first vendor holds about 70%, followed by 20% and 10%), and there are multiple competitors. We currently maintain a 70%–80% share. The reasons are that we achieve first launches for each generation platform on the functional side, securing first-mover advantages, and we have sufficient production and supply capabilities. For example, this business is expected to achieve a growth rate of 70% between FY3/25 and FY3/26, and there are only a limited number of companies capable of meeting such demand.

Q: Many companies are working on capacitors. What is Panasonic Energy's advantage?

A: (Energy CEO, Tadanobu) A capacitor is one category of device, but what we are developing is different from general capacitors. It needs to store a large amount of electricity, and in circuit design, it is necessary to prevent heat generation and damage caused by large currents, so our customers cannot use capacitors made by specialized manufacturers as they are. We are independently developing capacitors in collaboration with the Industry segment of the Panasonic Group, adopting new materials, and adding new specifications.

Q: Is your company independently developing a supercapacitor?

A: (Energy CEO, Tadanobu) In principle, it is a supercapacitor, but it is planned to be a product with originality. We are currently developing it so that it can be disclosed at some point next year.

Q: I understand that your supercapacitor was developed starting from customer needs. On the other hand, existing capacitor manufacturers start from components and then follow your lead, aligning their functions. Is that understanding correct?

A: (Deputy Director of ESBD, Kato) That is correct. If they are based on existing products, they may not meet the specifications required by the data center platform. Since we participate from the upstream process and define specifications, we can provide products that fully meet customer needs. For this reason, we have received supply requests from multiple customers.

Q: Can you maintain your advantage over competitors entering the BBU market from power supply manufacturers?

A: (Deputy Director of ESBD, Kato) The most important thing is obtaining safety certifications. Power supply manufacturers have strengths in power technology, but since batteries involve chemical reactions, they may be difficult to control and require advanced expertise. On the other hand, our company has specialized in lithium-ion batteries for over 30 years and is thoroughly familiar with their behavior. Being able to anticipate and respond to these issues is highly valued by customers, and we currently maintain about 70%–80% market share.

Q: What is your advantage compared to manufacturers managing LFP cells?

A: (Deputy Director of ESBD, Kato) LFP is an excellent battery, but its voltage is low and its reactivity is also low, so there are significant constraints in delivering the performance customers require within limited space. Therefore, adoption of LFP under the strict conditions inside data centers seems difficult. On the other hand, LFP is widely adopted for large-scale power applications on the grid side. Panasonic Energy's cylindrical cells demonstrate strength in distributed power supply areas where space is limited and efficiency is required, resulting in a division where centralized power uses LFP and distributed power uses cylindrical cell type.

Q: For data center applications, is the greatest constraint on adoption the issue of space?

A: (Deputy Director of ESBD, Kato) At present, that is correct. However, constraint conditions are not fixed, and they will not remain the same for 10 years. We believe they will continue to change. We are proactively addressing the next constraint conditions through our relationships with customers.

Q: Is there a possibility that competitors with cylindrical cell technology will newly enter this business?

A: (Deputy Director of ESBD, Kato) The BBU platform for data centers is an environment with extremely strict space constraints. Cylindrical cells are easy to connect in parallel and series, and their form factor is easy to adjust, making them well-suited for data centers. Therefore, cylindrical cells have certain advantages.

In our discussions with customers' engineering leaders, the first thing we consider is not the detailed specifications of the cells but the functional requirements. We first define the functions, then formulate system specifications, and finally decide cell specifications. In this way, we are the only company in the data center industry that can provide vertically integrated solutions.

Q: It is said that the current roadmap for the data center platform heavily relies on the premise of GPU usage and addressing the increasing energy demand. However, technologies such as TPU and photonic computing may become alternative solutions. If these become widespread, energy requirements will change, and future BBU requirements will also differ significantly. In that case, how can you ensure profit for the 800-billion-yen sales target announced at IR Day through contracts and pricing?

A: (Deputy Director of ESBD, Kato) ASICs and TPUs tend to consume less power compared to NVIDIA GPUs. However, even with TPUs, backup to prevent outages and peak shaving for overall data center power control are essential. Furthermore, in the future, ASICs and TPUs will also require functions to absorb power fluctuations. Therefore, regardless of power consumption levels, these functional requirements remain similar, and we believe that demand will continue to grow.

Q: If voltage rises to 400V or 800V, how will it impact profitability per rack and business opportunities ?

A: (Energy CEO, Tadanobu) As explained at IR Day, we do not intend to reduce profitability even if configurations change. Rather, we are considering a strategy to secure volume while improving both quantity and quality. Even as higher voltage progresses, discussions with customers are moving toward maintaining profitability in the solution areas we propose. We are considering a strategy to secure volume while not investing uniformly in all areas, but instead improving area and quality.

Also, the 7:2:1 composition ratio (share structure where the first vendor holds 70%, followed by 20% and 10%) is important from an efficiency perspective. In data center cell production, as scale expands, the proportion of material costs tends to increase, so by standardizing with the automotive business, we will achieve large-scale procurement and reduce material costs. We leverage the strength of having both businesses, paying attention to geopolitical risks and trade policies, and building a system to minimize negative impacts through the capabilities of our energy storage systems and understanding of customers' challenges. Based on this, we are considering business development including factories.

A: (Deputy Director of ESBD, Kato) Additionally, what is important is how to anticipate constraint conditions. Currently, there are dimensional constraints on data center platforms, but when voltage rises to ±400V or 800V, it will lead to changes in battery installation locations, and new constraint conditions will arise. We plan to address the anticipated conditions associated with higher voltage. Of course, collaboration with partner companies is essential, and detailed discussions have already started. We are confident in this point and hope you will have high expectations.

Q: If batteries for energy storage systems are produced in Kansas, will they be eligible for IRA tax credit? Also, if eligible, wouldn't there be advantages to increasing production in the U.S.? Please explain the background for increasing production in Japan.

A: (Deputy Director of ESBD, Kato) Regarding IRA tax credit, it is not limited to EV applications. If certain capacity and production requirements in the U.S. are met, it will be eligible. Not all data center cells meet IRA requirements, but with future high-density developments, we believe the likelihood of eligibility is high.

A: (Energy CEO, Tadanobu) In Kansas, we already have buildings and equipment and are steadily preparing manufacturing operations. Once the necessary models and platforms clarify BBU specifications, we have a system in place to start production immediately.

Q: How will you manage business volatility going forward? If you build a factory and operate at full capacity, achieving an ROIC of over 20% may be possible. Is it possible to ensure stable performance amid fluctuations in customer demand as market expansion increases volatility?

A: (Energy CEO, Tadanobu) Our battery cell production lines for industrial and consumer applications are much smaller compared to those for automotive applications at Panasonic Energy. Additionally, the cell production lines for industrial and consumer applications are designed to efficiently handle small-lot, multi-product production and are capable of responding to increasing demand from data centers. If cells can be mass-produced at giga scale, it will be more efficient to use automotive lines. We have two concepts of lines within Panasonic Energy. This time, we plan to modify some existing automotive lines and fully operate conventional data center lines. Data center lines are smaller in scale than automotive applications and relatively easy to switch. Even if market fluctuations reduce demand, we can switch the output, so the risk of assets becoming wasted is low. Investment for increasing module production is smaller than for cell production, and by using small robots, even if demand halves, we will keep the impact on business minimal.

A: (Director of ESBD, Kawabe) Panasonic Energy's BBU has high scalability and the advantage of being able to adjust production according to circumstances. Also, the time required for preparation differs greatly between cell manufacturing lines and module manufacturing lines. Since cell manufacturing lines require significant time to ramp up, we will prioritize effectively utilizing existing assets rather than pursuing new investments. On the other hand, module lines can be built in a relatively short time and can be flexibly scaled down or rapidly launched according to demand changes. Considering these time differences, we will establish a business structure that can adjust dynamically while balancing both lines.

Q: What is the replacement cycle for BBUs?

A: (Deputy Director of ESBD, Kato) The initial replacement cycle is estimated to be approximately seven years; however, with rising power consumption, it is now expected to shorten to around four to five years. We believe this change is driven by the fact that batteries now serve not only as backup but also perform peak-shaving function.

Q: How do batteries for data centers differ from those for automobile and smartphone applications?

A: (Deputy Director of ESBD, Kato) Cells for automotive and data-center applications differ mainly in terms of energy density and power density. Automotive batteries prioritize high energy density to enable long-distance driving. In contrast, data center cells require high power density because they need to supply large amounts of power instantly. This is the essential difference between the two. From a chemical perspective, batteries for smartphones, EVs, and data centers are all the same type of lithium-ion battery. However, their sizes differ greatly. Smartphone batteries are very small, and laminated or prismatic shapes are common. The basic chemical composition and product type are the same, but the differences lie in shape and size, such as prismatic or cylindrical formats.

Q: When GPUs transition from Hopper to Rubin, will BBU replacement be necessary?

A: (Deputy Director of ESBD, Kato) Replacement is necessary based on BBU specifications. As GPUs evolve, higher power is required to support GPU boards and IT servers. Therefore, we continuously certify existing products and make improvements so they can manage higher output. In other words, BBUs are constantly evolving.

(End of Q&A session)

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