JFE Holdings, Inc.

Briefing on JFE Group's Electrical Steel Business Strategy
Summary of Q&A Session on October 24, 2024

Participant：
I understand that the recent global demand for Grain-Oriented electrical steel sheets (GO) have been expanding for high-end products and continuing to be sluggish for low-end products. I think there's probably a lot of investment in distribution grids in places like Europe and the demand for GO are very tight. How do you see your competitors in the global market or in India where GO are mostly imported? Since this is a growing market, I think competitors will move on as well. Please tell us about the superiority of your company's GO.

JFE：
For GO, we recognize that inquiries are very strong in the overall market, particularly in Europe and the United States, which are our company's strategic sales regions.
The reason for this is that, in addition to strong demand for electricity, demand for transformers is increasing due to the replacement of aging transformers, increasing demand for renewable energy, and the recent increase in the number of data centers.
In Europe and the United States, which are our strategic regions, we believe that we have been able to fully demonstrate our strength in the market for high-end products due to efficiency regulations.
On the other hand, the market for commodity-grade products is not that tight globally. I think it is related to capacity expansion in China.
Currently, GO are mostly imported in India, but we would like to establish a solid presence in this market by quickly establishing an integrated manufacturing system.
I don't think I have anything to say about the trends of other companies, but of course it is a promising market, so I think we have to keep a close eye on the trends of other companies.

Participant：
The production line for your company's top-grade Non-Oriented electrical steel sheets (NO) have finally started operation. Given that the electric vehicle (BEV) market is showing signs of stagnation, what is the supply and demand environment for NO? There is a movement for competitors to increase their capabilities of NO not only domestically but also globally. Please tell us about your company's superiority.

JFE：
The rapid growth in BEV has been decelerating, and the supply-demand situation is not as tight as expected.
However, there is no doubt that there is a large trend toward BEV over the long term. While BEV are slowing down, hybrids (HEV) and plug-in hybrids (PHV) are increasing. Therefore, the amount of NO used per vehicle is almost the same regardless of the growth in either category, and demand for NO is expected to be firm.
In addition, demand for NO is also increasing for data centers (*).
Currently, the “phase I” expansion facilities of NO have already started operation, but we would like to firmly capture demand in the high-end NO field, including not only xEVs but also data centers and other fields.
We think that the competitive environment for NO is even more severe than that for GO, but as demand grows steadily from now on, we believe that we can fully compete by leveraging our quality competitiveness, cost competitiveness, and global supply chain strengths.
(*) In addition to GO for transformers, demand for high-performance NO for cooling fan motors is also increasing for data centers.

Participant：
Could you explain your strategy for intellectual property, concerning technology transfer and technology sharing to the acquisition company in India?

JFE：
We manufacture both GO and NO in Japan using our company's unique technology.
We have a history of building a patent network not only in Japan but also in the regions where we may sell, and we believe that intellectual property rights are fully protected in the electrical steel sheets we manufacture.
We also believe that there will be no problem at all with the Indian JV (J2ES) established this year with JSW for the production of GO.
In addition, tkES India (tkESI), which will be acquired this time, is also manufactured using tkES's proprietary technology, and will continue to manufacture based on the technology, so we believe there will be no intellectual property problems.

Participant：
I think JFE is considering the expansion of green steel in Kurashiki by switching from a blast furnace to an electric furnace. Is it technically possible to manufacture electrical steel sheet with electric furnace steel? Also, do you have a strategy to add a green steel

brand or premium to electrical steel?

JFE：
We have already received inquiries for JGreeX from customers with high environmental awareness, especially in Europe and the United States, in the field of electrical steel sheets. We believe that it is necessary to manufacture electrical steel sheets in the large-scale electric furnace that we are planning to invest in Kurashiki.
As for this, I think many technological developments are still needed, and we are currently in the stage of research and development.
As an electric furnace is scheduled to start up in fiscal 2027, we will conduct R & D to make it possible to manufacture electrical steel sheets at the same time, and will also manufacture electrical steel sheets in the electrical furnace after the start of operation.

Participant：
In J2ES, your company provides technology and JSW provides sales channels. From the perspective of how to protect your company's electrical steel technology, please explain what extent you will intend to provide your technology.

JFE：
We believe that our mother mill is Kurashiki plant. We have decided to provide our technologies developed in Kurashiki and start a joint venture in India with JSW. Therefore, we intend to provide the technologies required in India. On top of that, from the perspective of preventing the leakage of our technology, we intend to protect our technology by securing it through solid contracts and intellectual property strategies.

Participant：
Regarding the amount of NO used per vehicle (basic unit), you explained that there is no big difference between BEV and HEV. Please explain the reason why the basic unit does not change despite the difference in battery output. Also, is it correct to understand that the added value of NO used for BEV and HEV is not so different?

JFE：
HEV require a motor for power generation in addition to a drive motor, so these two units are almost the same as BEV drive motors. We recognize that there is not much difference in the added value, that is, the required performance.

Participant：

Please tell us about the strengths of tkESI and its features as a factory. Also, I understand that you will continue to produce electrical steel sheets using tkES's proprietary technology. Can you tell me if you can produce high-grade products with low iron loss in GO using this technology? Also, after the JV with JSW goes into operation, will there be any difference between what is made in the JV and what is made in the tkESI factory?

JFE：
I cannot tell you about our manufacturing capabilities, etc., but we have a wide range of products from high-grade to middle-grade, and we recognize that we are a very capable company with a certain presence in the GO market.
Amidst this, we believe that the Indian market will see a significant increase in demand for top-grade products as efficiency regulations progress.
The main aim of J2ES is to target this market and capture the demand for high-end products, especially the top-grade.
On the other hand, tkESI can manufacture a wide range of products from top-grade to volume-zone. Demand for the commodity-grade is expected to increase sufficiently in the Indian market, so our goal is to become a GO manufacturer with a wide range of products from the top-grade to the volume-zone by combining J2ES and tkESI.

Participant：
You mentioned earlier that demand for commodity-grade products will also increase, but the graph at the bottom left of page 4 shows that commodity-grade products will not increase. Do you mean that among the high-grade products, those which are close to commodity-grade products will grow?

JFE：
Please understand that there are several grades in the high-grade zone, and the volume of products close to commodity-grade in it will increase.

Participant：
This time, the production capacity of GO in Indian and NO in Kurashiki in Japan has been increased, and the sales system has been established so that sales can be expanded in India. Please tell us if you have an image of the sales ratio of electrical steel sheets in your company by region in the future.

JFE：
There is a difference between "GO" and "NO," so I cannot give specific numbers, but I

believe that Japan, India, North America, and Europe are the four major regions we will focus on.

Participant：
Do not tkESI and J2ES manufacture NO? Also, please explain your strategy for developing NO business in India.

JFE：
Both tkESI and J2ES manufacture only GO. As for future development, we believe that demand for both GO and NO will still grow globally, so we would like to explore the possibilities of both. In India, NO is also a growing market, so we will carefully consider how we will respond in the next medium term.

Participant：
Regarding the base material, thyssenkrupp made a comment about the background of the sale of tkESI, such as "the competitiveness of tkESI was lowered by bringing the base material from Germany." Where will the base material be supplied from in the future? I understand that the company is only a downstream company, so please explain the supply chain of the base material.

JFE：
As for the base material supply, thyssenkrupp of Germany will continue to supply the base material as before. However, as you pointed out, we do not think that this type of business will continue for a long time, so we will take measures to supply base materials from JSW as soon as possible.

Participant：
Even though JFE acquired the downstream process through the acquisition of tkESI, the amount of investment in J2ES has not changed. Is J2ES an investment based on the premise of supplying base material to tkESI without downstream process?

JFE：
J2ES is also an investment in the downstream process of manufacturing electrical steel sheets. Regardless of the acquisition of tkESI, we will continue as planned.

Participant：
Will JV borrow or will your company contribute to finance the tkESI acquisition?

JFE：
We plan to raise funds through both equity investment from the parent company and loans from financial institutions.

Participant：
Please tell us about the production volume and sales forecast of electrical steel sheet and the contribution to CO_2 reduction.

JFE：
Although we cannot disclose production volumes or sales forecasts, we have included historical sales figures for tkESI in the material of today's briefing.
In addition, we estimate that excluding tkESI, J2ES and Kurashiki's capacity expansion of electrical steel sheets will contribute to an annual reduction of approximately 4.8 million tons of CO_2.

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