

EBARA CORPORATION EBARA IR Day 2022 Q&A
Q&A during earnings conference held July 8, 2022

[Session 1: Initiatives for Decarbonization in the Compressor & Turbine Business]

Participant 1: First, since we are here, could you tell us about the market environment for compressors for ethylene plants, where you are strongest, and what the current situation is like? I have often heard that competition in the ethylene plant field is still tough, with companies that were originally strong in the upstream sector moving down to the downstream sector. I would like you to share your view on the most current competition in the market.

On the other hand, in your presentation, you mentioned that your company has a 50% share of the ethylene plant market, which is quite high, but if your market share is this high, is there any potential to improve profitability in the main body, or is it still difficult? If you could provide any comments on these, I would appreciate it.

Miyaki: Regarding the market environment for ethylene plants, ethylene demand is supported over the long term by population growth and increasing living standards, and basically, the major trend is that ethylene demand remains strong. However, given the recent events around the world, companies and clients are still very cautious about investment decisions due to Russia's invasion of Ukraine and the recent rapid inflation. However, looking at a trend line, we believe that demand for ethylene plants stays firm.

As for the competitive environment, companies that have traditionally been strong in the upstream or have been mainly active in the upstream, are still our competitors. The competitive situations that you described are here to stay. This is my answer to the first point in your question.

On the second point, regarding our product business and improvement of profitability. The current Medium-term Management Plan "E-Plan 2022" targets improving the profitability of the operation, especially the core hardware. In terms of financial figures, we expect to achieve business-wise ROIC, operating profit ratio, and other targets we set in E-Plan 2022 for this fiscal year. I believe we see positive effects in improving profitability due to the initiatives we have set forth.

However, as you pointed out, this is not the end of the story. As with profitability, we will continue to make constant efforts here in terms of price competitiveness as a company, or costs and profitability. In particular, as one of the E-Plan initiatives, we would like to continue to improve costs and profitability by procuring from low-cost countries or LCCs, such as China and India, and by strengthening our supply chain. We would like to continue to improve costs and profitability in these areas.

Participant 1: Secondly, as for compressors for LNG, please correct me if I'm wrong, but I still have the image that a competitor is by far the strongest. What are the particular strengths of your LNG compressors in this area? Also, there is talk of an increase in the number of LNG plants in the future. So, let's say hypothetically, for a single 1-million-ton plant, could you share your rough estimate on how many compressors, expanders, and pumps, may be in demand for LNG potentially?

Miyaki: For LNG, it is on page 8 in the document. How much LNG we have delivered, 80 megatons per annum. This figure is shown at the bottom of the middle column. Roughly 20% of the LNG production in the market is our compressors and machinery.

The other 80% is the competitor, exactly as you said. The competitor is very strong. The background of the dominance of the competitor is that gas turbines have become the mainstream for driving compressors, in large part because of the history of LNG. This is where the competitor has a very strong position, as gas turbine drive will inevitably become the main equipment selection.

Even in this situation, there are clients who, for example, have arranged for gas turbines or drive units, but want to switch to Elliott-made compressors. In such a combination, our compressors have been chosen even though gas turbines have been almost always larger.

Our strength is the rotor dynamics are very good. In other words, if we can make a large, long shaft, for example, it will be stable. By doing so, in the case of the LNG compressor, it is also necessary to put gas once in the middle, but it is possible to mix gas in the middle in a not so narrow and not unreasonable way, and this leads to high efficiency. I think that is our greatest strength. In this context, some clients may go with gas turbines made by other manufacturers but opt for compressors made by Elliott.

We believe that the trend toward decarbonization and electrification of gas turbines is inevitable, and we are seeing a shift from gas turbine-driven compressors for LNG to electric motors in the future. I believe that this trend will intensify as we go, and that compressors will become more powerful and less gas turbine-driven, and that our compressors for LNG will have a better chance of being selected than ever before.

We would like to capture the short- and medium-term increase in LNG related, including cryopumps and expanders, as you mentioned earlier, especially since there are concerns about the pipeline.

Participant 2: I also have two points. First, the number of units delivered is provided on page 13. Do you have an analysis on out of all these delivered products, how many are currently in operation and how many are under your service & support (S&S)?

Miyaki: The reported figure includes products delivered 40 years or 50 years ago, or even earlier. Not all of them are currently in operation. For the S&S, in some cases, we service machinery no longer produced by us or made by other manufacturers. We don't have the number of units, including some that had retired. Indeed, this is not all of them.

Participant 2: By the way, I think that your support and service clients include services for your products and support for other companies' products, but in terms of ratios, what percentage should I assume is a mix of other companies' products?

Miyaki: On page 12, there are four areas of Global Services in the box at the bottom right, and although the percentages differ among these four areas, I think it is safe to assume that roughly 15% or 20% of these services are provided by other companies.

Participant 2: Compared to the machines of the past 10 years, how much energy has been saved by your current machines, and how much less electricity is consumed, for example, compared to the machines of the past 10 years? It would be very helpful if you could give us the figures for the energy saving effect of your machines compared to the machines of the past 10 years.

Also, from here, for example, it is not CCS as I mentioned earlier, but could you comment on what level of energy-saving effect you are looking at when implementing new technologies such as this?

Miyaki: First, regarding energy-saving effect, we can assess it by how much efficiency is improved by using our new products, for example. I'm sorry, I do not have the figures showing the final energy-saving effect in

terms of electricity or CO2 reduction, but in terms of the efficiency of compressors and steam turbines, the received order volume has improved by a few percent compared to 10 years ago.

On the other hand, as far as energy conservation is concerned, we are not talking about CCS in the future, but about the current approach, which we call rerate as shown on page 12 in the lower right, highlighted term. As mentioned in your question earlier, we have taken old equipment, say, 30 years or 40 years old, and changed the impeller inside while leaving the casing as they are because some of the impellers have improved efficiency. This modification improves the efficiency of the old aero impellers, which have been losing efficiency due to aging and the old aero impellers' low efficiency.

This contributes to reductions in power consumption and CO2 emissions. I think that our current energy conservation efforts are supported by new products year after year, or rather, by increasing efficiency through daily modifications and by these modifications, or what is called rerate.

The question of what will be the standard for energy conservation in the future, for example, when dealing with CCS, is the first question I would like to consider. As I mentioned earlier, the key is not just the energy consumption by upgrading and improving the performance of existing equipment but how much CO2 emissions can be reduced by CCS adding to them. We would like to contribute to CO2 reduction as a synergistic effect of adding CSS to existing equipments. Sorry, I don't have the numbers with me, so I hope we can discuss this again.

Participant 3: I would like to confirm your company's S&S strategy. Almost every three years, a presentation on compressor projects is held. If you look at the 2019 presentation or the 2016 presentation, the number of service centers is 16 in 2016, 21 in 2019, and 17 today, as shown on page 11.

To a large extent, the numbers are on the low side, and with some bumps. You claim 55% of service and support ratio is one of the strengths of the Company. Why, in the recent few years, the support and service centers decreased? That's my concern, but is it not something to be worried about? Will there be more service centers in the future?

Miyaki: The number is going up and down rather than declining. New locations are being opened -- for example, in Tianjin and Saudi Arabia -- while the number of Elliott Group service stores has been increasing since the 2000s.

At that time, I mentioned earlier that we were placing our service centers close to our clients, but in the past, for example, petrochemicals and petroleum refining were centered in Europe and the United States, and that is where we were initially deployed.

As you know, the petrochemical and petroleum refining industries are shifting from Europe and the United States to Asia and the Middle East. In the past, Japan was in the mix. As our clients move from one center to another, we must also consolidate our business operations. Our awareness of these issues has affected the number of our service centers as you can see.

On the other hand, we are increasing the capacity of each service center, so it does not mean that the number of service centers is decreasing or that the service capability or capacity is downgrading. In addition, we would like to be proactive and aggressively consolidate or close service centers and actively place service centers in new locations in the future.

Participant 3: I'd like to confirm one more thing, regarding the aforementioned profitability, compared to three years or six years ago, the number of employees was 2,600 in 2019, then 2,700 in 2016, and now it is

2,300. The employee headcount has dropped quite regularly. In which business have you been reducing the number of people? How should we look at this trend going forward?

Miyaki: This is also largely dependent on the consolidation of service centers, as was mentioned earlier. Therefore, rather than unilaterally reducing the number of employees to improve profitability, the number of employees is changing in line with changes in the client base.

In the future, services will be more like remote monitoring or automated design as mentioned in the initiative, rather than conventional services. So it is not necessarily to increase the number of employees even if the revenue from the S&S or new products will increase in the future.

Rather than reducing the number of employees as a priority to improve profitability, we believe that the number of employees is being optimized to better match the actual situation and to achieve growth.

Participant 3: About the new fields you mentioned earlier, such as CCS, hydrogen, and geothermal, if Elliott's revenues are 100, how much of that is accounted for by these three new fields? This is the last question.

Miyaki: Currently, in terms of new fields, of course, we are working on new fields to the point where they can be expressed numerically, and it is not zero, but in terms of 100, it is almost zero. This is just a way to focus and invest for the future and to work firmly toward 2030 and 2050.

Participant 3: Do you have any goals?

Miyaki: Yes. Basically, sales are important, but operating profit, the operating profit of the compressor and turbine business is JPY9 billion, which we have just announced, and we must firmly exceed the current operating profit in the medium term, not only in this new field, but also in other fields, including the profit improvement in the current field mentioned earlier. We believe that in the medium term, we must firmly surpass the current operating profit level.

【Session 2: EBARA Group-wide Co-Creation Initiatives for Hydrogen Supply Chain】

Participant 4: I have two questions. The first regards page 11 of the document, I believe. You have included an image of the future of Ebara's hydrogen-related business in terms of revenue. How much is this roughly in 2025? I am not sure if it is less than JPY10 billion or not, but what kind of sales do you think will be generated in the short term among the current items and which products do you think will be the main contributors in the medium term? Now that you have just shown us some of your lineup, please tell us what you have in mind for the main ones.

Tsukamoto: As you can see in the page 11, there is a faint bar at the 2025 mark. It does not indicate that we can certainly make these sales, but it is a pump for hydrogen power generation that we are currently developing. I mentioned earlier that the development of fuel supply pumps, pumps for power generation and pumps for mobility stations will be completed and will start entering the market around the year 2025. We are trying to put a little bit of those things down into a picture of what we think our expectations might be.

As you already know, I believe there is still a lot of uncertainty as to what direction and in what quantities the hydrogen market will grow. So, we are also being flexible as we move toward 2030 and 2040. As for what areas will be our strengths in the medium term, we believe that the area of liquid hydrogen, which we would like to transport on a large scale from a domestic perspective, and the area of power generation using this hydrogen, as I mentioned earlier, will become solid markets.

One more area is mobility, which is gradually accelerating around the world. Equipment for stations for heavy duty mobility. We started with plunger pumps as our main focus, but I believe that such items will become one of our pillars in the mid- to long-term.

Other than that, I would like to continue to explore and build up various markets, products, and business styles, including those of private companies and national policies, with an eye to Japan and the rest of the world.

Participant 4: As a supplementary confirmation, you mentioned the hydrogen stations in the mobility section, but I think that in the US and China, policy investments are made at the state or federal level. Especially in the US, for example, there is talk of installing several hundred hydrogen stations by 2025, so I wonder if you need to make preparations, sales, etc., for that point in time. Are you already making preparations for the hydrogen business in the US and China, such as negotiations?

Tsukamoto: It is difficult to go into too much detail, but Ebara has a number of bases, including the Elliott Group, which I introduced earlier in the first half of Session One. Ebara also has a number of sales and manufacturing bases in China, so we are now working to contact customers on potential projects by taking advantage of our strengths there. In a nutshell, we are working diligently to prepare for this.

Participant 4: My second question is about turquoise hydrogen. I think that turquoise hydrogen, as you explained, is not produced during CO₂-free production, and there is a comparison with green hydrogen in terms of energy efficiency during generation.

On the other hand, I think one key factor in terms of how much the market will grow is the use of the solid carbon that comes out as a product. I would like to know your thoughts in this area.

For example, in terms of products, we are talking about some known global demand for carbon black. So, given what comes out of the reaction, should we consider that to be the limit when thinking about the feasibility of turquoise hydrogen when solid carbon is required? Or, as you have indicated here, if we include other uses, such as activated carbon and carbon nanotubes, so that solid carbon has more uses, can turquoise hydrogen be considered more economical? What are your current thoughts in this area?

Tsukamoto: Since Mr. Yoshihama, who is present here today, is actually in charge of this area, please allow him to respond to this matter.

Yoshihama: As you asked, we believe there are many uses for carbon. Naturally, the carbon black market is very large and growing, and we see it as a very promising market. However, as Mr. Tsukamoto explained earlier, the process we are developing now is characterized by the ability to freely control the temperature to produce the carbon we want to produce.

We believe that this process is characterized by its ability to handle not only carbon black, but also activated carbon, carbon nanotubes, and a variety of other carbon applications, as described on page 9, and we are looking to capture a broad carbon market.

Tsukamoto: As a supplementary note, we are going to broadly understand various types of carbon in this way, and there are various types of carbon, from high value-added carbon to low value-added carbon. We would like to grow this process and area in cooperation with various people so that we can touch high value-added areas as much as possible.

Participant 5: I think this is a continuation of the previous question. The time frame is quite short, since it is only four years until the 2026 commercialization date for turquoise hydrogen. I'd like to know what Ebara's

technical challenges are at this stage. Perhaps Ebara's technology is ready for commercialization, but the problem of methane recovery, for example, or post-product use, which is not limited to carbon black that was mentioned earlier, is not yet well understood. Is it a problem in your company, or outside of your company? If I say which is bigger, how should we look at it?

Tsukamoto: I do not think it is possible to say which one is bigger, but I believe that the catalyst and other processes necessary for this reaction have been completed to some extent, but while they have been completed, we are still at the stage where we need to brush up in order to improve the yield.

The other point is that even though we have increased the yield of each individual reaction, we are still at the preparatory stage of developing the processes, equipment, and plants needed to implement these processes in society.

Therefore, it is necessary to put together both the elemental part of reaction and the process to implement it socially as a set. We are touching on both, and I believe that our strengths will be essential, especially in the area of commercialization and process making, and we hope to overcome these by 2026.

You mentioned earlier the utilization of hydrogen and the utilization of carbon. Can we call these exit strategies? This is one of the most important points in terms of commercial distribution, so it is important to grasp this. Therefore, we want to make sure that we go beyond these three.

Participant 5: Incidentally, should we consider exit strategies as the work of other companies rather than your company?

Tsukamoto: I think that how to use the carbon after it exits as a material will be the strategy of our customers or collaborators a little further down the road, but I think it is within our scope to deliver products that match the needs of our customers.

Participant 6: This overlaps somewhat with a previous question but let me just confirm a few things on slide 11, the future vision for hydrogen-related businesses. You presented an image of sales of more than JPY30 billion in 2030 and sales of JPY200 billion in 2040. What will be the composition of such sales in terms of the mix of fields? Also, could you give us some additional information on how we should think about profitability when development costs will be required in the future?

Tsukamoto: As mentioned in the previous question, it is quite uncertain, and each country and each company is searching for the best way to use and create hydrogen, so it is difficult to say the mix will be exactly this percentage, this percentage, and this percentage, and I think it would be inappropriate to do so. We can see that every region of the world is trying to drive the mobility field in particular. Furthermore, Asia and other places that import hydrogen in particular are driving the power generation field.

With those things in the middle, I wonder if we can see this kind of profitability. The figures from 2030 to 2040 are rough approximations. We have quantified the figures we would like to achieve, considering the growth in the mobility and power generation fields, as well as the amount of hydrogen predicted by the IEA and various other organizations I mentioned earlier.

We have a variety of other small machines on page 11, but each one is a seed at this point. By creating these products more quickly and reliably, the market for them will grow, and by creating various partners that use them, I am sure that these numbers will add up, and I hope that you will see it that way.

Lastly, in terms of profitability, I would like to say two things since this is a new area of business. One is that we are taking on a difficult technology, so we would like to build a business style that is highly profitable.

But on the other hand, the biggest challenge in the world in the field of hydrogen is the high cost. Therefore, we need to make this a cost that can be implemented in society, which is also the goal of all of us, and I would like to steer the ship so that we can achieve a good balance between both of these goals.

Participant 6: In terms of profitability, since you are taking on the challenge of difficult technologies and achieving high profitability, ideally do you envision that you will be able to aim for the profitability of highly profitable businesses in other segments, such as the Precision Machinery business.

Tsukamoto: Of course, our current thinking is that we would like to achieve that level or even higher.

Participant 6: Second question. I would like to know what, if anything, you can see at this point in time about the superiority of your company's hydrogen-related business over your competitors and how your market share is expected to grow.

Tsukamoto: Of the ones I introduced today, for liquid hydrogen pumps especially, we have strong technical capabilities as a long-established pump manufacturer, and our customers have adopted our pumps in various places. We have strengths in such technologies, and one of our foundations is cryopumps using LNG that we have been working on at Elliott.

From this perspective, looking at the competitive environment in cryogenic and very low temperature applications, Ebara has been able to maintain a certain level of market share, and we would like to further increase this share by introducing hydrogen, the next new development element. In this sense, the market share we would like to aim for is high.

However, I understand that Ebara is not the first company in station market, where the world is already moving fast, so we are now accelerating our efforts to become number one with new products that use Ebara's manufacturing technology and elemental technology.

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