Interview with Yoshiro Abe, Managing Director, Overseas Business Division, Environmental Solutions Sector, JFE Engineering Corporation

Promoting Urban Amenities in the Philippines

By *Japan SPOTLIGHT*

Rapidly progressing urbanization is one of the characteristics of economic development in emerging Asian countries, creating a significantly increasing need for social infrastructures to meet demands for better urban amenities. A sewerage system is certainly one such basic infrastructure urgently needed.

JFE Engineering Corporation, an engineering company of the JFE group, of which the origin is Japanese giant steel companies, has been engaged in constructing such infrastructures for developing Asian countries and is one of Japan's major providers of infrastructure to developing nations. *Japan SPOTLIGHT* interviewed Yoshiro Abe, managing director of the Overseas Business Division of the Environmental Solutions Sector of JFE Engineering Corporation, responsible for overseas environmental business including the design and construction project of the Parañaque Sewage Treatment Plant in Metro Manila in the Philippines, which will be completed in April 2018.

(Interviewed on Sept. 6, 2017)

Introduction

JS: Could you please tell us about JFE Holdings, Inc., the background to JEF Engineering Corporation's infrastructure exporting business and in what infrastructure you have a particular strength?

Photo: JEF Engineering Corporation

Yoshiro Abe, Managing Director, Overseas Business Division, Environmental Solutions Sector, JFE Engineering Corporation

Abe: JFE Holdings, Inc., the holding company of JFE group firms, was founded in 2002 when NKK and Kawasaki Steel Corporation, both then giant steel companies in Japan, merged. JFE Engineering Corporation was then founded as one of the business operation companies in the group which provides engineering, procurement and construction (EPC) services mainly in the infrastructure field. We have four principal business areas: first, environment-related infrastructure such as waste to energy or water and sewage treatment plants; second, energy-sector related infrastructure such as gas pipelines and LNG tanks; third, social infrastructure such as bridges or steel structures; and fourth, the new domain of infrastructure promoting social facilities such as smart agriculture systems for safer vegetables and Positron Emission Tomography (PET) systems for discovery of cancer in early stages.

Before the merger, our two predecessor companies, both having started as steel producers, became engaged in producing storage and transportation facilities for energy sources, such as pipelines or storage tanks for petroleum or natural gas, and finally expanded their business towards construction of environment-friendly waste to energy or water and sewage treatment facilities. At the moment, while in the Japanese market it is difficult to expect further high economic growth and demand for these infrastructures, our company is attempting to apply our technologies to infrastructures in the Asian market where we can expect high economic and population growth. Developing Asian nations are now facing exactly the same challenge as the Japanese economy faced during the 1960s and 1970s, namely a shortage of infrastructures. We are now trying to tackle this challenge with our technology.

JS: Japan achieved high economic growth in the 1970s and 1980s by raising the productivity of industrial and infrastructure facilities to meet

environmental constraints. It is thus often paradoxically pointed out that environmental constraints strengthened Japanese industrial competitiveness. In this light, do you think Japanese technology for producing environment-friendly infrastructure will become distinguished worldwide?

Abe: Yes, certainly. For example, Kawasaki city, where our predecessor steel company NKK had its factory which now belongs to JFE Steel, one of our group companies, used to suffer from air and water pollution in the 1970s. But its environmental quality is now significantly improved thanks to efforts by the city and industry. Thus we have long experience in taking care of environmental concerns and this has given us the capacity to achieve an infrastructure business such as waste to energy plants or highly advanced water and sewage treatment plants, by integrating our existing environmentally friendly technologies into infrastructure output.

JS: Could you tell us how many waste to energy plants you have built?

Abe: In Japan, since the 1970s we have constructed approximately 200 plants of which the disposal capacity in total has reached more than 40,000 tons per day. Overseas, approximately 100 plants have been built and the capacity in total has reached more than 42,000 tons per day. In 2014, we acquired a German company, Standardkessel Power Systems Holding GmbH (currently registered as Standardkessel Baumgarte Holding GmbH) which owns Standardkessel Baumgarte GmbH (SBG), and in Europe SBG has been mainly active in waste to energy business, while in Asia JFE Engineering has been playing a key role in this business. Altogether, including SBG's achievement, our overseas business achievement has become the same as our domestic business in terms of scale.

JS: Are you also working on building waste to energy plants in the Tohoku region, which was most badly hit by the Great East Japan Earthquake in 2011?

Abe: Since the earthquake in 2011 we have been working on treatment of debris caused by the disaster in Miyagi Prefecture and also working on treatment of debris somewhat affected by nuclear contamination from the subsequent power plant disaster in Fukushima Prefecture. We have been undertaking work on constructing temporary incinerators there, as well as management, administration and dismantling of those plants.

JFE Engineering Corporation's Overseas Business

JS: You have been working in Europe, such as in Finland or Germany, but most of your overseas business seems to have been in Asia? Do you have any particular reason?

Abe: Asian countries are close to Japan and we have naturally many local subsidiaries, branch offices and engineering centers in Southeast Asia. Our two predecessor companies were active in Asia and since the transformation of our business structure we have been enriching our overseas business mainly in Asia by constructing new business bases.

JS: You have been involved in many business operations in Myanmar. Is there any particular reason for this?

Abe: In 1995 when the country was ruled by the military, we opened an office in Myanmar and got a contract to build a bridge as our first job there. Since then we have been working on bridge construction in collaboration with the Myanmar government and since its political system was democratized we have continued to work on this type of infrastructure building. In 2013, we founded a joint venture partnering with Myanmar's Ministry of Construction, called J&M Steel Solutions Co., Ltd., and engaged in manufacturing steel bridge structures in Myanmar. Its production capacity is now expanded to 30,000 tons per year. This company also provides fabricated steel to the Official Development Assistance (ODA) projects in neighboring nations.

JS: In Thailand or Malaysia, which have well-developed manufacturing sectors, they need environment-friendly production facilities. In Myanmar, which is still in the development stage, would there be sufficient need for environment-friendly production facilities?

Abe: Myanmar is still on the way to achieving sufficient production capacity and is not yet earnestly engaged in blueprinting life amenity-related facilities, while neither water purification plants nor sewerage systems have been fully established. However, a waste to energy plant disposing of waste and providing electric power simultaneously could save greenhouse gas (GHG) emissions which would have been created by waste landfill. Having noted this, a waste to energy plant was adopted for the Joint Crediting Mechanism (JCM) by which the saved GHG would be added to the overall obligation of Japan in reducing GHG in accordance with international guidelines. So the Japanese government is subsidizing the projects to be covered by the JCM. Thus, a maximum half of the construction cost of our waste to energy plant project in Myanmar was financed by this subsidy and the rest of the cost was financed by the city of Yangon. Our incinerator plant capacity is only 60 tons per day and its generated power is also 700 kilowatts. Though it is still a small plant, both we and Yangon consider this plant as a model to be followed.

JS: You have been working in the Philippines as well. Since when?

Abe: Our business in the Philippines was started when our predecessor company Kawasaki Steel Corporation founded a factory of sintered ore, a pre-treatment process of iron ore, in Mindanao Island in 1977. At that time Japan imported iron ore from West Australia, and we did this pre-treatment process for it in the Philippines. By this process, we could reduce our production costs and also we could use sintered ore in a factory in Japan as soon as it arrived. With such a long relationship with the Philippines, JFE Engineering Corporation founded a Philippine subsidiary, named JFE Techno Manila, Inc., in 1995. It is now working as a base office for design of all the projects in Asia including Japan. There are around 400 employees and with only a few Japanese managers, the company is operated mostly by local staff. The business is going well and the human resources are well developed.

Water & Sewage Treatment Plant Projects

JS: Could you tell us about your water and sewage treatment plant business in the Philippines?

Abe: We are engaged in a design and construction project for water purification plants and sewage treatment plants in the Philippines, as we are elsewhere.

In Japan, we are now working on biogas power generation and effective use of ash after sludge incineration. In developing Asia, we do not see yet such need for environment-friendly technology. We are there mainly engaged in water and sewage treatment plants, which is a little simpler work.

We have been working on such business in the Philippines for these past two decades and there have been around 30 projects on which we were working. While there are many projects supported by ODA in the other developing countries, we undertook the business from concessionaires in the Philippines.

At the time of the Asian financial crisis in 1997, the water supply and sewerage system in Metro Manila was privatized. Since then, Maynilad Water Services, Inc. and Manila Water Company, Inc. have been providing water supply and sewerage system services. We have a contract with those two concessionaires in producing the system.

JS: Do you think the infrastructure business can be carried out efficiently by private companies? I guess this is a worldwide trend today.

Abe: Yes, I think water supply and sewerage systems are exactly the sort of infrastructure that could be promoted by private firms. The best business model would be to treat sewage through a system financed by the revenue from water supply. This is a balanced approach that could see major water businesses earning sustainable profits.

JS: What do you think about Public Private Partnerships (PPP) or Private Finance Initiative (PFI)? Both are considered to be effective ways to achieve public operations by using private funds or resources.

Abe: PPP can be achieved in several specific ways. For example, build-operate-transfer (BOT) and business process outsourcing (BPO) are the ones often practiced. In the former, a private business produces a public facility and after running it for a while transfers it to the public entity. In the latter, a public entity outsources a certain part of work to a private business with expertise. In developing Asia, many PPP projects are coming up, but among them there are some which are not well devised and their business models are not sustainable.

For example, there is a case of BOT for a waste to energy plant. A private company is asked to produce a waste power generation plant with 1,000 tons of waste per day for incineration and run it for 20

Photo: JEF Engineering Corporation

Parañaque Sewage Treatment Plant with a capacity of 76,000 m³/day located in Metro Manila, the Philippines

years. This private company plans to construct a plant by borrowing money and repay it with revenue from generated power. But sometimes 1,000 tons of waste per day cannot be secured, so they cannot expect stable revenue from power generation, which would make it difficult for them to get finance.

JS: Could you talk about your most recent infrastructure project in the Philippines, the Parañaque Sewage Treatment Plant in Manila?

Abe: This plant has a capacity of 76,000 cubic meters per day which would treat the sewage of around 110,000 households. We have done many sewage systems in the Philippines, starting from small ones with a capacity of only several thousand cubic meters per day and recently the scale of our plants has become larger and finally we are now working on the largest one *(Photo)*.

JS: With the completion of the Parañaque Sewage Treatment Plant in April 2018, do you think the sewerage situation in Manila will be significantly improved?

Abe: Yes, I believe so. The plant is under construction, located just on the right of the Manila Ninoy Aquino International Airport. This area has recently been redeveloped and a new condominium constructed, so we expect a rapid increase in population. Our plant will treat the sewage of this area and release it into Manila Bay. Since our plant is equipped with highly advanced technology to eliminate nitrogen or phosphorus, I believe it will also contribute to improvement of the quality of water in Manila Bay which many worry is deteriorating today.

JS: How do you think the Philippine government or your clients assess your achievement?

Abe: We have been awarded the Top Achievement for Partners Award for three years in a row from Maynilad Water Services, Inc. We are the only Japanese company awarded with such an honor.

JS: You think your collaboration with Maynilad is working well in the Parañaque project?

Abe: Maynilad is a company in which 80% of the shares are owned

by a local company and the remaining 20% are owned by a major Japanese trading firm. We have been working with Maynilad on several other projects besides the Parañaque project and our collaboration has been working well in all the projects. However, we got these projects by winning the international bidding and it is always difficult to win this bidding. After getting the contracts, we have been proceeding with construction by managing a schedule determined in advance as well as the project cost we offered in the bidding. I believe this has brought us a good reputation and enabled us to win the bidding and achieve the existing consolidated partnership.

JS: Have you had any particular difficulties in proceeding with your projects in the Philippines?

Abe: It is extremely difficult to win international bidding, first of all. Most of the projects are subject to a "Design-Build" bidding. That is to leave the design of the plant to each bidder under the pre-determined condition of the site area, and the quality of influent and effluent. Each corporate bidder designs the whole construction process and calculates the total cost in participating in the bidding. Our strength is our knowledge obtained from long working experience in the Philippines about the climate and the details of regulations. I guess overall, our experience makes a distinction from our rivals.

JS: The role of an overseas subsidiary seems crucial to be successful in overseas business activities. What about your subsidiaries in the Philippines?

Abe: We are trying to minimize our Japanese headquarters' involvement in any Philippine projects. Our subsidiary, JFE Techno Manila, Inc., is involved in design of the plant and thus we can increase the weight of local costs and reduce the overall project cost, which can help our company beat the international competition. In general, we would soon like to proceed with our overseas projects only through our overseas subsidiaries. For example, we already have subsidiaries as our engineering bases with design functions in Pune in India and Shanghai in China. We are planning to promote our projects in China from our Shanghai subsidiary and the other projects in Asia from our Pune subsidiary.

JS: Do you have any particular plan for overseas business expansion?

Abe: Yes. Besides overseas business development in areas like waste to energy plants or water and sewage treatment plants, both related to the global environment, we are promoting bridges as social infrastructure. Many of them are ODA-related ones and we are keen on acquiring such projects in Southeast Asia and even further in Africa.

Japanese Industry's Infrastructure Exporting Business

JS: How do you assess overall Japanese industry's capacity in promoting infrastructure projects overseas?

Abe: I guess there is a difference in competitiveness among the sectors. Our water and sewage treatment plants are largely provided by civil work. A typical case is having half of the operation localized in collaboration with a local construction company and we support the other half of the operation. Though I believe we contribute to the local economy's development, we would not need high technology to achieve our project. Rather, we are expected to proceed with our project while rigorously managing the schedule fixed in advance. In terms of such competency, I think Japanese firms are truly excellent.

I also think our waste to energy plants use truly distinguished technology, of which we Japanese should be proud. With limited space and in particular as we cannot do waste landfill in urban areas with high population density, we have been doing waste treatment by using incinerators since the 1970s. Therefore, our capacity in this area is very well developed and achieving high international competitiveness.

JS: Do you think that exporting high-quality Japanese infrastructure would contribute to the world economy's development?

Abe: Yes. Developing Asian countries are following in Japan's footsteps in economic development and now rapidly catching up with Japan. In this drastic modernization process, they need solutions for air or water pollution or traffic jams which Japan could provide in light of its experience. Japan could accelerate their economic development by providing proven solutions. Recently, in many cases, Japanese local governments and private businesses are trying to provide solutions to the developing countries based on the knowledge of private businesses and management capacity of governments in urban development. The Japanese model of urban infrastructure building based on public organizations and private business partnerships would be highly appreciated by developing nations. JS

Written with the cooperation of Naoko Sakai who is a freelance writer.