

MINUTES of The 2nd Tripartite Roundtable on Environmental Business

Dates: April 25-26, 2016

Location: Hotel Century Shizuoka, Japan

Theme: Active role of Environmental Industry in the Regional Transition to Green Economy.

Participants: 6 Chinese delegates, 14 Japanese delegates, 7 Korean delegates.

OPENING SESSION

Mr. Goto Toshihiko, Sustainability Forum Japan (Japan), opened the proceedings by welcoming all participants including the delegates from China and Korea. He stated that the objectives of this meeting were to discuss the promotion of green growth and environmental cooperation within Northeast Asia. He also stated that this round table meeting was a good opportunity for exchanging information concerning the newly emerging environmental industry and thanked all participants for contributing in the success of The 2nd Tripartite Roundtable on Environmental Business.

Opening remarks were given by **Mr. Fukami Masahito, Assistant Vice-Minister, Ministry of the Environment (Japan)**, **Mr. Yoshibayashi Akihito, Vice-Governor of Shizuoka Prefecture (Japan)**, and **Mr. Tanabe Nobuhiro, Mayor of Shizuoka City (Japan)**, expressing gratitude to the participants for gathering and anticipation for a fruitful meeting.

A commemorative photograph was taken.

Mr. Duan Feizhou, CHINA-ASEAN Environmental Cooperation Center (China), made a short summary of the 1st TREB meeting.

SESSION 1: Dialogue of Environmental Industry Park

Dr. Yang Myung Sik, Ministry of Environment (Korea), the Chairperson of Session 1, expressed hope that the Session's discussion would lead to the further development of beneficial Environmental Industry Parks in the region and introduced the speakers for the first session.

Mr. Sei Kazuyoshi, Shizuoka City (Japan), delivered a speech on "Encouraging the spread of next-generation energy drawing on the distinctive features of Shizuoka City". He began by giving an overview of the Shizuoka City region. Extensive public- and

private-sector initiatives are underway which take advantage of the region's abundant renewable energy resources. The "Shizuoka City Next-Generation Energy Park" was established in October 2014 to unite these initiatives and build the municipal area into a "Next-Generation Energy Park" through education and tourism measures including zoos and nature reserves, which also serve as renewable energy generation sites. Looking to the future, Shizuoka City will aim to build a hydrogen society through the "Shizuoka Hydrogen Town Promotion Project." Public awareness is key in stimulating interest in renewable energy sources and establishing energy-saving behaviors, so the City will continue to engage in promotion and educational activities.

Ms. Choi Jina, Korea Environmental Industry Association (Korea), gave a presentation entitled "Korean Eco-friendly Complex". Ms. Choi introduced the three types of complex. "Environmental Industry Complexes" aim to facilitate industrial coordination amongst environmental industry members. "Environmental Technology Demonstration Complexes" aim to promote the development and commercialization of new technology as well as information sharing. "Eco-friendly Energy Towns" such as "Hongchun-gun Eco-friendly Energy Town" are established aiming at transferring negative image of waste treatment facility into favorable cultural tourism spots which generate additional revenue through renewable energy and profit created by just wasted waste disposal to local areas in order to become village-friendly venue.

Mr. Duan Feizhou, China-ASEAN Environmental Cooperation Center (China), made a presentation on "Construction of the International Cooperation Demonstration Base for Environmental Technology and Industry". He began by describing the background of the CHINA-ASEAN Environmental Cooperation Center (CAEC). CAEC aims to encourage and act as a platform for regional environmental cooperation, including international environmental industry cooperation, along "One Belt and One Road", emphasizing regional advantages. China is committed to regional cooperation in environmental issues, and in 2013, the "CHINA-ASEAN Cooperation Framework for Environmentally sound Technology and Industry" was confirmed by the ASEAN Secretariat, and became a mutual cooperation mechanism to establish the "CHINA-ASEAN Demonstration Base for Environmental Technology and Industry Cooperation." The establishment of six "International Cooperation Bases" will be promoted throughout China. Mr. Duan encouraged more participations from Japan and South Korea to collaborate with these "International Cooperation Bases".

During discussion time, active discussion was made.

- 1) Ms. Choi Jina (Korea) asked Mr. Duan Feizhou (China) about current initiatives for Environmental Industry Parks in China. Mr. Duan answered that they feel an acute need for information sharing platforms, and the Session's presentations will be useful in planning further initiatives. Mr. Jiang Zihou (China) added that matching industries and projects is key, and that in developing Environmental Industry Parks, technology sharing from the Korea and Japan will be important. Mr. Wang Jiwei (China) added that Japan's and Korea's Environmental Industry Parks offer cutting-edge technologies and solutions, emphasizing exchange with industry.
- 2) Mr. Goto Toshihiko (Japan) asked Chinese delegates how they address water issues. Mr. Jiang Zihou (China) answered there are various initiatives to recycle water in industrial parks and other facilities.
- 3) Dr. Yang Myung Sik (Korea) asked Mr. Sei Kazuyoshi (Japan) about the current percentage of renewable energy usage in Shizuoka City. Mr. Sei answered that it was 20%, and initiatives are underway to establish the ideal energy mix.

Dr. Yang Myung Sik summed up Session 1, thanking all participants for their active discussion. He stated that further regional collaboration on Environmental Industry Park initiatives will be needed.

SESSION 2: Policies on Green Finance to improve Green Development/Economy

Mr. Wang Jiwei, China Nonferrous Metals Industry Association Recycling Metal Branch (CMRA) (China), the Chairperson of Session 2, expressing anticipation that the discussion would lead to increased information sharing and collaboration, addressing the "green needs" of the region. He then introduced the speakers for the second session.

Mr. Duan Feizhou, China-ASEAN Environmental Cooperation Center (China), delivered a speech on the "Overview for the Chinese Green Financial Policy". Chinese Green Financial Policy has its roots in the 2007 release of "Suggestions about Implementing the Environmental Protection Policy and Regulation against Financial Risks" by the Environmental Protection Administration, the People's Bank of China (PBC) and the Chinese Banking Regulatory Commission (CBRC), and various developments and "Five Year Plans" for future direction were outlined. Among several key current implementation cases of green finance in China, Mr. Duan discussed "Green Credit Policy", where banks address current high demand for green investment and challenges in "Green Finance" business. He then outlined key support projects conducted by Shanghai Pudong

Development Bank(SPBD), China Industrial Bank(CIB) and others, including the “Cross-department Collaboration Working Mechanism” and the practices of financial enterprises and the projects.

Mr. Saito Hidetsugu, Ministry of the Environment (Japan), gave a presentation entitled “Introduction to Japan’s Policy on Environmental Finance”. Japan’s policy on environmental finance addresses environmental risks facing Japan, including “stranded assets risks” with fossil fuels and “water shortage risks”. The Japanese Ministry of the Environment (MoE) makes efforts to promote ESG investment, and administers the “Environmental Information Disclosure System”, in addition to other initiatives, to facilitate information disclosure from corporations and financial institutions and promote dialogue with companies, investors, and the public sector. Mr. Saito then discussed “Eco Action 21”, a system of environmental management by the Ministry, appealing to SMEs nationwide to meet environmental performance guidelines and comply with environmental laws and regulations. Currently there are approximately 7,600 certified SMEs nationwide, and Mr. Saito gave the example of Fujieda Agricultural Processing Inc., where a tour will be held with participants on April 26.

Ms. Im HyunJung, Korea Environmental Industry & Technology Institute (Korea), made a presentation on “Green Finance Policy in Korea”, and began by introducing the Korea Environmental Industry and Technology Institute (KIETI). She gave an overview of the status on green finance initiatives in Korea, and introduced its green finance policy with 3 categorized aspects: i) Expand investment in green fields. ii) Strengthen green information supply and communication and iii) Develop green financial products and prepare incentives. . Government support for developing green financial products is key in ensuring the continued development of this sector. Green capital market development by financial institutions will accelerate green market formation, and further efforts are underway.

During discussion time, active discussion was made.

- 1) Ms. Mu Lingling (China) asked Ms. Im HyunJung (Korea) about the barometer used for measuring environmental performance, and how the cost of implementing these systems is implemented in a balanced way. Ms. Im answered that the evaluation points were decided based on a survey distributed to concerned parties, and content varies by industry. Regarding cost, it is borne by the government.
- 2) Mr. Wang Jiwei (China) asked how to achieve balance regarding costs borne by financial institutions and the social aspects of green finance. Mr. Feizhou Duan (China) answered that matching industry with products is key, incentivizing them to participate.

3) Mr. Saito Hidetsugu (Japan) addressed one question to Mr. Feizhou Duan (China) about risk in Chinese industries and one to Ms. HyunJung Im (Korea) about the target companies for green finance products. Ms. Im answered that the target companies are those with major environmental impact in their energy use. Mr. Duan answered that with the development of green finance, various risks will emerge for Chinese industry.

Mr. Wang Jiwei summed up Session 2, thanking the speakers for their engaging presentations, and expressed commitment to furthering collaboration between the three countries in the field of green finance.

SESSION 3: Environmental Labelling

Mr. Goto Toshihiko, Sustainability Forum Japan (Japan), the Chairperson of Session 3, outlined the background in cooperation among China, Japan and Korea on the matter of eco labelling.

Mr. Saito Hidetsugu, Ministry of the Environment (Japan) introduced the speaker.

Mr. Osawa Ryo, Japan Environment Association (Japan), gave a speech entitled “China Japan Korea Type I Ecolabel Mutual Recognition Initiative.” First, he explained the progress of developing common criteria among the three countries in the categories of PCs, MFDs, DVD Equipment, Televisions and Projectors, where agreement had been reached. Then, he stated that regarding two additional categories (Paint and Stationery), the three countries had succeeded in reaching agreement on common criteria. He outlined which elements of the agreements were harmonized or partially harmonized. The next target categories would be Paper Shredders and Textiles, both led by China. Enhancing tripartite cooperation would be accomplished through the establishment of a telephone conference and a platform for effective information exchange.

The signing ceremony was conducted following Mr. Osawa’s presentation. Two agreements were signed: “Agreement on Paint Common Certification Rule of Ecolabelling among China, Japan and Korea” and “Agreement on Stationery Common Certification Rule of Ecolabelling among China, Japan and Korea.” A commemorative photo session was held.

SESSION 4: Practices on Green Supply Chain

Mr. Goto Toshihiko, Sustainability Forum Japan (Japan), the Chairperson of Session 4, reminded participants that managing supply chains from the perspective of green economy

is of vital importance and introduced the speakers for the fourth session

Mr. Lee SangYong, LG Electronics (Korea), delivered a speech on “The Practices of LG Electronics’ Green Management”. He began by introducing LG Electronics as an international electronics industry leader, involved in diverse business spaces. LG Electronics’ “Green 2020 Strategy” is its approach to strengthening green production sites, expanding green product line-ups and creating new green business with “Green Management” - recycling resources, emphasizing green partnerships, and developing greener products which are more recyclable, use less heavy metals and other hazardous materials and are more energy efficient. The “Eco-index” was adopted in 2001 to assess products’ environmental performances. “Green Program Plus” (GP+) is a supply chain management program, training suppliers in managing hazardous substances, and encouraging socially responsible “green partnerships”, including managing materials sourced from conflict areas. Annual environmental performance is also internally evaluated.

Ms. Mu Lingling, Tianjin Green Supply Chain Service Center (China), gave a presentation entitled “China, Japan and Korea Cooperate to lead the Construction of APEC Cooperation Network on Green Supply Chain (GSCNET)”. She outlined the background of the Green Supply Chain theory, as well as global practices, and China’s initiatives in promoting green development through the implementation of Green Supply Chain, including “Greenization” to control pollution and protect the environment. She introduced the “APEC Cooperation Network on Green Supply Chain (GSCNET),” and the Tianjin Pilot Center, endorsed by the 22nd APEC Economic Leaders’ Declaration 2014. Tianjin Yujiapu Financial District is the First APEC Low Carbon Model Town, and a leader in regional green industry initiatives. She encouraged participants to cooperate to facilitate APEC GSCNET and explore a green supply chain collaboration mechanism to promote communication, public-private coordination and more.

Mr. Furuta Kiyoto, Canon Inc. (Japan), made a presentation on “Canon Environment Activities & Approach on a new information transfer scheme ‘chemSHERPA’ for chemicals in products”. He outlined the “Canon Environmental Vision” which aims to achieve “highly functional products” while also “minimizing environmental impact throughout product life-cycle”. This includes supply chain management, such as chemical in product and management to reduce CO2 emissions. “chemSHERPA” is an information transfer tool in supply chain with composition and compliance declaration of chemical in product to ensure standardization of information provided and conformity with IEC62474. “chemSHERPA” is

based on extensive consultations with industry covering a wide range of upstream and downstream supply-chains. Since the supply-chain expands globally, Mr. Furuta expressed interest in developing “chemSHERPA” while considering the international standard and working for global implementation.

During discussion time, active discussion was made.

- 1) Mr. Lee SangYong (Korea) asked Mr. Furuta Kiyoto (Japan) whether chemSHERPA would replace systems related to JAMP and others, and whether chemSHERPA was designed to address a problem with previous programs. Mr. Furuta answered that in JAPAN, JAMP AIS tool will replace to chemSHERPA. And chemSHERPA would meet newest global standards.
- 2) Mr. Duan Feizhou (China) asked Mr. Furuta Kiyoto (Japan) and Mr. Lee SangYong (Korea) about their initiatives in China and what role they perceived for their companies there. Mr. Lee said that annual evaluation and training are conducted at China-based related companies about green supply chain. Mr. Furuta said that Canon has dealings with only the supplier which satisfied a “Canon green procurement standard” including Chinese suppliers and evaluate annually.
- 3) Ms. Mu Lingling (China) asked Mr. Furuta Kiyoto (Japan) and Mr. Lee SangYong (Korea) how they conduct evaluations of their suppliers, and how cost varies by country. Mr. Furuta answered that examinations are conducted with internal resources, and focus not only on environmental issues, but also the overall quality of the products. Cost varies because there are legal situation differ from country to country. Mr. Lee said that examinations are conducted with internal resources, and cost is spent internally as well. He added that there is an LG plant in Tianjin, so there might be opportunities for collaboration there.
- 4) Mr. Goto Toshihiko (Japan) asked Mr. Lee SangYong (Korea) about the Green Partnerships program with regards to secondarily and tertiary related companies. Mr. Lee answered that they have been making various efforts to address this point.

Mr. Goto Toshihiko summed up Session 4, appreciating the strategic and meaningful discussions of green supply chain management, and the discussion not only of the risks involved, but also the opportunities.

SESSION 5: Technical exchange and cooperation on water

Mr. Lee EuiSin, HiEntech (Korea), the Chairperson of Session 5, stated that with the growing scarcity of water, technical exchange to protect water resources and use and reuse

them responsibly is of critical importance, and introduced the speakers for the fifth session.

Mr. Oishi Teruhiko, Sapporo Breweries, Ltd. (Japan), delivered a speech on “Sapporo’s initiatives for the environment about wastewater treatment at the Shizuoka Brewery”. Mr. Oishi began by introducing Sapporo Breweries, Ltd. and its environmental initiatives. In 2015, Sapporo Group formulated environmental goals under the name “activities to protect the Earth for 2030,” and accomplished its past environmental goal, a 60% reduction of CO₂ emissions compared to 1990. Wastewater treatment at its Shizuoka brewery is a key part of these initiatives, which use aerobic microorganism treatment and achieves 100% recycling of by-products and waste. Surrounding the brewery, a “biotope park” was also established to promote coexistence with nature. Mr. Oishi looked forward to welcoming participants to the site for the following day’s tour.

Mr. Choi Hyosoo, Econity Co., Ltd. (Korea), gave a presentation entitled “Econity: Improved Water Treatment Technology”. Mr. Choi began by introducing Econity, a membrane total solution company, which holds innovative patents in the field for a PVDF process involving both TIPS and Stretching, among others. An overview of Econity’s product offerings was also given, such as the ECONITY CF Series, which received California Title 22, one of the strictest membrane quality certificates, and uses the MBR Process, which minimizes required construction space, offering a 30% smaller footprint and therefore a reduction in civil installation and maintenance costs. In addition, the Pressurized Membrane PF-Series offers a large capacity module with a high chemical resistance and fiber tensile strength. Next, various use cases were introduced, including those in Korea, Malaysia, Kazakhstan and Vietnam, illustrating the wide applications for Econity’s wastewater treatment and reuse solutions.

Mr. Jiang Zihou, Jiangsu Benenv Environment Protection Technology (China), made a presentation entitled “Technical Communication and Cooperation on Water Pollution Prevention and Control”. He began by sharing his background and the background of his company. He described Benenv’s core products, including the KDS Solid-liquid Separator, a Sludge Drier, and carbonization technology. Benenv undertakes extensive cooperation with Japan, working with the Japan Research Agency for study programs. He described Benenv’s initiatives in opening the Chinese market, as well as its sales activities and other overseas achievements and outlined the “13th 5-Year plan (2016-2020): New Cooperation Demand for China, Korea and Japan”, focusing on addressing black water treatment.

During discussion time, active discussion was made.

- 1) Mr. Choi Hyosoo (Korea) asked Mr. Oishi Teruhiko (Japan) about the water treatment and reuse systems at Sapporo's facilities. Mr. Oishi answered that systems meet strict standards, and expressed commitment to a "hybrid" approach to water treatment and reuse.
- 2) Dr. Yang Myung Sik (Korea) asked Mr. Oishi Teruhiko (Japan) whether the wastewater treatment and recycling would be conducted is through another company or Sapporo itself. Mr. Oishi answered that Sapporo conducts wastewater treatment in part by itself, but also with some partner companies, but recycling is conducted by partner companies.
- 3) Mr. Wang Jiwei (China) asked Mr. Choi Hyosoo (Korea) about collaborative initiatives between businesses, and Mr. Choi outlined a joint venture initiative.
- 4) Mr. Jiang Zihou (China) commented that competition in the Chinese market could lead to innovation, and encouraged Japanese and Korean companies to partner and proactively enter the Chinese market.
- 5) Mr. Lee EuiSin (Korea) asked Mr. Oishi Teruhiko (Japan) about the management approach to deciding to recycle all by-products, and Mr. Oishi answered that it was rooted in both social responsibility as well as business reasons.
- 6) Mr. Lee EuiSin (Korea) asked Mr. Jiang Zihou (China) about the decision to address black water treatment issues. Mr. Jiang answered that the problem was reaching a critical juncture, and there was urgent need to address it, as well as a valuable market opportunity.

Mr. Lee EuiSin summed up Session 5, thanking the speakers for their meaningful presentations and expressing his hope for further collaboration projects in the field.

SESSION 6: Business cooperation case of water

Mr. Jiang Zihou, Jiangsu Benenv Environment Protection Technology (China), the Chairperson of Session 6, stressed the importance of business cooperation in addressing the risks and opportunities of water treatment and reuse, and introduced the speakers for the sixth session.

Mr. Ruan Haifeng, Jiangxi Zili Environment Protecting, Co., Ltd. (China), delivered a speech on the "Feili Group". He gave an overview of this China-Korea joint venture company, which is engaged in wastewater treatment, water remediation and solid wastes treatment. One initiative is the "International Science & Technology Cooperation Center for Urban Alternative Water Resources (AWR) Development" (AWR Center) a platform for

international exchange and research, and technology development and transfer. Mr. Ruan outlined the AWR Center's concept on AWR development in various regions and shared status updates on several ongoing projects, as well as future plans for the "Eight Rivers" project in Xi'an, and building a sound aquatic eco-environmental system in "Huan-Ke New City" in Yixing. Urban water supply and pollution problems must be urgently addressed, and are essential to ensuring sustainable urban development.

Mr. Oinuma Masayoshi, Kurita Water Industries Ltd. (Japan), gave a presentation on the "Water recycling system of Kurita". He began by introducing the Tokyo-based water and environmental management company with 20 overseas affiliates. Through its products, Kurita Water Industries Ltd. is aiming to contribute to water recycling from a social perspective while also creating added value through sustained growth. The basic concept of Kurita's water recycling system is to support sustainable plant realization by providing compliance and environmental conservation and the creation of water recovery benefits. Through 3D fluorescence spectrum analysis, LC-OCD analysis and finger print analysis, Kurita's water recycling technology can ensure risk prediction, stable operation and investment cost reduction.

Mr. Lee EuiSin, HiEntech (Korea), made a presentation entitled "Creating New Future for Environment: LG Water Solution". LG's water treatment business began as part of the "LG Green Initiatives," and is active in both of EPC and O&M which include facilities of water treatment, wastewater treatment, waste treatment, and wastewater reusing. A Korea (HiEntech)-China (Bohai) Joint Venture Company, dealing with industrial wastewater treatment, reused/ultrapure water, environmental protection technology consultation and others is currently active in the field, and expansion of business area and revenue are planned through 2020. Mr. Lee gave an overview of business cases in China – wastewater treatment plants – and Japan – a wastewater and water treatment plant using the "G-cube Process (using Hitachi's Pegasus Media)" which enables stable nitrogen removal by protected nitrifiers in the cube, the handling of shock loads by controlling internal recycle resulting in a three times increase in the nitrification rate by the cube.

During discussion time, active discussion was made.

- 1) Ms. Mu Lingling (China) asked Mr. Lee EuiSin (Korea) whether its strategy changed following the selection of Tianjin as a site for LG. Mr. Lee answered that the partnership with Tianjin Green Supply Chain Service Center would be the start of further extensive collaboration.

- 2) Mr. Choi Hyosoo (Korea) asked Mr. Duan Feizhou (China) about standards for treated wastewater in China. Mr. Duan answered that various standards exist. Ms. Mu Lingling (China) added that some time may be necessary for China to develop a comprehensive program of taxes and provisions.
- 3) Mr. Choi Hyosoo (Korea) asked Mr. Oinuma Masayoshi (Japan) about analysis on water recycling systems, and how cost is evaluated. Mr. Oinuma answered that one overall evaluation point is how much cost can be reduced by recycling, and also said that overall operating cost is evaluated from this perspective as well.
- 4) Mr. Jiang Zihou (China) asked the participants about the point they were most anxious about in the years ahead. Mr. Oinuma Masayoshi (Japan) answered that creating a win-win situation is one. Mr. Lee EuiSin (Korea) said that technological competition is intensifying, and addressing market needs while maintaining profitability is of critical importance.

Mr. Jiang Zihou closed Session 6, thanking the speakers for their meaningful presentations and anticipating continued collaboration.

SUMMARY SESSION

The Minutes were revised through the active participation of all participants.

In advance of next year's meeting to be held in Korea, Dr. Yang expressed hope for further cooperation and collaboration on environmental business issues, and expressed anticipation for welcoming participants from all countries at that time.

Closing remarks were given by representatives of all countries.