



JOINT ABAC-APFF-APIP-HKGCC CONFERENCE

BUILDING THE INFRASTRUCTURE FOR THE CIRCULAR ECONOMY IN APEC

9 September 2019

Hong Kong General Chamber of Commerce (HKGCC)
Chamber Theatre, 22/F United Centre, 95 Queensway, Admiralty, Hong Kong

Executive Summary

The conference “Building the Infrastructure for the Circular Economy in APEC” brought together key stakeholders and experts from government, business, academia and multilateral institutions to support the development of a pipeline of bankable projects that can attract private sector investment and support the transition to a more circular and resource efficient economy. Key themes elucidated during the conference included:

- The need to change the narrative from “waste management” to “resource recovery management;”
- Infrastructure should be developed that can support a combination of various options including reducing, reusing, recycling (physical and chemical), energy recovery, treatment and disposal that leads to a more sustainable use of resources and materials;
- To support a more circular economy we must design for longevity, reuse, and recycling recognizing that some new material will almost always be needed; manufacturing should be performed with clean energy and sustainable materials; items should be used as long as possible and remanufactured when possible; waste should then be recycled either chemically or physically back into feedstock which then completes the loop;
- New technologies to transform waste into valuable commodities are being developed, these include technologies to recycle previously unrecyclable plastics and mobile resource recovery units that can process 5 tons per day and convert that into enough fuel and syngas that capital expenditures can be recouped within 2 years;
- For integrated waste management you need: supporting policy and strategy; legislation; enforcement; government coordination; and incentives for the private sector;
- Land planning and feedstock are some of the biggest risks for waste management projects, a clear understanding of the quantity and quality of the material to be processed is needed;
- There are a number of efforts within APEC including work to support the development of waste management projects under the Virtual Working Group on Marine Debris and new projects on sustainable materials management policy;
- The right environmental policy must be in place including laws that define waste;
- Community engagement and community approval is required for new projects;
- In order to expand the region’s long-term investor base regulations and standards should reflect the long-term nature of insurers and insurers should be allowed to invest in assets with long-term growth opportunities, such as infrastructure investment. Insurers and investors should be encouraged to make decisions that will be beneficial in the long run, not just beneficial at the moment;
- The current situation in the Philippines and Viet Nam was shared included efforts to help develop waste management infrastructure;
- A number of good practices and examples were shared including those on foreign currency and availability payments, payment guarantees, bid evaluation, minimum revenue guarantees, political risk insurance, and technical risk insurance;

- The APFF/APIP looks forward to working with APEC economies (Philippines, Vietnam, Indonesia and others) to hold capacity building programs to develop a pipeline of bankable projects. The first project is planned for the Philippines.

Opening Session

Dr. Aron Harilela Chairman, Hong Kong General Chamber of Commerce; Alternate Member, ABAC Hong Kong; and Chairman & CEO, Harilela Hotels Limited

Ms. Marjorie Yang Chairman, Esquel Group; and Member, ABAC Hong Kong

Mr. Kobsak Duangdee Chair, Asia-Pacific Financial Forum; Secretary General, Thai Bankers' Association

The opening session provided an overview of the conference's main themes, including resource recovery management, challenges faced by APEC economies, and how to accelerate progress and turn ideas into action. The host organizations were recognized for their work in the circular economy, particularly the Asia-Pacific Infrastructure Partnership, which has worked with Indonesia, the Philippines, Vietnam, Malaysia, Thailand, and Chinese Taipei to create a more enabling environment for private sector investment in infrastructure. Challenges were noted when sensible regulations are put in place to safeguard the environment, but they are not achievable because of lack of infrastructure or services or because of overly narrow definitions and language. The lack of sufficient waste and resource recovery management infrastructure is a top priority within the Asia-Pacific as it impacts various aspects of the economy and environment. Capacity building, particularly for local governments, is needed in developing economies to help them engage in public-private partnerships (PPPs).

Session 1: Advancing the Circular Economy through Resource Recovery Management (2RM)

Mr. Donald Eubank, *Principal, Read the Air*

Dr. Leiliang Zheng, *Associate, Advanced Material, Bloomberg New Energy Finance*

Roland Thompson, *Head of Asset Management and Operations, Green Power Investment Group*

Nigel Mattravers, *Director, ALBA Group Asia Limited*

Mr. Gen Takahashi, *General Manager, Business Development, JFE Engineering Corporation*

Session 1 discussed the policies, regulations and guidelines for increased reuse, repair, recycling and repurposing. Also discussed was how public-private partnerships can be developed in drop-off locations (DOLs), material recovery facilities (MRFs), municipal solid waste (MSW) supply contracts and tipping fees, and in industrial materials recovery facilities (IWRf); as well as the role that education and communication strategies can play in driving collaboration and innovation for a circular economy.

Hong Kong was used as an example to explore e-waste recycling and municipal waste management. In Hong Kong, which uses both types of recycling, e-waste recycling is a fully integrated option, while municipal waste management is not. Integrated waste management brings together all aspects of waste management including collection, separation, reuse and recycling, treatment and disposal. An integrated waste management scheme requires: policy and strategy, legislation, enforcement, land and planning, making all parts of government work together, and incentivizing the private sector.

It was noted that some new material will almost always be needed and manufacturing should be performed with clean energy and sustainable materials. Items should be used as long as possible and remanufactured when possible. It was recommended that stakeholders recover all waste, and recycle that waste either chemically or physically back into feedstock, which then completes the loop. Data was presented on the CO² equivalents released in the production of different materials, as well as the need for continuing innovation in materials.

One company provided an overview for the process of developing waste management systems, including the role of innovation in developing clean circular economy infrastructure. The company highlighted that waste disposal should be the prime objective of waste-to-energy (WTE) plants and not power generation. Projects can hit barriers at various stages. They can be stopped at the planning stage usually due to weak policy enforcement, public opposition, insufficient financing, and insufficient supporting regulation. They can stop at the design state if the proposal is rejected by the competent authority, if there is opposition from existing stakeholders, or lack of budget. Projects can stop at PQ/tender stage if there is a conflict of price (tipping fee etc.). Projects can stop at operation stage if there is insufficient performance of the facility, critical change in waste management policy, or bankruptcy of the operation company.

Potential risks can come in the form of eligibility for feed-in tariffs, quality of the waste; quantity of the waste, appropriate tipping fees, land acquisition, ash disposal, opposition from local residents, changes in law, political risk etc. Challenges can include waste characteristics, legal aspects, social impact, economic aspects, and environmental aspects. A number of possible risks were elucidated, including: a bid selection process and criteria that are not clear; delays in land acquisition by the government; delays in issuance of licenses or permits; long-term financing that is limited or not available; insufficient demand forecast from the government; high foreign exchange fluctuation; the government not fulfilling its contingent liability; or politicians intervening to undermine government obligations. Constraints include limited opportunities to communicate with the government implementing agency or risk mitigation measures which are available in a pure commercial market, such as guarantees and insurance, that are not enough to make the risk acceptable.

A number of good practices and examples were shared including:

- Foreign currency payment: a hospital BOT project in Turkey
- Availability payment: a LRT project in Australia
- Payment guarantee: IPP projects in Indonesia
- Bid evaluation by LCC: Water concession projects in the Philippines
- Minimum revenue guarantee: BOT expressway projects in South Korea
- Transaction advisory service: JICA Indonesia KPPIP Support Facility
- Political risk insurance: Nam Thuen 2 project in Lao PDR (MIGA ADB etc)
- Technical risk insurance: European Geothermal Risk Insurance Fund, NEXI (Indonesia)

SESSION TWO: Current Gaps and Challenges in Developing APEC Economies

Himamauli Das *Senior Adviser, C&M International; and Chief Legal Officer and Senior Vice President, Financial Integrity Network*

Ryan MacFarlane, *Director, C&M International*

Merrin Pearse, *Sustainability Advisor, The Purpose Business*

Fiona Sykes, *Senior Engineer, Resources, Arup Group*

Michael Harrison, *Partner, Ashurst*

Ying Staton, *Head of Corporate Development, Plastic Energy Ltd*

Charles Goddard, *Executive Director, World Ocean Summit; and Editorial Director, Asia Pacific, The Economist Intelligence Unit*

This panel focused on the challenges governments and local municipalities face in developing resource recovery systems, including those related to enforcement of existing laws and regulations, governance and transparency. Also referenced were issues of insufficient operating and capital expenditure budgets at the local level, where responsibility for waste collection and management ultimately resides, deterring the flow of needed capital to the solid waste management and recycling sector.

One private sector speaker described some of the existing efforts within APEC to support the development of waste management projects, including the Virtual Working Group on Marine Debris; the [APEC Policy and Practice Recommendations](#) - which is complementary with the APEC Finance Ministers Process work stream; the Asia-Pacific Infrastructure Partnership; and new projects on sustainable materials management policy. Possible future APEC circular economy work in 2020 during Malaysia's host year was also discussed, including how plastics fit in a circular economy.

The importance of having the right environmental policy in place, the need to have laws that define waste, issues around approvals, and the importance of community engagement and community approval were also underscored during this session. The challenges of the waste hierarchy were described, including that what stakeholders consider as the most "bankable" projects are not necessarily always at the top of the waste hierarchy.

The use of plastic energy and the technology to recycle previously unrecyclable plastics was also introduced. There are a variety of challenges related to waste management in emerging economies including difficulty in accessing finance; little to no incentives for policy change; absence of infrastructure; reliance on informal sector; inadequate feedstock to support industrial recycling; and high commercial, legal and social risk. It was noted one of the biggest challenges is the difficulty of transferring technologies to governments.

SESSION THREE: Financing the Circular Economy Infrastructure

Jonathan Drew, *Managing Director, Sustainable Finance, Real Assets & Structured Finance, Global Banking Asia-Pacific, HSBC*

Makoto Okubo, *General Manager, International Affairs, Nippon Life Insurance Company*

Gabriel Roseman, *Co-Founder and Chief Operations Officer, Double Loop Solutions*

Yukihisa Sakata *Senior Consultant, Japanese Business Alliance for Smart Energy Worldwide (JASE-W)*

This session underscored the importance of allocating risk properly, the legal issues around the right to engage on certain projects, feedstock risks, technology risks, and new products risks (e.g. recycled plastic). It was noted that while sometimes more expensive, private sector finance can bring in additional review and discipline to projects.

One private sector guest described the work of the Asia-Pacific Financial Forum and the work of the Life Insurance Association of Japan to support environment, social, and governance (ESG) investment, as well as some of the recent investments in social bonds, healthcare bonds, and green bonds. Some of the challenges around ESG rating and evaluation, investment selection, and stakeholder education were described, with recommendations provided to address these challenges. For example, in order to expand the region's long-term investor base, several principles should be applied. Regulations and standards should reflect the long-term nature of insurers, and insurers should be allowed to invest in assets with long-term growth opportunities, such as infrastructure. Insurers and investors should be encouraged to make decisions that will be beneficial in the long run, not just beneficial at the moment. Last but not least, standards should be principle-based and aim to achieve comparable outcomes by taking into account the diversity in different jurisdictions.

Examples were provided to demonstrate private sector services reducing landfill waste by redeploing, reusing, and recovering assets for companies. Key requirements for developing successful waste-to-energy infrastructure were also shared with the audience. Presented were the features of waste-to energy technology, the key conditions for WTE technology introduction, the objective of WTE infrastructure, revenues from WTE infrastructure operation, and issues for consideration regarding the waste composition and environmental protection and standards. Finally, the APEC handbook on "Quality Waste-to-Energy Infrastructure (QWTEI)" was shared.

SESSION FOUR: Catalyzing Initiatives – From Idea to Action

Julius Caesar Parreñas, *Coordinator, Asia-Pacific Infrastructure Partnership; Coordinator, Asia-Pacific Financial Forum; and Senior Advisor, Mizuho Bank Ltd*

Mia Mary Sebastian, *Deputy Executive Director, Public-Private Partnership Center, Republic of the Philippines*

Cuong Luu Duc, *Director General, Viet Nam Institute for Urban-Rural Planning, Ministry of Construction, Viet Nam*

Kohei Hibino *Program Manager, Kitakyushu Urban Infrastructure, Institute for Global Environmental Strategies (IGES)*

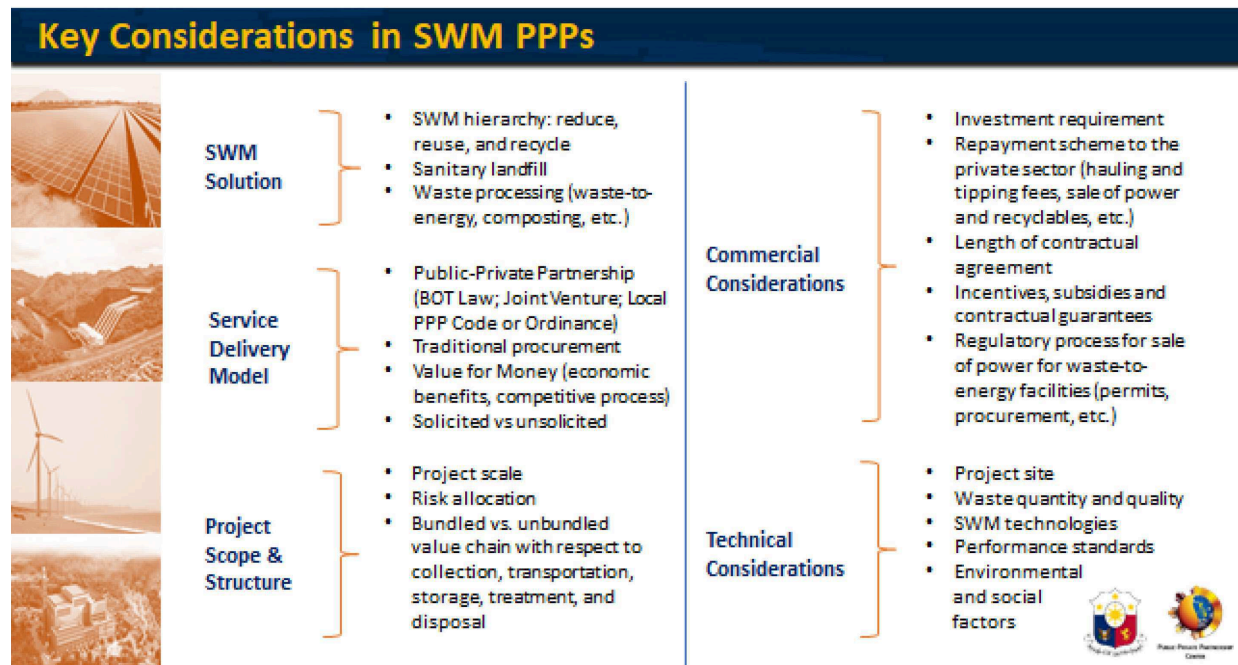
Crispian Lao Vice Chair, *APEC Virtual Working Group on Marine Debris; and Commissioner and Vice Chairman, National Solid Waste Management Commission, Office of the President, Republic of the Philippines, Private Sector Representative for the Recycling Industry*

Eugene Sullivan, *Principal Investment Officer, International Finance Corporation (IFC)*

The 4th session began with a reminder that the goal of the conference was to support the development of a pipeline of bankable resource recovery management projects in developing APEC member economies, particularly in those economies that currently face the greatest challenges in managing municipal waste and addressing the problem of marine debris at its source. This process was intended to develop in 3 stages: (a) a meeting of key stakeholders at the international level to agree to collaborate; (b) dialogues at the domestic level between authorities responsible for waste management projects and practitioners/experts from the private sector, multilateral institutions, export credit agencies and specialist institutions; (c) capacity building (training, seminars, advisory services) at the domestic/local level to assist authorities in launching resource recovery management projects; and (d) launch of projects and financial close. Country examples were provided to share implementation efforts within the Asia-Pacific

region.

One speaker noted that private sector involvement in solid waste management (SWM) via PPPs can take the form of capital investment; professional skills to operate and maintain the SWM value chain and facility; and the provision of technologies and solutions for SWM. The PPP Center in the Philippines was used as an example of implementation efforts of PPPs. The Center serves as a central coordinating and monitoring agency for all PPP projects in the country; it advocates for policy reforms to enhance the enabling environment for PPPs; and it conducts capacity building activities to improve skills of relevant agencies. The PPP Center supports projects by providing assistance in the review and/or development of feasibility studies and tender documents; provides advisory services from project approval to procurement; assists in the evaluation, negotiation, and management of unsolicited proposals; and coordinates and monitors projects to ensure compliance with the contractually agreed terms. Data shared demonstrated that as of August 2019, there were 75 local PPP projects (38 solicited and 37 unsolicited, either BOT or JV) that were in different stages of development and implementation, including 17 waste management projects.



Key considerations in SWM PPPs in the Philippines.

It was noted that Vietnam has the desire to increase the rate of municipal waste to energy from the current negligible level to 30% by 2020, about 70% by 2030, and most waste used for energy generation by 2050. By 2025 Vietnam looks to: enhance recycle, reuse, and waste-to-energy treatment or composting and decrease the amount of municipal waste going directly to landfills to below 30%. The audience learned that a number of technologies have been introduced in Vietnam but many of them have failed. Currently Vietnam doesn't have a system to separate waste, organic composting is not efficient, and it's difficult to select the appropriate technology due to a high percentage of organic material and high water content of the waste.

Japan has bilateral Memorandum of Cooperation agreements on environment / waste management with 9 countries (Indonesia, Vietnam, Singapore, Iran, Mongolia, Thailand, Myanmar, India, Qatar). Japan is engaging in a series of city to city collaborations on waste management to help with project formulation;

policy development; and capacity building. Japan's work with the Philippines was also described, which involves engagement at the national level, municipal level, and with the private sector. Japan's joint crediting mechanism provides leading low-carbon technologies to partner countries in exchange for GHG emissions credits used to achieve Japan's emissions reduction targets.

During this session, an in-depth overview of the APEC VWG on Marine Debris was shared, building on previous comments. It was noted that getting things done is often easier said than done, and it is important to consider how policies and plans discussed on a regional level can be translated to the local level. In the Philippines 70% of waste gets collected but it often ends up in open landfills because it is hard to compete with \$0 tipping fee. There is a law within the country on segregation but they don't have the infrastructure to separate it. Finally, the Philippines has difficulty finding off-takers for compost. Ideally the National Government would put up the money for waste management systems and then have the private sector run it. Some alliances for recycling have been developed and they are also looking at smaller systems and solutions that could help address the issue outside of the largest cities.

It was shared that the IFC has about \$4 billion invested in Asia for infrastructure and will be launching a cities initiative in the future. Recommendations for infrastructure development included: having an off-taker and not jumping to conclusions on how to structure a project (could be PPP, could be municipal financing etc.) Organizations like the IFC can provide funds and help cities access other commercial sources of finance including: access to capital markets (municipal bonds), direct finance, guarantees, and blended finance. They can also support cities with structuring PPPs; attract private investment and expertise; structure projects from a technical, financial and legal perspective; and organize competitive tenders to attract investors. It was shared that the IFC can also help cities build capacity and develop projects according to international best practice.

Q&A Session

Efforts to try and simplify source separation for consumers in the Philippines were described. Additionally, it was noted that when establishing an EPR-like system, stakeholders need to work with the informal system and work within the existing system. It was shared that a lot of legislators are calling for bans, but in many cases that just transfers one problem for another. In the Philippines credit guarantees or other tools are not typically used. There are other mechanisms for improving the credit worthiness but it's still very basic in the Philippines.

Closing Session

Julius Caesar Parreñas, *Coordinator, Asia-Pacific Infrastructure Partnership; Coordinator, Asia-Pacific Financial Forum; and Senior Advisor, Mizuho Bank Ltd*

The conference was closed by noting that there are a lot of challenges, but also a lot of opportunities developing a sustainable circular economy. Overall, there was a lot of interest from the private sector for projects and partnerships. The host organizations, including APFF/APIP, looked forward to working with APEC economies (Philippines, Vietnam, Indonesia and others) to hold capacity building programs to develop a pipeline of bankable projects. The first project in the Philippines was referenced here.