



**Asia-Pacific
Economic Cooperation**

Advancing Free Trade
for Asia-Pacific **Prosperity**

First APEC Low-Carbon Model Town (LCMT) Symposium *Summary Report*

Jakarta, Indonesia, 14-15 September 2017

APEC Energy Working Group

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1. Background

The APEC Low-Carbon Model Town (LCMT) Project was launched in response to the declaration at the 9th APEC Energy Ministers Meeting (EMM9), held in Fukui, Japan on 19 June 2010, where Ministers discussed low-carbon pathways to energy security through cooperative energy solutions for a sustainable APEC as well as growth strategies. Among several messages, they noted that introducing low-carbon technologies in city planning to boost energy efficiency and reduce fossil energy use is vital to managing rapidly growing energy consumption in urban areas of the Asia-Pacific region.

The Concept of Low-Carbon Town in the APEC Region (Concept) was developed under the LCMT Phase 1, and refined in the Phase 2-6. The First Edition of the Guideline and the Evaluation Sheet of the APEC Low-Carbon Town Indicator (LCT-I) System were developed in tandem with the Concept since the LCMT Phase 3 and published in November 2016. From Phase 7, the Concept and the LCT-I System will be utilised as a tool to disseminate low-carbon towns (LCT) in the APEC region.

2. Objective

The purpose of this symposium is to disseminate LCT in the APEC region through promoting the utilisation of the LCT-I System, sharing information on advanced LCT projects in the world and exploring the possibility of using the LCT-I System to develop bankable low-carbon development projects in APEC developing economies.

3. Symposium Description

The 1st APEC LCMT Symposium was held on 14-15 September, 2017 in Jakarta, Indonesia. The agenda of the symposium on the Day One consisted of five main activities as follows:

- i) Presentations of the LCT-I System and its application for the self-evaluation of LCT development in Bitung city, Indonesia, the case town for Phase 5;
- ii) Presentations of LCT development in APEC developed economy and developed countries outside the APEC region;
- iii) Presentations from three LCT-I volunteer towns of Banda Aceh City in Indonesia, Hang Tuah Jaya City in Malaysia, and Shah Alam City in Malaysia on the self-evaluation results of the LCT-I System in their respective cities;
- iv) Presentations by experts nominated from APEC economies on the reviews of self-evaluation results of the three LCT-I volunteer towns; and
- v) Panel discussion on the dissemination phase of the APEC LCMT project.

A site visit to Bumi Serpong Damai (BSD) City on the Day Two of the symposium consisted of two main activities:

- i) A brief presentation from the host of BSD City about low-carbon development plan in BSD City, and
- ii) A site tour to the Green Office Park 9 in BSD City

The agenda is in Appendix and the slides used in the presentations are listed as Annex. The slides of the presentations are also uploaded on the APERC website (http://aperc.ieej.or.jp/publications/reports/lcmt_detail.php?article_info_id=288).

4. Symposium Sessions Summary

4.1 Welcoming and Opening Remarks

Ms Ida Nuryati Finahari, Director of Energy Conservation, Directorate General of New, Renewable Energy and Energy Conservation, Indonesia addressed welcoming remarks to delegations of the 1st APEC LCMT Symposium. **Mr Tomio Harada**, Director for Natural Resources and Energy Research, International Affairs Division, Agency for Natural Resources and Energy, Ministry of Economy, Trade and Industry (METI), Japan and the Chair of the APEC LCMT Taskforce delivered opening remarks on the 1st APEC LCMT Symposium. On his remarks, Mr Harada highlighted a key message that the 1st APEC LCMT Symposium aimed to promote LCT development in order to manage rapidly growing energy consumption, especially in residential and industrial areas of the APEC region.

4.2 Highlights of the Presentations in the Morning and Luncheon Sessions

The agenda of symposium from the morning session to the luncheon session consisted of five consecutive presentations:

- i) Presentation on the introduction and overview of the LCT-I System;
- ii) Presentation on the progress of LCT development in Bitung City, Indonesia;
- iii) Guest speaker's presentation on Climate Change Actions in Palmerston North, New Zealand as an example of LCT development in APEC developed economies;
- iv) Guest speaker's presentation on Policy practices for low-carbon towns in developed countries outside the APEC region; and
- v) Presentation on low-carbon development for the Bitung Special Economic Zone (SEZ).

Ms Yuko Tanaka, APERC Researcher, presented on the LCT-I System. Figure 1 depicts the assessment framework of the LCT-I System. It is a self-assessment tool to assess and monitor the progress of each LCT development project. The tool is designed to be simple and user-friendly so that it can be easily used by central and local governments.

	Tier 1	Tier 2 (No. of Tier 3 indicators)
Directly Related	Demand	1. Town Structure (3) 2. Buildings (4) 3. Transportation (6)
	Supply	4. Area Energy System (1) 5. Untapped Energy (1) 6. Renewable Energy (1) 7. Multi Energy System (1)
	Demand & Supply	8. Energy Management System (3)
Indirectly Related	Environment & Resources	9. Greenery (2) 10. Water Management (3) 11. Waste Management (2) 12. Pollution (3)
	Governance	13. Policy Framework (4) 14. Education & Management (2)

Figure 1. Assessment Framework of APEC LCT-I System
(Source: APEC, 2017)

The assessment areas of the LCT-I System are comprehensive and uses a five-point scale evaluation. As the low-carbon measures addressed in the Concept were originally designed from the energy perspective, the assessment area of the LCT-I System is first categorised into

two main categories: measures 'directly related' to energy usage; and measures 'indirectly related' to energy usage. The assessment targets are comprised of five major items (Tier I), 14 mid-level items (Tier II), and 36 lower-level items (Tier III). In directly related measures, low-carbon measures concerning 'Demand', 'Supply' and both 'Demand & Supply' were included as Tier I items. In indirectly related low-carbon measures, aspects of 'Environment and Resources', and 'Governance' were included. These are not directly related to energy usage, but they are very important elements in LCT development. In some indicators, evaluation standards in existing assessment indicators, such as CASBEE (Comprehensive Assessment System for Built Environment Efficiency) and LEED (Leadership in Energy and Environmental Design), are referenced and included.

Dr Marmelda Sidangoli, Bitung City Planning Agency, delivered a presentation on the self-evaluation result of the LCT-I System for Bitung City, North Sulawesi Province, Indonesia. The low-carbon development focuses on the industrial area of SEZ outlined in Figure 2. According to Dr Sidangoli, the LCT-I System is a useful tool for undertaking self-assessment of low-carbon development. It assists the city government in identifying potential improvements on low-carbon measures in transport, buildings, and energy supply management. Using the LCT-I System, the government of Bitung City identified that low-carbon development policy has gained broader support from the residents and the local leaders of Bitung City.



Figure 2. The Bitung City Masterplan for the Special Economic Zone, Indonesia
(Source: The Government of North Sulawesi Province, Indonesia, 2017)

Councillor Brent Barrett of Palmerston North, New Zealand, presented low-carbon plans and actions in Palmerston North to address climate change as an example of APEC developed economies. He introduced a Hawken analysis to evaluate the climate change actions undertaken by Palmerston North to reduce carbon emissions (Figure 3). The Hawken analysis can be used as a reference to improve the LCT-I System that incorporates quantitative evaluation on low-carbon energy and uses qualitative analysis to evaluate food and food waste management as well as human capital development for climate change actions.

Rank	Solution	Sector	TOTAL ATMOSPHERIC CO ₂ -EQ REDUCTION (GT)	NET COST (BILLIONS US \$)	SAVINGS (BILLIONS US \$)
1	Refrigerant Management	Materials	89.74	N/A	\$-902.77
2	Wind Turbines (Onshore)	Energy	84.60	\$1,225.37	\$7,425.00
3	Reduced Food Waste	Food	70.53	N/A	N/A
4	Plant-Rich Diet	Food	66.11	N/A	N/A
5	Tropical Forests	Land Use	61.23	N/A	N/A
6	Educating Girls	Women and Girls	59.60	N/A	N/A
7	Family Planning	Women and Girls	59.60	N/A	N/A
8	Solar Farms	Energy	36.90	\$-80.60	\$5,023.84
9	Silvopasture	Food	31.19	\$41.59	\$699.37
10	Rooftop Solar	Energy	24.60	\$453.14	\$3,457.63

Figure 3. Hawken Analysis on Climate Change Actions in Palmerston North, New Zealand
(Source: Councillor Brent Barret of Palmerston North, 2017)

Palmerston North hosts large-scale industrial wind farms that feed into the economy's power grid. The electricity generated from the wind farms are more than enough to feed the electricity demand of residential and small business usage in Palmerston North. There are some solar PV projects for large-scale rooftop installations that have payback periods of less than 10 years without government subsidy. An example of this type of project is the commissioning of a solar farm on top of the Civic Administration Building in 2014 that makes the building almost carbon neutral.

Palmerston North also has introduced reduced food waste and plant-rich diet program that was aimed at reducing carbon footprints while fighting poverty that has rescued and given away 1.5 million food items over the last six years. The city also installs an online energy monitoring system that allows residents to observe energy consumption in real time. This is particularly a good education tool for primary schools.

Dr Tadashi Matsumoto, Project Manager, Urban Green Growth/Knowledge Sharing Regional Development Policy Division, OECD presented policy practices for LCT in OECD countries that consisted of two parts: key policy considerations for LCT development, and policy practices in the OECD and some non-OECD countries that are based on the OECD's green cities.

LCT needs to consider the roles of cities, policy complementarities and synergies, as well as governance and financing arrangement. Policy practices for LCT in OECD countries consist of eleven categories in order to:

- Facilitate in-fill redevelopment;
- Promote low-carbon neighbourhoods;
- Charge private car use to finance public transport;
- Develop shared mobility and non-motorised transport;
- Reduce energy intensity in industry;
- Reduce energy consumption and waste from buildings;
- Reduce municipal waste and promote recycling and waste-to-energy;
- Increase distributed renewable energy in cities;
- Supply skilled workforce for the green economy;
- Facilitate connections to spur green-tech innovation; and
- Increase demand for low-carbon products and services.

Dr Matsumoto concluded that low-carbon targets can be best achieved when they are addressed together with economic and social targets. Effective coordination between central government and metropolitan government needs to be established as urban activities extend beyond administrative boundaries.

Dr Ricky Toemandoek of the North Sulawesi Provincial Government delivered a presentation during the luncheon session that focused on low-carbon development for the Bitung SEZ. The North Sulawesi Provincial Government used the LCT-I System to conduct a self-evaluation on low-carbon development as documented in the Masterplan of Bitung SEZ. Figure 4 shows the radar chart diagram of self-assessment results of low-carbon development in Bitung SEZ.

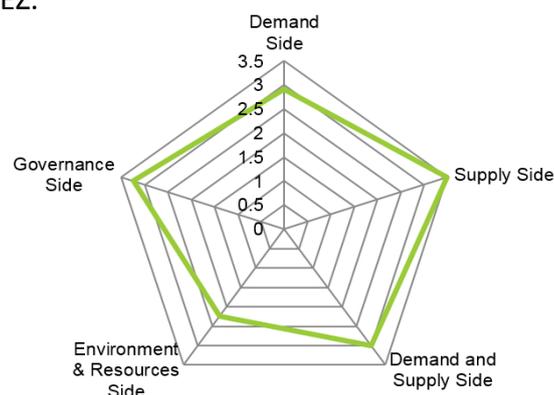


Figure 4. Self-Assessment Results of Low-Carbon Development in Bitung SEZ
(Source: Bitung City Planning Agency, 2017)

Dr Toemandoek suggested close cooperation among respective stakeholders in Bitung City is necessary to achieve higher measurement outcomes as stipulated in the LCT-I System. Respective stakeholders need to include central government agencies, state-owned utility companies, and local government. The North Sulawesi Provincial Government has established future action plan for low-carbon development in Bitung SEZ as follows:

- Ensuring alignment with existing local and central government’s policies, regulatory frameworks and institutional set-up;
- Reducing energy consumption through the use of clean, green energy generation and more energy efficient technologies and practice;
- Ensuring an efficient and environmentally balanced management of resources through the utilisation of the best available low-carbon technologies for industry, commercial and residential areas, for solid waste and wastewater management, for forestry and land use, and for transportation;
- Applying an accurate, transparent and functional monitoring, reporting and verification system (MRV) of GHG emissions and additional sustainable development impacts;
- Promoting low-carbon vehicles to reduce fuel consumption; and
- Reducing fossil fuel energy usage by promoting eco-driving contributes to the low-carbon development in Bitung SEZ.

4.3 Highlights of the Presentations in the Afternoon Session

The afternoon session presentations consisted of four main agendas:

- i) Presentations of the self-assessment results of the LCT-I System by three LCT-I volunteer towns selected from APEC developing economies (Banda Aceh city in Indonesia, Hang Tuah Jaya City and Shah Alam city in Malaysia);
- ii) Experts' review presentations on the LCT-I System application in the three LCT-I volunteer towns;
- iii) Certificate giving ceremony for the three LCT-I volunteer towns; and
- iv) Discussion on the dissemination phase of the APEC LCMT project.

4.3.1 LCT-I System Self-Evaluation Result of Banda Aceh City, Indonesia

Mr Bahagia, Director of Banda Aceh City presented the results of self-assessment on low-carbon development in the city using the LCT-I System that is presented in Figure 5. He acknowledged that Banda Aceh is still in the early stages of redevelopment after the great earthquake and tsunami that destroyed the city in 2004. Banda Aceh City has established regulatory framework to implement low-carbon development concepts. Small-scale actions have been implemented to manage the environment, transportation, and energy demand. The city adopted the LCT-I System to set up future targets on low-carbon performance, especially for managing the environment and resources, transportation, and energy supplies.

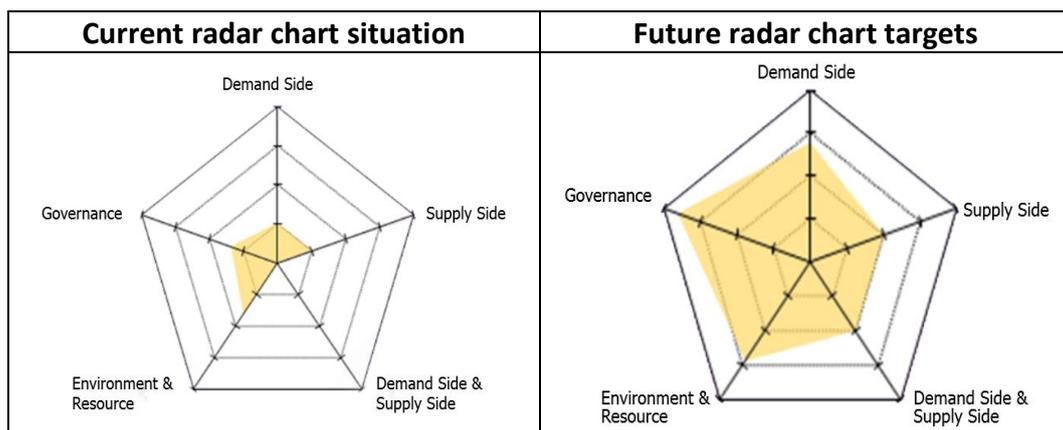


Figure 5 LCT-I Self-Evaluation Results of Banda Aceh City

(Source: Banda Aceh City, 2017)

The city of Banda Aceh has seven LCT development strategies through developing a better public transport system, increasing the usage of renewable energy and energy-efficient equipment, installing an energy management system, improving the waste management system, expansion of green space, introducing green building policy and developing a disaster-risk mitigation plan. The city also encourages greater community participations to achieve low carbon model town.

Mr Michinaga Kohno, President and Chief Executive Officer of the Michi Creative City Designers Inc., as a review expert delivered a review presentation on the LCT-I System application in Banda Aceh City. Figure 6 outlines expert reviews on the LCT-I System application in the Banda Aceh City, Indonesia.

The scores at Tier II in Figure 6 shows fairly well-balanced pattern except 'Demand & Supply', which is represented by energy management systems and smart grids, which are applicable to areas with advanced energy sources and demand fluctuations. Untapped methane from landfill and PV solar are proposed to be developed as well as other potential renewable energy sources to improve the resilience of the city.

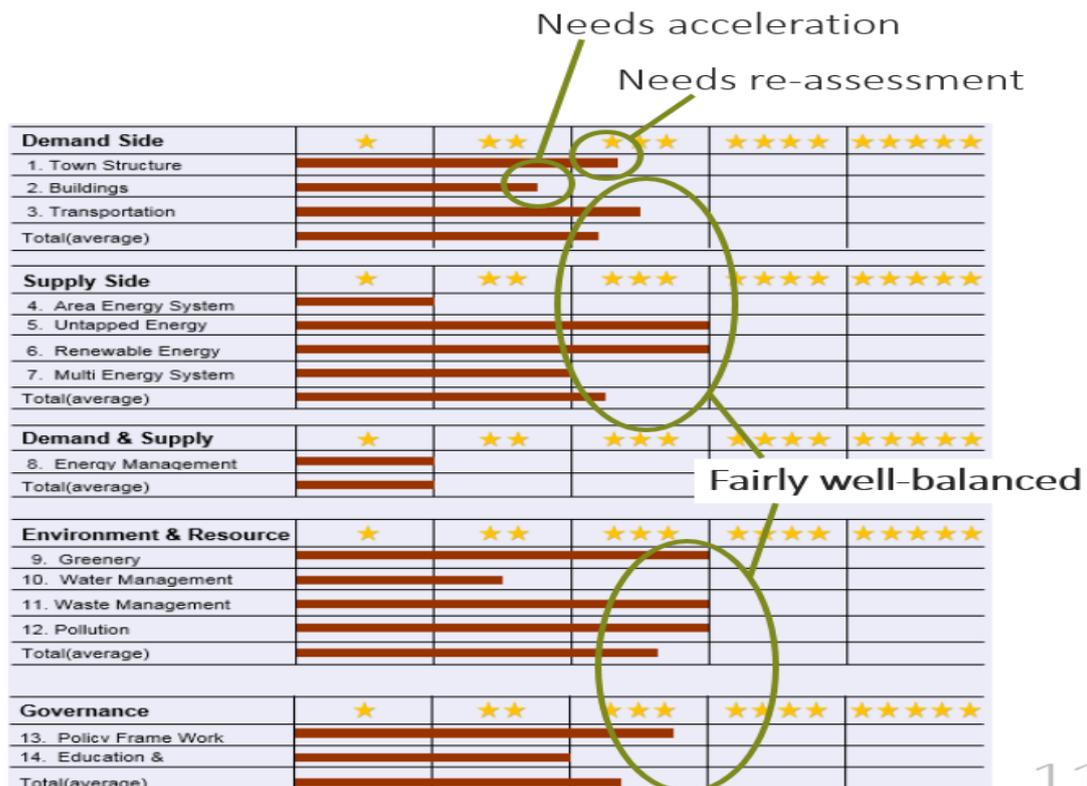


Figure 6. Expert Review of the LCT-I System Application to the Banda Aceh City, Indonesia

(Source: Michinaga Kohno, 2017)

Further improvement is proposed for the building and transportation. The adoption of green building guidelines that have been established by the central government can further improve low-carbon development in buildings. The acceleration of transport network expansion for bus-rapid transport and introduction of other low-carbon transportation measures are needed to improve low-carbon development in the transport sector.

Mr Kohno proposed a roadmap for LCT development in Banda Aceh City that contains policy actions for demand and energy supply management, improvement plan on resilience and disaster risk mitigation, and development strategy for renewable energy sources. Mr Kohno also suggested Banda Aceh City adopts the green building guideline established by the central government of Indonesia for building development in Banda Aceh City.

4.3.2 LCT-I System Self-Evaluation Result of Hang Tuah Jaya City, Malaysia

YB Datuk Ar. Hj. Ismail Bin Hj. Othman, Chairman of the State Committee for Housing, Local Government and Environment, made a presentation on low-carbon development and self-assessment results of Hang Tuah Jaya City, Malaysia.

The city incorporates the framework of Melaka Green City Action Plan to develop a Hang Tuah Jaya master plan for LCT. The LCT development is built on four elements: urban development, transportation, infrastructure, and buildings. The results of self-evaluation and future targets on low-carbon development using the LCT-I System is presented in Figure 7. The figure shows that the city will aim to address demand factors by: creating master plan development that considers the element of integration and interaction between land use, and implementing transit-oriented development based on the rail transport that is expected to be completed in 2026. Hang Tuah Jaya City identified sufficient progress on low-carbon governance and adequate management on water, energy resource, and the environment. The city identified areas for future improvement in the energy demand, energy supplies, and energy management system.

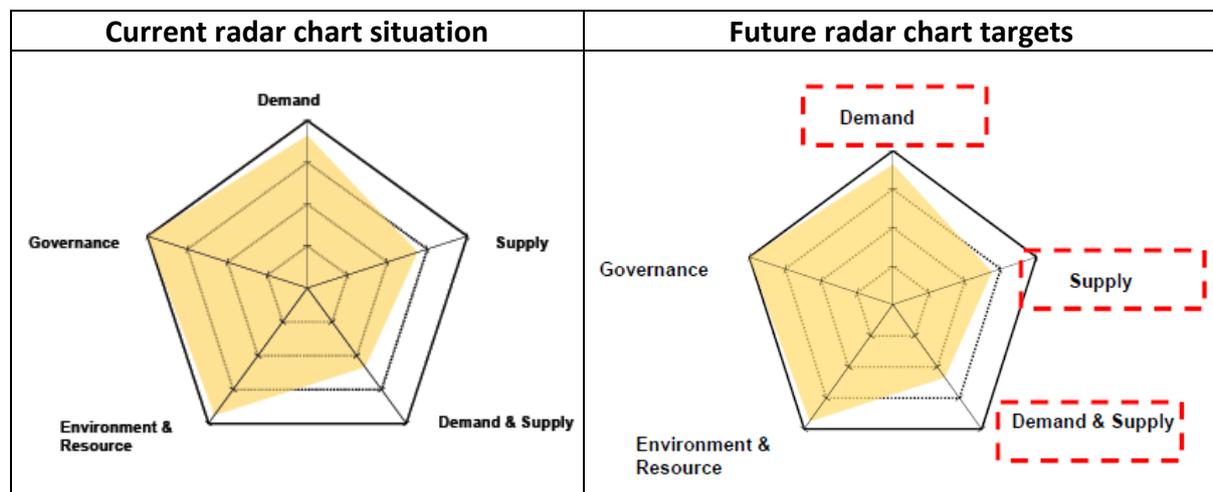


Figure 7 LCT-I System Self-Evaluation Results of Hang Tuah Jaya City

(Source: Hang Tuah Jaya City, 2017)

Hang Tuah Jaya City has a plan to achieve improvement on low-carbon development by 2030 through further development in 'Demand', 'Supply', and 'Demand & Supply' while also strengthening 'Environment and Resources' and 'Governance'. The development plan that is currently underway is to improve the transportation sector through the "My High-Speed Rail Project" that is expected to be completed by 2026. The project will improve public transport from the train stations to the city. Hang Tuah Jaya City is also seeking an advice and recommendation on the utilisation of untapped energy resources and the development of a multi-energy system for the city.

Dr Hung-Wen Lin, Project Manager, Industrial Technology Research Institute of Chinese Taipei, conducted a review on the low-carbon development plan of the Hang Tuah Jaya City that is summarised in Table 1. He suggested short-term and long-term action plans to improve low-carbon development in Hang Tuah Jaya City. The short-term measures include improved management of energy and water and the inclusion of solar rooftop program for buildings.

The long-term actions focus on allocation of wider green open area and utilisation of energy efficient appliances as well as the installation of solar photovoltaic as renewable energy sources.

Table 1. Expert review of the LCT-I System application to Hang Tuah Jaya City, Malaysia

Question	Excellent	Good	Average	Below Average	Poor
Information of the LCT-I Volunteer Town		✓			
Understanding of each LCT-I System indicators			✓		
Explanation (evidence) provided for the self-evaluation			✓		
Collection of data necessary for the evaluation			✓		
Calculation of CO ₂ emissions		✓			

(Source: Hung-Wen Lin, 2017)

Dr Lin concluded that the LCT-I System is a good tool for diagnosing the performance of low-carbon development in selected town and suggested data and information improvements would be beneficial for understanding energy saving benefits for LCT.

4.3.3 LCT-I System Self-Evaluation Result of Shah Alam City, Malaysia

Mr Shukri Mohammad Hanin, Deputy Mayor, Shah Alam City Council, Malaysia, presented low-carbon development program in Shah Alam City. Figure 8 shows the self-assessment result of the LCT-I System for Shah Alam City, Malaysia that was used to evaluate the progress of low-carbon development in the city. Based on the self-evaluation result, the overall score was 3.9 out of 5 for 2016. Shah Alam City aims to achieve an overall score of 4.9 by 2030. The city scored high for ‘Demand’, ‘Environment and Resources’ and ‘Governance’ indicators. Shah Alam City has action plans to improve low-carbon development by 2030 through improvement in public transport efficiency, green buildings, energy and waste management, and energy efficient appliances.

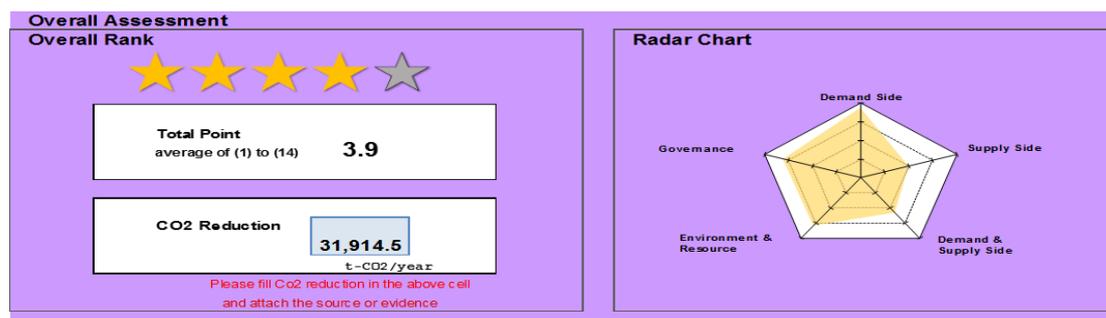


Figure 8. LCT-I System Self-Evaluation Results of Shah Alam City, Malaysia
(Source: Shah Alam City, 2017)

Dr Hung-Wen Lin, as the review expert, evaluated the Shah Alam Low Carbon 2030 Action Plan. The plan already incorporates planning for efficient transportation, the inclusion of nature into the built environment, environmentally sustainable solid waste management, and effective use of energy and water resources as well as management of the city based on green technology. He suggested that Shah Alam City undertakes short-term and long-term actions to reduce carbon footprints of the city through green procurement, transportation, and low-carbon buildings.

Dr Lin concluded that Shah Alam city needs to allocate more effort to achieve the target of becoming a Low Carbon City by 2030. He suggested energy efficient designs for high-rise buildings in the central business district (CBD), the implementation of green transportation plan to reduce carbon emissions and the adoption of low-carbon performance standards.

4.3.4 Experts' Feedback on the LCT-I System

Mr Kohno identified structural problems in the LCT-I System whereby some indicators can only be applied to advanced APEC economies that have mature urban development and administration regulations. The Tier I items have a different number of Tier II items which creates unintended weighting on Tier II scores onto Tier I evaluation results. Mr Kohno proposed improving the the LCT-I System by employing a generally accepted maturity model of five steps to 1-5 star scale, separate qualitative and quantitative indicators, and to increase indicators of Tier II and III to make them equally effect Tier I and Tier II respectively.

Dr Lin praised the LCT-I System as good indicators to diagnose LCT progress. Based on the review on low-carbon development progress in Hang Tuah Jaya City and Shah Alam City, Malaysia, Dr Lin suggested that adequate data needs to be provided to make a better estimate of the energy saving benefit from LCT. The cities that are being reviewed also need to demonstrate policy implementation and an action plan on LCT development.

4.3.5 Certificate Giving Ceremony for the Three LCT-I Volunteer Towns

Mr Harada presented a certificate to three cities. It certified that they were selected as the LCT-I volunteer town of the LCMT Phase 7. As a result of being successfully identified through the self-evaluation review process of the LCT-I System, a feasibility study will be conducted to support their ongoing efforts in LCT development in the LCMT Dissemination Phase 1 (next phase).

4.3.6 Discussion on the Dissemination Phase of the APEC LCMT Project

Dr Kazutomo Irie, General Manager, APERC facilitated discussion on the dissemination phase of the LCMT Project at the final session of the Day One. Five members of discussants were invited to deliver a brief presentation on specific topics which was followed by a discussion involving all participants of the symposium.

Mr Hiroki Yoshida, Deputy Director, International Affairs Division, METI, Japan outlined three objectives of the dissemination phase of the LCMT project: to disseminate basic ideas and effective approaches of the Concept through utilising the LCT-I System; to provide feasibility studies of a specified area of low-carbon development projects to the LCT-I volunteer towns; and to share best practices and real-world experiences of LCT design with planners and policy makers throughout the APEC region. Figure 9 depicts the LCMT project from project phase 1 to phase 7 and dissemination phase 1 and phase 2.

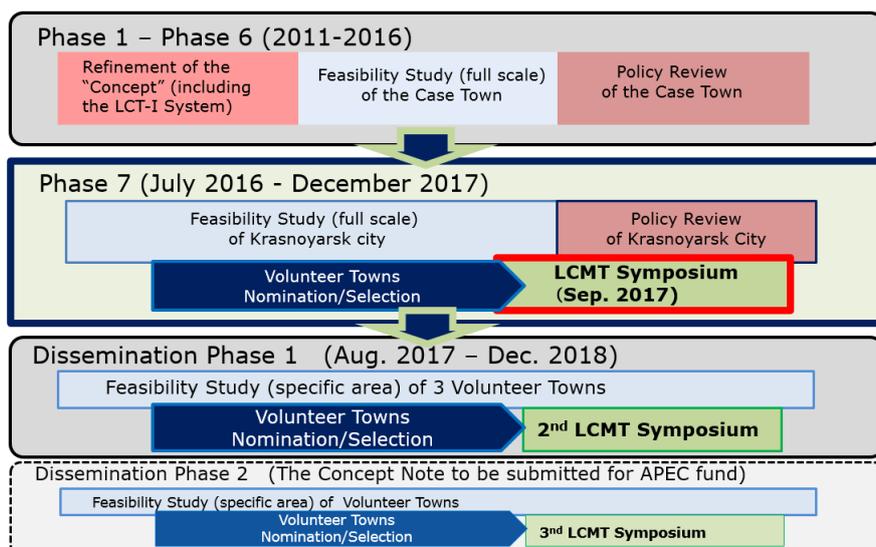


Figure 9. Program and agenda of APEC LCMT Project
(Source: Ministry of Economy, Trade and Industry, Japan, 2017)

Mr Javier Cobos, Senior Advisor to the Director-General, Electric Energy Saving Trust Fund, Mexico, presented a funding arrangement involving the World Bank and the *Secretaria De Energia* (a government agency in Mexico) to finance low-carbon development program. He also highlighted the need for capacity building of energy efficiency at the municipality level.

Mr Kazuo Yokota, Director General of Smart Community Department, New Energy and Industrial Technology Development Organisation (NEDO), Japan explained NEDO's approach on low-carbon cities through demonstration projects of smart community on energy management system. He showed smart grid demonstration projects in Indonesia and Malaysia as mechanisms to facilitate collaboration among smart grid organisations , to exchange ideas and to share best practices on energy issues, among other objectives.

Ms Louise Vickery, Senior Program Manager, International Energy Agency (IEA) showed that low-carbon developments could be a model for affordable approaches to local area planning. She suggested that availability of tools in the development and planning process would be very beneficial to assist low-carbon development plans at the central, provincial, and local government levels.

Dr Francesco Fuso Nerini, Assistant Professor, KTH – Royal Institute of Technology, Sweden further discussed applicable tools to plan for low-carbon development. He emphasised on the need for open source modelling tools that can be used by various organisations at the international, economy, and city levels to conduct low-carbon energy planning. Further cooperation with international development banks and international organisations could provide support training and low-carbon development projects.

Closing Remarks:

Dr Kazutomo Irie, General Manager, APERC concluded the 1st APEC LCMT Symposium and discussed the way forward for the project with the participants. He also announced that the 2nd APEC LCMT Symposium will be held in Da Nang, Viet Nam in September 2018.

5. Site Visit to Bumi Serpong Damai (BSD) City

On the 2nd day of the symposium, the Directorate General of New, Renewable Energy and Energy Conservation (DGREE) of Indonesia organised a site visit to the Bumi Serpong Damai (BSD) City.

BSD City is managed by Sinar Mas Land, a private developer and covers a total land area of around 6,000 hectares consisting of housing, business, and commercial properties. The BSD City is part of the local government of Tangerang city.

Sinar Mas Land has adopted green building approaches for the development of properties and commercial buildings such as the Green Office Park 9, one of the commercial buildings in BSD City, which won an award from DGREE in 2017 for, energy efficient building in the new build category. The Green Office Park 9 that was built based on the green building concept, consists of five floors that were designed to be energy efficient, water saving, water recycling system, rainwater harvesting system to manage energy and water usage.

The site visit agenda was started by a presentation from the Managing Director, President Office, Sinar Mas Land on the approach of low-carbon development in BSD City. He discussed how low-carbon development in BSD City had attracted investment from international companies that wished to comply with global sustainability initiatives of the United Nation.

Total carbon emission reduction from energy saving programs in BSD City is 3,970 tCO₂/year. This saving was obtained through the efficient management of air conditioning, power supplies, lighting system and water usage. Green building development in BSD City offers energy savings during operation and maintenance although it requires higher initial capital investment. The average cost increase was 4% of that capital expenditure for conventional buildings according to the BSD City.

Further CO₂ reduction through an enhanced transportation system is currently underway through the creation of a transport loop system interconnecting commercial and office buildings, housing and apartments, and bus stops and the train station in BSD City. Further reduction in carbon emission footprints is expected to be obtained when this project commences operation in 2018.

The development and operation of BSD City offers greater flexibilities in terms of investment and city planning. Effective public consultation with the residents of BSD City as well as the South Tangerang City government is needed to ensure that low-carbon development in BSD City favours the residents of BSD City and aligns with the development program of South Tangerang City.

6. Symposium Analysis

Including the Project Overseer and organiser, 57 individuals participated in the 1st APEC LCMT Symposium, coming from Australia, China, Indonesia, Japan, Malaysia, Mexico, New Zealand, Chinese Taipei, Thailand, International Energy Agency (IEA) and OECD Representatives.

Ten attendees completed the APEC project evaluation surveys; they were asked to rate a number of aspects of the symposium using the agreement levels of 'Strongly Agree', 'Agree', and 'Disagree'.

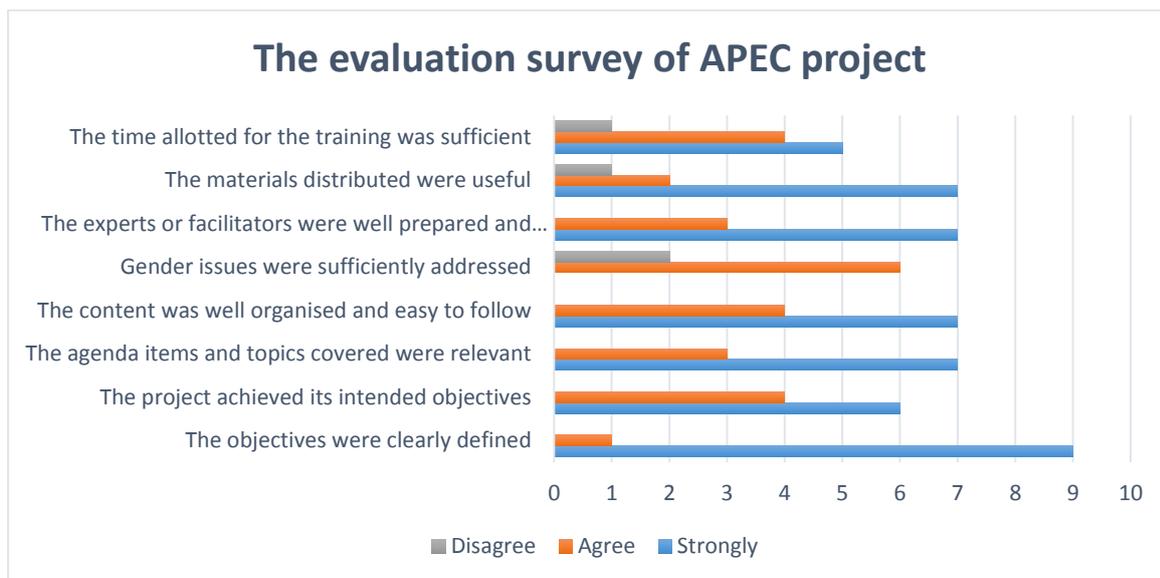


Figure 10. Summary of Evaluation Survey of the 1st APEC LCMT Symposium

According to the evaluation survey in Figure 10, the symposium objectives were clearly defined and had been achieved through relevant coverage of symposium agenda and topics, and adequate preparation of experts and facilitators. The survey respondents all agreed that the 1st APEC LCMT Symposium was well organised and delivered effectively and at a reasonable pace. The symposium provided participants who used to focus on building energy saving to consider broader aspects of LCT development including transportation, renewable power, water, and waste management in the design of LCT.

Further improvement were advised for the next round of APEC LCMT Symposium to extend the use of the LCT to support individual cities in progressing toward low-carbon development. There were suggestions to discuss the "selected areas" of the low-carbon measures as the focus points of feasibility study on each of the LCT-I volunteer towns, and to invite more municipality officials from the travel-eligible economies to make them understand the ways of self-evaluation by the LCT-I System. One of the survey respondents suggested that further improvement would be for APEC to consider providing guidelines to access financial support for building LCT projects. There was also a suggestion for APEC to submit a proposal to the Secretary of Energy for the development of an LCMT related project in Mexico.

There was feedback from **Ms Munlika Sompranon**, one of the workshop participants from Thailand, that suggested some improvements for the next LCMT Symposium in Viet Nam in 2018. She expects LCT volunteer towns will share detail experience on the implementation of low carbon development policies in their cities. In particular, lessons learned from the low carbon development that has been implemented and strategies for integrating each factor in the low carbon town development, namely: demand, supply, environment, energy management, and education.

In general, the participants found the symposium useful in promoting LCT in APEC economies. This was accomplished through representatives from the LCT-I volunteer towns presenting their low-carbon development plans and program, lessons learned from LCT development in advanced economies, and experts sharing their knowledge.

Appendix : Agenda

Thursday, 14 September 2017 Meeting Emcee: Dr Gigih Udi Atmo, Researcher, APERC	
8:30- 8:55	Registration:
9:00- 9:10	Welcome Remarks Ms Ida Nuryatin Finahari , Director of Energy Conservation, Directorate General of New and Renewable Energy and Energy Conservation, Ministry of Energy and Mineral Resources, Indonesia
9:10- 9:20	Opening Remarks Mr Tomio Harada , Director for Natural Resources and Energy Research, International Affairs Division, Agency for Natural Resources and Energy, Ministry of Economy, Trade, and Industry (METI), Japan and Chair of APEC Low-Carbon Model Town Taskforce (LCMT/TF)
9:20- 9:40	Presentation (1) on the APEC Low-Carbon Town Indicator (LCT-I) System by Asia Pacific Energy Research Centre (APERC) Ms Yuko Tanaka , Researcher, APERC
9:40-10:10	Presentation (2) by the host town (briefing of LCT development project in the host town and the LCT-I System application) Dr Marmelda Sidangoli , Head of Research and Development of Bitung City Planning Agency
10:10-10:30	Photo Session and Coffee Break
10:30-11:00	Presentation (3) of a guest speaker (LCT in a developed APEC economy) Mr Brent Barret , Councillor of Palmerston North, New Zealand
11:00-11:30	Presentation (4) of a guest speaker (LCT in a developed country outside the APEC region) Dr Tadashi Matsumoto , Project Manager, OECD
11:30-13:00	Luncheon Session Presentation (5) by Dr Ricky Toemandoek , Head of Development Planning Agency, North Sulawesi Provincial Government
13:00-13:30	Presentation (6) on the LCT-I System application by Banda Aceh City, Indonesia (Background information and self-evaluation results of the LCT-I System) Mr Bahagia , Secretary of the Banda Aceh City government, The City Government of the Banda Aceh City
13:30-13:50	Presentation (7) on evaluation of the LCT-I System application of Banda Aceh City, Indonesia by the review team Mr Michinaga Kohno , President and Chief Executive Officer, Michi Creative City Designers Inc.
13:50-14:20	Presentation (8) on the LCT-I System application by City of Hang Tuah Jaya, Malaysia (Background information and self-evaluation results of the LCT-I System) YB Datuk Ar. Hj. Ismail Bin Hj. Othman , Chairman of the State Committee for Housing, Local Government and Environment
14:20-14:40	Presentation (9) on evaluation of the LCT-I System application of City of Hang Tuah Jaya, Malaysia by the review team, Dr Hung-Wen Lin , Project Manager, Industrial Technology Research Institute
14:40-15:10	Presentation (10) on the LCT-I System application by Shah Alam City, Malaysia (Background information and self-evaluation results of the LCT-I System) Mr Shukri Mohammad Hanin , Deputy Mayor, Shah Alam City Council
15:10-15:30	Presentation (11) on evaluation of the LCT-I System application of Shah Alam City, Malaysia by the review team Dr Hung-Wen Lin , Project Manager, Industrial Technology Research Institute
15:30-15:45	Coffee Break
15:45-16:00	Certificate giving ceremony for the LCT-I System application to the three LCT-I volunteer towns Mr Tomio Harada , Director for Natural Resources and Energy Research, International Affairs Division, Agency for Natural Resources and Energy (ANRE), Ministry of Economy,

	Trade and Industry (METI), Japan and Chair of APEC Low-Carbon Model Town Taskforce (LCMT/TF)
16:00-17:20	<p>Discussion on the dissemination phase of the APEC LCMT Project</p> <p>Facilitator: Dr Kazutomo Irie, General Manager, APERC</p> <p>Discussant: Presentation (12) by Mr Hiroki Yoshida, Deputy Director, International Affairs Division, ANRE, METI, Japan Presentation (13) by Mr Javier Cobos, Senior Advisor to the Director General, Electric Energy Savings Trust Fund, Mexico Presentation (14) by Mr Kazuo Yokota, Director General, Smart Community Department, New Energy and Industrial Technology Development Organization (NEDO), Japan Presentation (15) by Ms Louise Vickery, Senior Programme Manager, Energy Efficiency Renewable Energy Integration, International Energy Agency (IEA) Presentation (16) by Dr Francesco Fuso Nerini, Assistant Professor, KTH – Royal Institute of Technology</p>
17:20-17:30	Closing Remarks: Dr Kazutomo Irie , General Manager, APERC
Friday, 15 September 2017 Site Visit	
7:30-12:30	Site visit to BSD City, Tangerang, Banten