

**Experience of Hong Kong on Energy Efficiency and Conservation for
Workshop on Green Development in the Belt and Road Initiative in
New York City, USA**

Keynote Speech by Ir Alfred Sit JP, Director of Electrical & Mechanical Services

Distinguished guests, ladies and gentlemen, Good morning! It gives me great pleasure to be here today to share the experience of Hong Kong, China on energy efficiency and conservation.

First of all, let me briefly introduce Hong Kong to you. Hong Kong, a southern city of China, has undergone tremendous transformation and growth from a fishing village before 1930s to an entrepot in 1960s, and now to an international finance centre. Being one of most densely populated city in the world, Hong Kong has a population of about 7.2 millions, living in about 1,100 square kilometers of land with a population density of about 6,500 people per square kilometer.

Being part of China and a world-class city in Asia, Hong Kong plays an important role as a “super-connector” between Mainland China and other countries under the Belt and Road Initiative (BRI). Other countries can make use of the unique advantages of Hong Kong to extend their reach to the Far East.

The unique status that Hong Kong enjoys under the “one country, two systems” principle and the very strong links with Mainland China continue to make Hong Kong the preferred location for doing business in Asia.

Hong Kong is an export-oriented economy and an international gateway to Mainland China, offering unique physical and intangible connectivity to the Mainland with privileged trade and social assess. Companies are invited to go to Hong Kong and make full use of the city’s advantages in tapping the massive Belt and Road markets.

Hong Kong is capable of offering all sorts of necessary services such as financial, legal and dispute resolution, ICT, railway construction and operation, as well as various construction and engineering services to overseas companies, and we are very willing to do so.

Next, I am going to share with you our experience and journey in energy efficiency and conservation for your reference.

For more than 20 years, Hong Kong has been working very hard to promote energy efficiency and conservation, as well as renewable energy. In old days, people's awareness and the community's investment in these areas were not high. Besides, experienced professionals in these areas were not too many.

In 2015, our annual energy end-use is about 288,000 Terajoules (TJ). According to a recent survey, Hong Kong is one of the APEC economies having the lowest energy intensity even comparing with the European countries.

In the next slides, I will share with you what we have been doing to overcome these challenges.

In 1994, the Government of the Hong Kong Special Administrative Region set up the Energy Efficiency Office under the Electrical and Mechanical Services Department (EMSD), which I am currently in charge of, to promote energy efficiency and conservation as well as renewable energy.

In 1995, the "Voluntary Energy Efficiency Labeling Scheme" was launched to arouse public attention to the energy efficiency of household and office appliances by providing energy-efficiency product data to facilitate consumers to make smarter choices when purchasing such appliances.

In 1997, the "Hong Kong Energy End-use Data" was firstly published to inform the community of the energy end-use data. This has been a very useful tool for identifying areas of concern and facilitating policy making.

In 1998, the "Building Energy Code" was firstly published and the voluntary "Hong Kong Building Energy Efficiency Registration Scheme" was launched to promote energy efficiency in buildings.

In 2001, the "Fresh Water Cooling Tower Scheme" was launched. The use of fresh water cooling towers could save electricity up to 20%, compared with air-cooled air-conditioning systems.

In recent years, we enacted legislation to promote the participation of the public and the trade in energy efficiency and conservation.

In 2009, we implemented the “Energy Efficiency (Labeling of Products) Ordinance” to introduce mandatory energy efficiency labeling for major household appliances.

In 2012, we implemented the “Buildings Energy Efficiency Ordinance” to establish statutory energy efficiency standards for building services installations, and to open up a new role of professional engineers, the Registered Energy Assessors, for providing professional services to developers, owners and management companies, etc. for certification of compliance and carrying out energy audits.

In terms of infrastructures, we set an example by taking the lead in constructing Hong Kong’s first District Cooling System in the Kai Tak Development Area, which was first commissioned in 2013, to promote the use of energy-efficient air-conditioning systems. This could save up to 35% of electricity as compared with air-cooled air-conditioning systems. Additional district cooling systems are being proposed for the new development areas in Hong Kong.

In order to set targets to combat climate change, the Hong Kong Government published two major plans in recent years.

In 2015, the “Energy Saving Plan for Hong Kong’s built Environment 2015-2025+” set a new energy intensity reduction target of 40% by 2025, using 2005 as the base. This year, we also set a new carbon intensity reduction target of 65-70% by 2030, also using 2005 as the base, in the “Hong Kong’s Climate Action Plan 2030+”.

The Paris Agreement, the world’s first comprehensive climate agreement, agreed to limit the global average temperature increases to well below 2°C above the pre-industrial levels and make efforts to limit warming to 1.5°C. To reach this ambitious but necessary target, Hong Kong has developed the “4Ts” as its operational framework. In short, carbon-related reduction “Targets” and ”Timeline” are established, and the efforts made can be shown with appropriate metrics so that there is “Transparency” and it is everyone’s effort matters so we must work “Together”.

It is a common interest in the community to protect the environment by further reducing energy consumption and hence the emission of greenhouse gases. In this context, Hong Kong will keep reviewing its targets and action plans towards a more livable and sustainable city. Let's work together to combat climate change and create a more livable and sustainable future.

To achieve the targets of reducing energy intensity and carbon intensity, we need the joint efforts from different sectors in the community. Our strategies are "Lead-Pull-Push", i.e. lead by examples; public engagement and participation; as well as legislation.

Over the past years, EMSD has played a key role to showcase energy efficiency and conservation practices to the community. We assisted various government departments to set energy saving targets with timeline, thus achieving an overall electricity consumption reduction by 16% from 2003 to 2014, with a further 5% saving target by 2020. To achieve this saving target, we are carrying out energy audits and undertaking energy saving projects for government buildings, and we continue to propose good housekeeping measures.

In addition to government buildings, we collaborated with the trade and conduct retro-commissioning in pilot government and commercial buildings. With the experience gained from these pilot projects, we published the first "Technical Guidelines on Retro-commissioning of Buildings" for the trade earlier this year. We are now conducting a series of experience-sharing and training sessions to promote retro-commissioning of buildings.

In order to promote energy efficiency and conservation to the community, we take various approaches and means such as TV commercials, newsletters, websites, seminars and talks, etc. We have also an Educational Path in the EMSD Headquarters building, to promote, among others, energy efficiency and conservation as well as renewable energy to the public. Apart from the above, we provided various financial incentives to developers, building owners and non-government organizations, etc. to improve their building energy efficiency.

EMSD has been instrumental in implementing Hong Kong's first two energy efficiency ordinances, focusing on "plug-in" appliances and "built-in" building services installations.

With over 20 years' efforts, we have learnt many valuable lessons in promoting energy efficiency and conservation by implementing the "Lead-Pull-Push" strategies which have laid a solid foundation for Hong Kong to achieve higher energy saving targets. For the Belt and Road countries to be developed in a more sustainable way, these strategies should be worth considering.

The Hong Kong Government takes climate change seriously. The Steering Committee on Climate Change was established in 2016 to steer and co-ordinate the climate actions of various bureaux and departments. This committee is chaired by the Chief Secretary for Administration to demonstrate the Government's commitment and determination. The government's effort alone is definitely far from adequate. We need the joint efforts of the community to assist Hong Kong in achieving a high level of energy efficiency.

Engineers and architects, etc. make buildings more and more energy efficient. Registered Energy Assessors make sure that new buildings and major renovations comply with the statutory requirements, and they carry out energy audits to identify energy management opportunities. Developers, property management companies, schools and the public proactively respond to various publicity and promotional campaigns such as energy saving charter schemes and competitions.

The two power companies in Hong Kong have been doing their good jobs. On the supply side, they keep improving the efficiency of their power plant and increasing the fuel mix with clean energy sources. On the demand side, they launch various promotional and incentive programmes, operate demonstration centres, carry out energy audits and provide funding support for energy saving projects with a view to encouraging and facilitating their customers to conserve energy.

Not only to solve mass transportation problem and improve the roadside air quality in the community, the development of railway helps conserve energy. The Hong Kong Government has long established railway as its backbone transportation system. Our electrified railway was first commissioned in 1979 with only one line of 16 kilometers in length. Now, it's been extended to 12 lines of 231 kilometers in total length. The

average weekday patronage is over 5.5 million. Our railway network is still being developed. It is anticipated that the total length will reach 309 kilometers by 2031. At that time, the share of railway in the public transportation market will increase from the existing 40% up to 50%.

A high-speed railway, the Guangzhou-Shenzhen-Hong Kong Express Rail Link, of 26 kilometers in length will provide an express linkage between Mainland China and Hong Kong in 2018. This will further strengthen the role of Hong Kong as the “super-connector” between Mainland China and other countries.

Now, let me introduce the recent development of Hong Kong in the adoption of renewable energy (RE). Hong Kong does not have favourable conditions for large-scale commercialized RE generation. Hong Kong has very limited land, much of which is hilly terrain. Nevertheless, we keep looking for development opportunities in this area. Our recent estimate is that Hong Kong has about 3-4% of realizable RE potential arising from wind, solar and waste-to-energy that can be exploited between now and 2030.

Recently, we have reviewed the Scheme of Control Agreements with the two power companies in Hong Kong. One of the key focuses is to further promote the use of RE in Hong Kong. In the new agreements, which will be effective from late 2018 and early 2019 respectively, we have introduced incentives for the power companies to adopt more RE and facilitate the development of distributed RE in the community. “Feed-in tariff” will be introduced to encourage the commercial sector and the public to invest in distributed RE. At the same time, RE certificates will be sold by the power companies for electricity generated from RE sources such that buyers can claim that their operation helps reduce carbon emissions.

According to the Chinese Academy of Sciences, it is estimated that the Belt and Road countries account for more than 70% of the world population, 40% of the world’s land, and they discharge more than 55% of the world’s greenhouse gas emissions. As such, the Belt and Road countries must put green development high on their agenda in the city development. Other than energy efficiency and conservation, RE would be one of the key solutions towards green development in the Belt and Road countries. Wider adoption of RE is the number one agenda, yet, in the longer term, the efficiency of distributed RE in a dense city would be another in the agenda.

Finally, I would like to brief you our promotion in green finance.

The BRI aim to enhance the connectivity of the infrastructures, trades and people among over 60 emerging economies across Asia, Europe and Africa. Although the BRI is focused on countries along the land-based Silk Road Economic Belt and the 21st century Maritime Silk Road, it is open to all countries. By creating an open, inclusive and balanced regional economic architecture, it can bring mutual benefits to the international community.

Infrastructure projects is one of the focus of the BRI with a view to enhancing economic and social development for the Belt and Road countries. According to a study carried out by the Asian Development Bank (ADB), the annual funding support from the ADB for infrastructural investment in Asia is less than 5% of the average annual demand of US\$730 billion. The soaring increase of infrastructure projects will certainly need to tap financial support from the developed countries.

Hong Kong Government will promote the development of green finance in Hong Kong, and we will take the lead in arranging the issuance of a green bond in the next financial year. Through these initiatives, we seek to encourage investors along the Belt and Road as well as international investors to arrange financing of their green projects through our capital markets.

The Government of Hong Kong Administrative Region would be more than happy to share with you our experience in various areas, not only on energy efficiency and conservation.

Thank you very much !

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