

Innovative and Green Conference
Organized by Hong Kong Green Building Council
and Hong Kong Science and Technology Park
Keynote Speech by Ir Alfred Sit JP, Director of Electrical & Mechanical Services

Albert, Cary, distinguished guests, government colleagues, ladies and gentlemen, good morning. My heartfelt thanks to Hong Kong Green Building Council and Hong Kong Science and Technology Park for the opportunity to share my thoughts at this important conference. To start with, I would like to bring you to India, a country that still faces a lot of challenges to provide reliable power supply and meet its growing demand for power. The price and lack of electricity often make a washing machine an unattainable luxury in India. However, Darshan Kolhe, a 10-year old student, has found a solution for that, let's watch the video and witness his amazing creation:

From this wonderful innovation by Darshan, we can see how innovation and technology can improve the quality of our life and save energy. To me, innovation is not necessarily linked to sophisticated products or rocket science. Any new idea thinking out of the box, which can meet the need of people, is innovation.

Let's move back to Hong Kong, the Year of the Pig got off a warm start in Hong Kong. It was the hottest second and third day of the Lunar New Year in the record of Hong Kong Observatory. I believe that most of you are still having a deep memory about the power of Super Typhoon Mangkhut which attacked Hong Kong in September last year. It was the most intense storm ever attacked Hong Kong, with the highest wind speed and storm surges. There are so many warning signals which give us a clear and loud message that we need to step up our action against climate change and global warming before it is too late.

I think I need not to spend time to explain the relationship between climate change and energy consumption. We all know very well about it. However, some of you may not know buildings in Hong Kong consume 90% of the total electricity and account for 60% of the total carbon emission. So, no matter you are working on design and construction of buildings, or their operation and maintenance, or just an occupant and user of buildings, you can help and make your contribution in combating climate change through reducing energy use in buildings.

Over the past years, we all have accorded great importance to energy saving. In 2015, the Government has published the “Energy Saving Plan for Hong Kong’s Built Environment 2015-2025+” which set a new energy intensity reduction target of 40% by 2025, using 2005 as the base. In 2017, we published the “Hong Kong’s Climate Action Plan 2030+” which outlined the Government’s longer-term action to combat climate change by promoting low-carbon transformation in Hong Kong. The Government has set a target to reduce carbon intensity by 65 to 70% by 2030 as compared with the 2005 level.

With all our efforts in the past years, the energy intensity in Hong Kong has already dropped by 28% in 2016 since 2005, and among all APEC economies, Hong Kong has the lowest energy intensity. Simply speaking, we are the champion among all APEC economies in energy saving.

However, we shall not be complacent about our “so called” achievement. A special report issued by IPCC (Intergovernmental Panel on Climate Change) last year about global warming of one and half °C clearly showed that the global response against climate change is far from satisfactory. We must explore more adaptation and mitigation options or strengthen our capacities for climate action. The question facing all of us now is “What and how we can do more?”

Taking government as an example, we had conducted many energy saving projects to cut energy consumption in government buildings and achieved a reduction of 16% from 2003 to 2014. We face the difficulties to squeeze more energy saving solely by using the energy saving products and technologies available in the market. In the good old days, our energy saving projects through retrofitting or replacement of the energy consuming installations could easily enjoy a payback period of less than 6 years. Now the usual payback periods of our energy saving projects through this traditional approach can be as high as 10 or more years when most of the low hanging fruits have already been harvested. In this particular juncture, we know that we need to find new paths to make our energy saving journey sustainable. Retro-commissioning that we are promoting is one of the solutions that we identified. We have been promoting retro-commissioning with HKGBC in many occasions and I don’t want to repeat here. Instead, I would like to share with you our findings that some I&T solutions provided by the local start-ups can help us a lot to cope with the challenges. Allow me to share with you one of our successful examples. One of the I&T solutions on energy saving comes from a team of CityU research staff and students, a smart controller added at fan coil units. We have put the smart

controllers for trial in our EMSD headquarters and the result is extremely promising, it can easily achieve 10% savings on power in fan coil units and the addition of the smart controller in the installation is very simple. We have also trial tested many other I&T solutions in government facilities , and our preliminary findings show that some of them can achieve as high as 40 to 70% savings in various loading conditions. The result so far well proves I&T solutions can provide promising prospects to lead the journey of energy saving. What we need to do now is to make ourselves more open to innovation and technologies, and put them in use. .

We should have bold determination in finding new paths and technologies towards the common goal of sustainable future to further reduce the energy consumption.

In fact, forging ahead with the development of innovation and technology for a smart and sustainable future has been one of the highlighted initiatives in the Policy Address starting from 2016. In the Chief Executive's 2017 Policy Address, the Government has promulgated a vision of building Hong Kong into a smart city and has been putting a lot of emphasis on I&T to bring new economic drive and improve people's daily lives. The vision was echoed by the 2018 Budget which earmarked a major allocation of 50 billion dollars for the development of I&T.

All government bureaux and departments have been working hard in taking the lead to support the development of I&T, and EMSD is no exception. Here, I would like to share with you what EMSD has been doing in this area. We position ourselves as a facilitator and promotor for I & T development in Hong Kong and are trying to make us our unique position as an E & M engineering government department to help filling the gap that our I & T practitioners have difficulties to meet. For example, we realized that our start-ups need proven job references before they can put their novel technologies into commercialization. However, to start-ups, finding a proper testing ground for their I&T solutions may at times be rather difficult. To overcome this hurdle, we serve as facilitator to designate our EMSD Headquarters building and facilities as the testing site for suitable trial projects. Besides, we also liaise with relevant government departments to provide more suitable venues for trial projects. The Smart Controller as mentioned previously is one of the successful collaboration examples conducted in EMSD Headquarters.

In addition, we established an "Inno-Office" in EMSD and set up a web-based "E&M InnoPortal" which aims to match the I&T wishes of government departments, public

bodies and the E&M trade with the I&T solutions provided by the local universities and start-ups. Measurement and verification of the result of the I&T solutions are an integral part of our “E&M InnoPortal”. Being a government department with no perceived conflict of interest, we are in a good position to offer an independent and impartial assessment to ascertain the effectiveness and reliability of the I&T solutions, and then have the result promulgated with an aim of helping to promote the adoption of those I&T solutions with good potential. So, we are now in the process to make ready the measurement and verification reports of the trial I & T solutions at our “E&M InnoPortal” for public reference. If there is any start-up at the audience with innovative energy saving solutions, you are encouraged to provide your solutions to our “E&M InnoPortal”.

Besides matching the I&T wishes with solutions on this online platform, we partnered with the Hong Kong Science and Technology Parks to organize face-to-face matching arrangements, i.e. the Innovative Technology Days in the past two years. Around 20 start-ups were invited to introduce their I&T solutions to EMSD as well as other government departments and public bodies, with a view to explore collaboration and trial application of their I&T solutions. This year, we have planned to organize “Green I&T Symposium” and the details will be announced soon. All of you are welcome to join the symposium. I would like to take this opportunity to thank HKSTP again for nurturing start-ups and motivating I&T development in Hong Kong, and also express my sincere thanks to HKGBC for networking the green building practitioners together. This is really fantastic for HKSTP and HKGBC working together to connect the green building practitioners with the I & T startups so that both sides can co-create solutions helping each other, through promoting more I&T applications to drive more building energy saving opportunities, for the betterment of the whole community. I am also very pleased to note that many speakers today or their sister companies have collaborated with EMSD before in some innovative and green projects, such as in the retro-commissioning pilot projects, smart metering, and other innovative energy saving initiatives. May I extend my gratitude to all these partners of EMSD for your contribution and promotion in I&T.

Although the journey to low carbon buildings is definitely a very challenging one, I have confidence that we could make it with our concerted efforts to venture through innovation and technology. Let’s joint hands together to embrace innovation and technology to combat climate change for a sustainable future. Thank you very much for your attention.

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