

The 6th IEEE PES Asia-Pacific Power and Energy Engineering Conference
Opening Address by Ir CHAN Fan, Frank JP

Good morning Prof. Chung, Prof. Begovic, distinguished guests, ladies & gentlemen,

My warmest welcome to you all for being here with us today. We are particularly honoured with the presence of the many distinguished speakers, local and overseas, for sharing with us your power and energy expertise.

Global Climate Change

This year, we had the hottest summer months in Hong Kong history since 1884 and the cold spell just started a week ago. On the other side of the globe, people braced through the cold wave in North America, surviving heavy snowfall and record low temperature across USA. Worldwide, extreme weathers have become commonplace.

Last month, the Intergovernmental Panel on Climate Change published the latest Synthesis Report. If we are to contain global warming below 2°C by the end of the century, as compared to pre-industrial period, it would require global anthropogenic GHG emissions reductions up to 70% by 2050 as compared to 2010, and near zero emissions in 2100. Climate change is a defining issue of our time. It calls for collaborations beyond borders.

Energy Sustainability

The 21 APEC Economies altogether account for approximately 40% of the world's population, 55% of the world's GDP and about 44% of world trade. Alongside this resounding development, APEC Economies collectively account for 60% of total world energy consumption. As the region becomes increasingly industrialized, and with

population migration from rural to urbanized areas, the demand for more power and energy is tremendous.

APEC has attached great importance on energy sustainability. Apart from driving for more renewable energy, maximizing power generation efficiency, minimizing transmission and distribution loss, power system optimization, smart grid and metering, demand side management and behavioural change of the public all become part and parcel of the energy sustainability equation.

Roadmap for Cities

Air and water are vital to living organisms, so are power and energy to metropolitan cities. Hong Kong is the most vertical city on the world with 8,000 high rise buildings and skyscrapers. Buildings in Hong Kong consume 54% of the city's total energy, 90% of the city's total electricity and account for 60% of our greenhouse gas emissions. Globally, buildings account for as much as 40% of the total world energy use and about 24% of carbon emissions.

Enhancing building energy efficiency is therefore an indispensable driver for metropolitan cities. Hong Kong has put in place legislative regimes for built-in building services installations as well as plug-in electrical products. Together, they contribute to help make Hong Kong a greener city. For example, the tightening of energy efficiency labeling scheme for electrical products in November 2015 is expected to save 300 GWh annually.

In fact, Energy efficiency opportunities can be found on both the supply and demand side of the energy sustainability equation. Over the years, the performance of power generation plants has improved remarkably. The gas fired combined cycle power plant in

Irsching, Bavaria broke the 60% efficiency barrier back in 2011. With creativity and innovation over time, engineers never cease breaking new grounds.

Analysis of the electricity networks in APEC economies reveals transmission and distribution losses from 4% up to 17.4 % of the final energy consumption. Of these losses, a quarter of it vanishes in the distribution transformers. If we could cut losses by 20%, as much as 30,000 GWh could be saved annually. Clearly, there is a huge saving potential waiting out there and we engineers are duty bound to take up the challenge.

Smart grid and smart metering are poised to open up more opportunities for energy efficiency and conservation. Smart technologies can improve safety and supply reliability, it can also help reduce peak demand and optimize infrastructure investments. Technology wise, smart technologies with all kinds of capabilities and backbone infrastructure are available. But more need to be done to turn the many promises real.

Closing

Opportunities and challenges are abundant along the power and energy value chain, and every one of us can do something to make a difference, a difference that could make our planet Earth sustainable.

In closing, I would like to extend my sincere congratulations to the IEEE Power and Energy Society in organizing the conference in Hong Kong. May I wish you all an enlightening conference, and an enjoyable and memorable stay for those coming all the way from abroad. Thank You.

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