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SUSTAINBLE DEVELOPMENT OF HONG KONG

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I have titled my talk as "Sustainable Development of Hong Kong" in general terms, I think what I am going to say could possibly apply to other developing metropolis.

As I had served for some time in the Advisory Council on Environment, Energy Advisory Committee and now in the Council for Sustainable development, My talk will cover mainly energy, environment and climate change, which will lead me to discuss briefly on the sustainability or rather unsustainability of our cityscape, tax, employment and governance of Hong Kong.

Since Gros Brundtland coined the term "sustainable development", it had been subjected to many interpretations in the past thirty years.

I find the word "sustainable" or "sustainability" had many imaginative meanings, frequently overused and misused. For example, one of my employees who had been performing under par approached me to ask if his career in the company was "sustainable", he left the company soon afterwards. A young couple after going through the motion of tying their knots considered marrying was "sustainable development" of their love affairs. Many cities in the Mainland considered brutal growth of GDP in the past twenty years in the name of "sustainable development". Some governments invaded rogue regimes thousands of miles away under the pretence of "sustainable development" of their national security.

To my simple mind, "sustainable development" means that our children and grand children should have their standard of living, quality of life and natural

environment no worse off than that of today.

For centuries, Chinese people considered "clothing 衣", "food 食", "shelter 住" and "travel 行" as the basic needs of life. That was of course before the Industrial Revolution, when there was probably less than a billion people, and the world's biodiversity and natural resource were well able to support the population. That was also before when people in general had developed their taste and habit of convenience and luxury.

In the past two hundred years, the world population had increased to over six billion and the economies had been growing at phenomenal rates driven by the intensive use of natural resources; particularly fossil fuels.

Population increase compounded with energy and resource driven economic growth is putting tremendous strain on planet earth. At the present time, I see the single most important threat to the long-term well-being of the human kind are energy security and environmental problem associated with burning of fossil fuels.

The reason why I take such a single-minded approach is the fact that many of us here today are experts in city planning, buildings, infrastructures and transport systems. I believe that I should not dwell into those subjects that you know a lot more than I do. As a humble electrical and mechanical engineer spending most of my working life building and operating equipment and plants that consume lots of energy, I think it is time that I should redeem my sins by preaching energy conservation and protection of the environment.

As we all know, there is a finite reserve of fossil fuels and we are using them at a break-neck speed. A major oil company recently publicized that fact that the first trillion barrel of oil was used in the past 150 years, the next trillion barrels will be needed in the next thirty. If the rule of supply and demand holds true, price of fossil fuel will go up, probably exponentially with shrinking reserve. This will have huge impact on the economy.

Secondly, every thing we make, being it clothing, food, building, or transport vehicle, has its embedded energy. Energy is also needed to launder the clothes, cook the food, run the buildings and move the people about. At the end of their useful life, we need energy to dispose of them.

Thirdly, burning of fossil fuels generates a host of pollutants, the most important of which is carbon dioxide. It has now been proven beyond reasonable doubts that carbon dioxide is the most significant gas causing global warming and climate change. Unfortunately apart from planting trees there has not yet any practical and commercial viable way to sequester carbon dioxide. For every drop of oil, every ounce of coal and every cubic centimetre of gas we burn, we are adding carbon to the atmosphere. Other pollutants generated from human activities, such as methane, ozone, NOX, SOX and particulates, apart from contributing to global warming, are also harmful to the health of human, animals and plants.

In the Fourth Report of IPCC (Intergovernmental Panel on Climate Change) released earlier this year, if economies carry on business as usual, by the end of this century the average temperature at the atmosphere would rise by some 5 degree C and average sea water may rise by some 6 metres. Habitats of hundreds of millions of people would be flooded resulting in mass migration and serious social problems. At the same time, increase in frequency and intensity of extreme weathers would threaten water and food supply, higher temperature would cause the re-emergence of known diseases and incubation of new virus. The survival of many plant and animal species would be threatened.

Carbon dioxide content in the atmosphere was 280 ppm prior to the Industrial Revolution, now it stands at 390 ppm and is rising at 1.8 ppm per annum. It would reach 550 ppm by mid of this century which, scientists predicted, would tip the balance of nature with disastrous consequences. There is only a window of opportunity of some 30 to 40 years to reverse the trend and yet we apparently are helpless in resolving this problem. China being the world's second largest emitter of C02, and fast being the largest, officially declared that they are not going to cap emissions to sacrifice economic growth. United States opted out of Kyoto Protocol in the context of cost on the economy and because Kyoto Protocol did not commit China and India to mandatory emission limits. Germany and Britain exercise leadership on this matter, and yet in the recent G8+5 meeting, the world's top trading countries could only offer some sort of best endeavour to combat climate change; without committing to reducing CO2 discharge by 50% in 2050, which according to the prediction of the scientific community, is needed to cap the temperature rise by 2 deg C in order to stabilize the world's weathers.

The fact is that until a new sources of energy that can substitute fossil energy in quantum and tempo, the only thing we can do is to conserve which means we have to use less, to improve on energy efficiency which is doing more with less, to make use of renewable energy including waste to energy sources, and ultimately make use of nuclear fusion. Many of these measures could be implemented with existing technologies, but unfortunately we are slave to our habits.

The world needs to develop a universally acceptable (both for the developed, developing and under-developed countries) market pricing system for carbon so that emission trading could also be an effective economic tool to reduce carbon emission.

Look at Hong Kong as an example. Our energy intensive industries had substantially moved to Pearl River Delta and beyond, and yet the per capita primary energy consumption had steadily gone up in the past twenty years. The trend is unsustainable.

We have our energy codes which are both technically inadequate and weak in their implementation regime. We should define the energy efficiency of equipment and system and energy intensity of buildings with incentive and penalty on their capital costs and the tariffs. We need to have more effective public sustainable-transport system and tax regime to reduce dependency on private vehicles. We need a more holistic energy policy on energy mix, total emission, price and security. We need to educate the public a lot more as the pull and legal framework to enforce energy policies as the push to achieve a low carbon economy.

The Hong Kong Polytechnic University using satellite imaging demonstrated recently that the urban areas are warmer than the countries side by some 6 deg C in the late evening. The Hong Kong Observatory also observed that number of "cold days" are on the decline while number of "hot nights" are on the increase. Apart from global warming and urbanization, one of the reasons is that the buildings heated up during the day release their thermal energy over night. Hong Kong has created for itself a micro-climate due to its cityscape and energy intensity. Tall buildings ring fenced the inner city which dampens air circulation and are become eye sores. The Kowloon Peninsular ten years ago was a monolithic block of buildings twelve floors high. If we are not careful, it would soon be an even bigger monolithic block of 60 to 70 floors high. People living in

the city would be truly living in a jungle; but made with steel and concrete with fossil powered air conditioning systems just to make the space humanely habitable.

One can always be clever at hind sight. When our government extended the leases in North Kowloon and New Territories for 50 years at 1997, the government could have imposed almost any condition to the future development in these areas. It had to be an either lack of vision or it is a case of a grand plan for the government to make more money in the future through its planning and building approval process.

Another issue that is close to the heart of the construction industry is the high cost of buildings. It is believed the Building Codes of Hong Kong are not conducive to cost effectiveness. The Building Codes in use are decades old and in the intervening years, aspiration of the occupants had changed, new fire and safety requirements, new materials and new construction methods had been developed. The existing Building Codes are out of date and should be reviewed and improved to ensure their relevance to the international industrial norms and best practices.

High cost of buildings leads me to talk about another aspect of unsustainability of Hong Kong. For decades, land sales is an important source of government revenue. This apparently afforded us a simple and low tax regime. But sales of land at high prices is indirect tax. The developers become tax collectors while they control the real estate market making mountain of money but not necessarily to the best interest of the people of Hong Kong as a whole. I believe for Hong Kong to be more equitable, the tax regime has to be overhauled. I am therefore very disappointed that the public consultation on sales tax was shelved half way through. It is probably the only way for the government to be much less dependent on the revenue from land sales, which I believe would enable the government to plan for the land use and design buildings and infrastructures more sensibly based on the Harbour Planning Principles advocated by the Harbour Business Forum, and other parties who do love our harbour and do care about the future cityscape of Hong Kong.

Hong Kong business people own 80,000 factories in the mainland employing some ten million workers. How they run their businesses would have a significant impact on the environment not only in Pearl River Delta but also in

Hong Kong. We also make the largest source of investment in the Mainland and how the investors conduct their business will have impact on their long term viability against the back drop of increasing awareness of our customers overseas for low carbon and energy efficient economy. We can play an exemplary role in the local communities where our factories are located.

Let us get back to these 80,000 factories in the Mainland. They offer many jobs in the Pearl River Delta and beyond, generate plenty of profits for their Hong Kong owners, but deplete Hong Kong employment opportunities for the less educated and unskilled. This in some ways polarizes the people of Hong Kong and is socially and politically unsustainable.

It is evident from my earlier discussion that Hong Kong as a community has been ineffective in devising and implementing solutions to a number of important issues. I have to put it to the weak governance of Hong Kong. It is a big subject and may be too political. But the fact that we have our Chief Executive not belonging to any political party and all 59 members in the Legislative Council could be members of the opposition is not conducive to effective governance. The present political infrastructure is not sustainable. What we have is worse of the two evils and I personally do not mind going back to the era when the administration appointed all 60 Councilors.

Returning to my hobby horse of energy, environment and climate change, and from a wider international perspective, China, India and a host of developing economies are going through periods of rapid growth; all aspiring to catch up on the life style of the OCED countries. There are now three million cars in Beijing, imagine what would happen if all the cities in China are doing the same. An automobile manufacturer in India just announced that it planed to launch a new motorcar at USD3,000, it will be a Ford Model T all over again but for country with a population of more than one billion. What would the world be if the under-developed countries are also catching up.

China has just announced a number of measures to reduce energy intensity by 20 % in the current five year plan but it also declared that it is not going to sacrifice economic growth for the environment.

Although United Kingdom, Germany and the European Union have very ambitious plans on carbon reduction, it will be unfortunate if the developing

countries continue to increase carbon emission which would undo all the good that would be achieved.

I believe the developed countries should exercise greater leadership. They have the financial resources, the technologies and the political clout to influence the world. They first have to put their own houses in order, they can also provide the energy saving technologies and funding to the under-developed countries to help them in capacity building, to enable them to have more equitable supply of energy, and helping them to reduce carbon emissions.

Hong Kong is ranked as one of the world's top trading economies, we can lead by example not only to our neighbouring regions, but also to the world's largest economy. I believe there is a lot more we can do to improve our quality of life while at the same time reducing energy intensity, minimizing on wastes and pollution, creating a healthier and more pleasant cityscape, and achieving sustainable development.

Hong Kong accounts for only 0.2 % of world's total carbon dioxide emissions but I would like to close by quoting Edmund Burke, a member of the British Parliament who said some two hundred years ago "No one makes a greater mistake than he who did nothing because he could do so little".

There is standard of living and there is quality of life. I believe we can retreat from some of our habits and de-possess many of worldly goods without affecting our quality of our life by one iota. The buck has to stop here and each and every one of us has an important role to play.

Thank you.