



Legislative Council Panel on Environmental Affairs Impacts of the Development of Nuclear Energy for Local Power Generation

To combat climate change, the HKSAR Government issued a consultation paper last year and proposed to cut down Hong Kong's carbon intensity by 50% to 60% (based on 2005 level) by 2020 through a combination of measures. One key initiative is to substantially cut down the proportion of coal-fired generation in the fuel mix by increasing the amount of natural gas and nuclear power to 40% and 50% respectively.

Through the use of cleaner fuels and the emissions control projects, CLP has been able to supply electricity in a reliable, cost-effective manner while achieving an environmental performance better than the Hong Kong Government's regulatory requirements for air emissions from power generation. However, going forward, the limitations on available technology mean that further significant reductions in carbon intensity will be a growing challenge. Changing the fuel mix by using low carbon fuel sources to replace coal is a feasible and effective way to reduce CO₂ emissions.

Compared to coal, gas-fired generation, which accounts for about one-third of CLP's fuel mix, can reduce carbon intensity by half. However, it is more costly than coal and its price is determined by international energy markets which can be volatile. The environmental benefits of renewable energy (RE) are well known, however its applicability depends on the availability of natural resources. Furthermore, development costs are high and supply reliability is not assured. Development of RE in Hong Kong is limited by land use constraints and lack of natural resources. Despite these challenges, CLP has made some headway in the introduction of RE with a proposed offshore wind farm project, the launch of the first standalone solar project on Town Island, and by supporting more than 70 local RE projects. However all these projects combined would represent less than 2% of CLP's generation capacity in Hong Kong.

Nuclear power, which meets 25% of Hong Kong's local demand, has generated electricity safely, reliably and economically in the past 17 years. With almost zero emissions, nuclear power from Daya Bay has already effectively reduced Hong Kong's CO₂ emissions by more than 100 million tonnes. At a price that is competitive with that of electricity generated from coal. We appreciate the public's concerns about nuclear safety and the need for more transparency, especially after the Fukushima incident. The Daya Bay Power Station has taken various initiatives to ensure safe operation of the power plant and enhance transparency in public communication, which include safety tests and

inspections on its operating system and uploading of information about non-emergency Licensing Operating Events at Daya Bay to HKNIC website within two working days after identification of the event. As with any power generation facility, risks need to be carefully assessed and mitigated through careful site selection, plant design and construction, ongoing focus on operational safety, and emergency preparedness.

Coal, natural gas, renewable energy and nuclear power each have different implications in terms of reliability, cost, emissions performance and public concern. There is no perfect fuel that can meet all requirements; each fuel has its pros and cons. To ensure supply reliability and achieve cost effectiveness a balanced mix of fuels is needed. RE for example, due to its development constraints and intermittent nature, can hardly replace the role of nuclear in the government's proposed fuel mix by 2020. The practicality of using natural gas to replace nuclear energy will be limited by the availability of more gas sources, cost competitiveness, and the lead time necessary for the development of cross-border infrastructure for piping of natural gas to Hong Kong.

Energy efficiency and conservation measures can no doubt contribute to lowering carbon intensity. This should be pursued as a matter of priority but on its own cannot be expected to reach the scale needed for Hong Kong to achieve the 2020 emission reduction target levels proposed by the Government.

Looking at overseas experience in reducing energy consumption, in Japan, Germany, the UK, Switzerland and Italy, despite having robust energy efficiency and conservation programmes these countries have only managed to slow down the growth of energy consumption as their economies continue to expand.

In view of climate change challenge, it will be unrealistic to rely on one single initiative to help achieve the 2020 carbon reduction target. CLP believes nuclear power remains a practical and feasible fuel source that can economically help lower Hong Kong's carbon intensity. The discussion today should not be simply confined to whether Hong Kong should or should not use more nuclear power, but to take a holistic and thorough view to devise an appropriate and feasible future fuel mix for Hong Kong. The steps we are taking now have far-reaching consequences that will shape Hong Kong's future energy landscape. We look forward to participating in such a constructive discussion among the community.