



# The Canadian Chamber of Commerce in Hong Kong

La Chambre de Commerce Canadienne à Hong Kong  
香港加拿大商會

June 13<sup>th</sup> 2014

Electricity Reviews Division  
Environment Bureau  
15/F East Wing Central Government Offices  
2 Tim Mei Avenue  
Tamar  
Hong Kong  
E-mail: [fuel\\_mix@enb.gov.hk](mailto:fuel_mix@enb.gov.hk)

Dear Sir/Madam,

**Response to the Public Consultation on “Future Fuel Mix for Electricity Generation”  
Views from  
The Canadian Chamber of Commerce Hong Kong**

In response to the public consultation document on *Future Fuel Mix for Electricity Generation* (“consultation document”), the Canadian Chamber of Commerce in Hong Kong (“CanCham”) is of the view that the future fuel mix for electricity generation in Hong Kong is an important decision that will shape the city’s future energy policy. It affects not only its power industry, but also the entire economy. Based on the information given in the consultation document and on other sources of public information we have reviewed, we believe that increasing local gas generation will be the pragmatic and effective way to improve both local and regional air quality to meet the HKSAR Environment Bureau (“Government”) policy targets by the early 2020s. The question of whether Hong Kong should build a designated transmission line to increase the importing of electricity from the China Southern Grid Co. Limited (CSG) needs further review and analysis before CanCham can provide a qualified and informed opinion on the matter.

The CanCham Sustainable Development Committee (“SDC”) has provided leadership in advocating the business case for sustainability in Hong Kong for close to two decades. Our members are committed to actively promoting a sustainable future for Hong Kong – this includes taking care of our environment and managing our day-to-day business sustainably.

Founded in 1977, CanCham is a proactive, non-government body that provides an extensive networking platform for some 1,100 members with business interests in Canada, Hong Kong, Mainland China, and the broader Asia-Pacific region. CanCham is one of the largest Canadian business organizations outside of Canada, one of the leading and most active international chambers in Hong Kong, and an influential business group in Asia-Pacific.





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Overall, CanCham supports Option 2, but with the condition that more effort should be devoted to developing local renewable energy and promoting energy efficiency and conservation (EE&C). We offer a more detailed review of each option based on the criteria set out in the consultation document and explain our viewpoints in the paragraphs below. The CanCham response to 'Specific Questions for Consultation' is provided in the Appendix.

Yours sincerely,

John Witt  
Chairman  
Canadian Chamber of Commerce in Hong Kong

cc Mr KS Wong, Secretary for the Environment, HKSAR  
Ms Christine Loh, Under Secretary for the Environment, HKSAR  
Mr Philip Leung, President, Canadian Chamber of Commerce in Hong Kong  
Mr Hendrik Rosenthal, Chairman, Sustainable Development Committee and Director (Non-Executive),  
Canadian Chamber of Commerce in Hong Kong



## **EXECUTIVE SUMMARY**

CanCham members view reliability, safety and environmental performance as the most important criteria for Hong Kong's electricity system.

Due to insufficient information given in the consultation document, CanCham has reservations towards expressing support for importing electricity from the Mainland (Option 1). More concrete information needs to be made available, in particular relating to reliability of supply, affordability (cost and tariffs), and environmental impacts (carbon content and air emissions of imported electricity). Given the lack of other options to choose from in the consultation, we consider local generation with natural gas (Option 2) to be a more logical and less risky choice to support – however, Option 2 by itself is not perfect either.

The consultation document offers no supporting evidence for satisfactory performance of Option 1 in terms of reliability. Option 2 has more certainty in this area. More details and discussions are needed to understand more about any reliability and safety impacts the import of electricity from the Mainland grid may have before we move away from the proven mode of local generation.

In terms of environmental performance, there are concerns that Hong Kong is merely shifting local emissions to the Mainland and that there would be no genuine improvements in regional air quality and carbon emissions. Although Option 2 uses more natural gas and is still a fossil fuel, there is more control and certainty on emissions performance, not only locally but also from a regional perspective.

In addition, CanCham is of the opinion that renewable energy has not been given an appropriate role in the future fuel mix proposed by Government. Viable renewable energy projects should be pursued wherever sensible, and therefore a target renewable energy proportion should be integrated into the mix. In addition, CanCham believes that Government can do more to raise public awareness through education, public campaigns, and to incentivise more innovation and adoption on energy efficiency and conservation (EE&C).

In terms of the impact on local industry, we believe that Option 1 may have impact on the ability to retain engineering talent in Hong Kong and may incur loss of economic activity, because a significant portion of power generation business would be shifted into the Mainland permanently.

In summary, in absence of more detailed information on the impact on reliability, regional environmental performance and affordability of importing electricity from the Mainland grid (Option 1), CanCham supports that any change in Hong Kong's fuel mix is supported by cleaner local gas generation as proposed in Option 2 but supplemented with renewable energy and EE&C.

## **Reliability and Safety is No.1**

The reliability of Hong Kong's electricity supply ranks amongst one of the best in the world. It has been a strong pillar for Hong Kong's economic and social development for decades. Most notably, the cost for this high reliability in our electricity supply is competitive, attracting industries and investors from all around the world to expand or headquarter their businesses in Hong Kong – which is evident in the flourishing growth of many industries here such as banking and finance, marine and aviation, logistic and public transportation, hotel and tourism, as well as the fast-growing data centre business. When deciding on the future generation fuel mix, we must ensure that this high level of reliability is not compromised. For example, a high level of reliability is essential to help ensure Hong Kong remains a financial hub where market participants are assured financial transactions can be completed in real time and markets will not be closed due to power interruptions which can cause both financial and reputational damage. Reliability also affects safety in Hong Kong where a substantial portion of residents live in high-rise buildings and rely on power to access the upper floors on a day-to-day basis. Reliability is also central to the substantial number of commuters who use the MTR each day.

In view of Government's proposals, Option 1 (importing more electricity through purchase from CSG) is untested in Hong Kong and the reliability of CSG's grid within the Pearl River Delta still lags behind that of Hong Kong's. The supply and reliability of electricity in Guangdong Province has been one of the concerns of many businesses that have been located there for years, although the situation has seen improvements in recent years. Yet, regional blackouts caused by adverse weather are still not uncommon in Southern China and the Pearl River Delta. Macau is often mentioned by Government as an example of a preferential agreement made with the Mainland to maintain its high supply reliability. However, despite the different circumstances and therefore the different consequences of electricity interruptions between the two cities, this also raises a moral question of whether it is appropriate by allowing others to go black in order to keep our lights on. We should also question how much this "privilege" of reliability would cost, and for how long after 2047 it could last, when Hong Kong may no longer enjoy a preferential status compared to other Mainland cities.

Comparatively, Hong Kong's power system has performed remarkably well over the years, despite frequent typhoons and other extreme weather conditions. Local generation allows Hong Kong to have better control over the electricity supply and quicker response in case of any system contingency, which further enhances the supply reliability. Cancham believes that we must be cautious on whether we would like to give up this high level of autonomy in electricity supply.

In terms of safety performance for Option 1, we express concern about whether the safety risks of power generation would simply be outsourced to a company outside Hong Kong that as stakeholders we would have no control over. While for local generation under Option 2, the safety performance of the power companies can be well-regulated and monitored effectively by Government and Hong Kong stakeholders.

To sustain Hong Kong's remarkable business environment, we should not make any decisions about our future fuel mix that may compromise our excellent reliability and safety performance. More details and discussions are needed to understand more about any reliability and safety impacts that Option 1 may have on Hong Kong before we move away from the proven mode of local generation. In particular, how the overhead electric grid in Guangdong could survive under extreme weather like super typhoons, exceptional thunderstorms, and even snow storms without affecting their reliability and robustness in supplying to Hong Kong is something that must be answered before Option 1 can be considered.

## Cost and environmental concerns – more information is needed for decision

Based on the minimal information available in the consultation document, it is challenging to state a preference for one of the two options. A recent survey conducted by Business Environment Council pointed out that the lack of information was one of the major obstacles to creating public buy-in for changing the fuel mix.<sup>1</sup> Taking generation cost as an example, the consultation document simply mentions the unit generation cost for both options would be roughly double that of the average from 2008 to 2012. However, since this estimation is probably based on various assumptions, more details about this cost estimate should be disclosed.

For importing more power from CSG, CanCham believes that the import purchase cost may not be appreciably influenced or controllable by Hong Kong. When considering tariffs, the Mainland power sellers are expected to take into account their own generation costs, the cost for building new infrastructure for power transmission, the network operation and maintenance (O&M) cost, their expected profit margin for selling out power with reliability higher than their own one, as well as other elements such as value-added taxes (VAT) or potential carbon-related “tax” and similar costs. These costs are not controllable by Hong Kong and the reflected tariff would largely depend on the bargaining power of Hong Kong, which may not be appreciable since it would be a “single seller” situation. For Option 2 (local generation by natural gas), while the actual tariff would depend on the infrastructure costs for building new gas generation facilities, the generation and O&M costs are more controllable. In both options the tariff would largely depend on the price of fuel, whether that be coal, gas or renewable resources. Instead of saying both options would roughly double the generation cost, it is more prudent to say that the expected costs under both options are unclear. As for the aspect of environmental performance, it is also hard to tell which option is better. For importing power from the grid under Option 1, local emissions can be effectively reduced by “shifting” the power generation to the Mainland. However, this raises a moral question whether this would just be a NIMBY (Not-in-my-backyard) approach of sending away the emission to the Mainland. It should be noted that Guangdong itself has very little renewable energy. As China as a whole has a direction of decarbonisation and air quality improvement in the next 10 years, it is likely that China is already doing its best in development of renewable energy resources and additional electricity demand from Hong Kong would be supplied from other non-renewable generation sources such as coal generation - similar to what Guangdong has been doing with Macau. In addition, it is not certain whether overall regional air quality would improve, especially when the major fuel in Mainland China is still coal now and expected to be so for the foreseeable future. Furthermore, we should not neglect the possible costs that local business may incur due to the increase in Scope 2 emissions if power is purchased from CSG under Option 1.

Natural gas is a fossil fuel that generates CO<sub>2</sub> and emissions, and should be regarded as a transitional fuel in light of efforts to combat climate change. In the long run, we still have to pursue energy substitutes that are more sustainable and emissions free. But in the current planning horizon (up to 2023) Option 2 can provide more control and certainty on emission performance and has the advantage that Hong Kong is in a better position to control the source of fuel for power generation.

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<sup>1</sup> See the BEC 2013 Hong Kong Business Survey on Energy Efficiency & Climate Change available here: <http://www.climatechangebusinessforum.com/en-us/research-11102011>

## **Fuel diversification and the potential of more renewable energy (RE)**

The existing diversified fuel mix made up of coal, natural gas and nuclear power, has served Hong Kong well for decades in terms of safety, reliability, affordability and environmental performance. Under Option 1 (connecting to CSG), the consultation document states that Hong Kong would gain access to cleaner fuels. However, with China doing its best to develop renewable energy resources to clean up the environment, it is not certain there would be additional incremental renewable energy to supply Hong Kong. Hence, if the incremental demand of Hong Kong is not being met by incremental clean energy projects, it is merely a “feel good” factor without actually contributing to lower air pollutant or carbon emissions.

It would be optimal if transmission lines could be built to directly tap RE sources to ensure the electricity generated is from a specific RE source rather than just purchasing from a power grid where a significant part of the fuel mix is comprised of coal. It would be helpful if Government could supply additional details about the reasons why a dedicated transmission line, similar to the current arrangement for the Daya Bay Nuclear Power Station, is not feasible and not mentioned in the consultation document.

Alternatively, if more reliance on natural gas under Option 2 were to be pursued, we have to be aware of limited fuel diversification in the future. For instance, Japan in the past managed its fuel mix policy to limit any particular fuel source to no more than 30% in order to strengthen reliability. However, after the Fukushima incident Japan shut down most of their nuclear plants and had to rely heavily on importing LNG from all around the world and keep other fuel sources such as coal, oil and renewables in their fuel mix to maintain a higher level of fuel diversification. Thus, gas supply diversification is very important to support competitiveness and can be achieved through LNG imports from world markets. However Hong Kong requires appropriate infrastructure to enable imports from world markets.

The consultation document allows for 1% of RE for both fuel mix options, based on “*natural constraints, and geographical limitations*” in Hong Kong. Presumably this statement includes the lack of land and the absence of large-scale hydro, biomass and geothermal sources of RE. Globally, around 17% of final energy is from RE. After excluding large-scale biomass and geothermal sources of RE, this percentage becomes just under 2%. Although there are cost and space implications, there is an opportunity for Hong Kong to increase the RE for the future fuel mix. CanCham recognizes the large space requirements for renewable energy but viable projects should be pursued wherever sensible and a target renewable energy proportion should be integrated into the fuel mix. Given that the two power companies have already gone through the critical feasibility evaluation process of their proposed offshore wind farms, together with the Government’s policy plans to increase waste-to-energy developments in the coming decade, over 3% of Hong Kong capacity could be produced by local renewable energy projects. CanCham urges Government to pursue these projects because it would demonstrate Hong Kong’s commitment to sustainability and will not add a significant cost burden on consumers.

## **Flexibility in scaling up future supply and potential impact on local industry and economy**

Based on consumption records from the last few years, the electricity demand growth in Hong Kong has been modest or even dropped in 2013, in part due to increasing public awareness and adoption of EE&C practices. It is therefore worth considering flexibility in scaling up our supply capacity when deciding the future fuel mix. Under Option 1, if an interconnector is built with sufficient excess capacity (which presumably comes at a cost), then the incremental demand increase (if any) can be met easily via additional

imports through this interconnector. However, if there is limited interconnector excess capacity, it is very difficult to scale up future electricity supply for Hong Kong given the need for another piece of interconnector infrastructure. But building extra reserve margins in one go for such a large piece of cost infrastructure may risk turning out to be a white elephant if Hong Kong manages to cut down our energy consumption through future EE&C projects. Option 2 is generally easier to scale up given the modular nature of natural gas generation units, allowing for deferral of capacity increases until the impacts of EE&C efforts show effectiveness.

In addition, Option 1 may impact the local power industry, because a significant portion of the power generation business would be shifted into the Mainland permanently. This would likely result in the loss of local technical engineering skills and talent. There would also be a potential loss of corporate tax revenue if part of the electricity services value chain (not just the power companies, but the associated consultants, suppliers, contractors, etc.) were to be provided by a company based outside Hong Kong.

### **Implication on a post-2018 electricity market**

Government has indicated that the fuel mix decision would have an implication on the post-2018 electricity market. Government noted that Option 1 may provide more room to introduce change to the electricity market while details need to be further studied in the post-2018 market regulatory framework review. There are many questions yet to be answered for this subject, including some obvious ones:

- How would any market change impact Hong Kong in terms of reliability, environmental performance and electricity costs for consumers?
- What are the costs and benefits that market change would bring? Can such benefits be more economically implemented under the existing and other alternative regulatory arrangements?
- How would the CSG and Hong Kong electricity sector be arranged? How would they interact?
- Would there be a level playing field for Hong Kong and Mainland companies? Would all companies be subject to the same legal, environmental and oversight requirements?

We understand there are many unanswered questions on this complex topic and there will be a separate public consultation on the future of Hong Kong's electricity market. CanCham looks forward to future discussions in this area.

### **More Focus on Energy Efficiency and Conservation (EE&C)**

Apart from planning ahead for a better fuel mix, the adoption of EE&C is also critical for the success of future energy policy. With proper adoption of EE&C, load growth can be slowed and the need for building new generators could be deferred. Hong Kong has been promoting EE&C for years and its elements are becoming more important in many buildings nowadays. Yet, CanCham believes that Government could still do more to raise the public awareness through education, public campaigns, and to incentivize more innovation and adoption on EE&C. By using energy more wisely and efficiently, global climate change can be mitigated and consumers could save significantly on energy bills.

## **Concluding Remarks**

In summary, CanCham supports a cleaner fuel mix for a more sustainable Hong Kong while maintaining the current level of supply reliability. We believe that Hong Kong's current high level of supply reliability is crucial for its businesses and residents. Therefore, we should not make any decisions on our future fuel mix that would compromise this high reliability.

In terms of emission performance, increasing imports from CSG to Hong Kong would merely transfer our responsibility and pass our emissions elsewhere – air pollution and carbon emissions know no boundaries and is a regional and global issue. Option 2 (local generation) will help Hong Kong to improve local air quality and contribute to the greater PRD by cutting down overall regional emissions.

Based on the consultation document, cost is projected to be similar between Option 1 and Option 2. Therefore, Option 2 is assessed to be the preferred choice given the uncertain reliability impact and lack of control in regional emissions performance in Option 1. Natural gas import infrastructure should also be improved to allow Hong Kong the flexibility to source natural gas from around the world.

We believe the future fuel mix should also increase renewable energy. We also suggest Government to put more efforts on EE&C, in order to support Hong Kong's competitiveness in the long run. The option of importing electricity across the boundary should only be considered if there is surplus clean energy available for supplying to Hong Kong. Unless this is the case, Hong Kong should continue to move its fuel mix towards cleaner local gas generation as per Option 2.

**Appendix – CanCham Response to Specific Questions for Consultation**

Q1: How do you view each of the two fuel mix options with regard to safety, reliability, cost, environmental performance and other relevant considerations? (Please indicate your view on **EACH** of the two options.)

Option	Support	Not Support	Reason for NOT supporting (You can tick more than one box)
<b>1</b>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <b>Safety</b> <input checked="" type="checkbox"/> <b>Reliability</b> <input type="checkbox"/> <b>Affordability</b> <input checked="" type="checkbox"/> <b>Environmental performance</b> <input checked="" type="checkbox"/> <b>Others (please specify):</b> _____ <small>Please refer to the detailed submission paper attached.</small>
<b>2</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <b>Safety</b> <input type="checkbox"/> <b>Reliability</b> <input type="checkbox"/> <b>Affordability</b> <input type="checkbox"/> <b>Environmental performance</b> <input type="checkbox"/> <b>Others (please specify):</b> _____ _____

Q2: Which of the two fuel mix options do you prefer? Why? (Please tick **ONLY ONE** box)

- Option 1
- Option 2

Reasons: (You can tick more than one box below)

- Safety
- Reliability
- Affordability
- Environmental Performance
- Others

Please specify: Please refer to the detailed submission paper attached. \_\_\_\_\_