



**Submission to  
The Legislative Council's Panel on Environmental Affairs  
Special meeting on 29 April 2011**

**The impacts of the development of nuclear energy for  
local power generation on Hong Kong**

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### **Nuclear literacy**

Civic Exchange does not intend to cover the entire field of nuclear issues. We focus on the issue of “nuclear literacy”, which will be crucial if Hong Kong is to have high quality, informed, evidence-based discussions and debates on the many aspects of nuclear power that will have impacts on Hong Kong.

By “nuclear literacy”, we mean a higher level of knowledge and understanding broadly across government, business, media, academia, and civil society in Hong Kong. In fact, this should extend to general “energy literacy”, as a comprehensive discussion of the expansion of nuclear power in Hong Kong’s fuel mix inevitably intersects with the relative shares of other fuels in the mix, such as coal, natural gas, and renewables.

Public deliberations, such as this one instigated by the Panel, are essential to Hong Kong’s energy and nuclear deliberations and a high degree of literacy in these areas make such processes more effective.

### **Safety remains the paramount concern**

The Fukushima accident has concentrated attention on the most important aspect of nuclear operations: safety. As a result, the Central People’s Government has rightly decided to suspend approvals for new nuclear reactors pending a safety review.

A nuclear literate society potentially can increase the safeguards surrounding nuclear operations because it is able to ask the most pertinent questions about the various aspects of safety, including questions about siting, selection of technologies, management of nuclear plants, decommissioning, and the long-term custodianship of radioactive wastes and by-products. A nuclear literate society is one that is better able to provide effective scrutiny of safety arrangements.

Fukushima has pushed nuclear nations as well as those starting to build nuclear plants – including their governments, regulators, investors, plants operators, and public – to reflect on all of these issues.

### **Current level of nuclear literacy**

In September 2010, the HKSAR Government released its consultation document on Hong Kong’s *Climate Change Strategy and Action Agenda* in which it proposed an expansion of nuclear power in the fuel mix from the current 23% of the mix, to 50% by 2020.

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In November 2010, the Hong Kong Transition Project undertook a public opinion survey on behalf of Civic Exchange, gauging Hong Kong people's attitudes to expanding Hong Kong's nuclear power base. One of the most striking findings was that Hong Kong people have a low level of general knowledge about the current fuel mix. When asked "How much of Hong Kong's power do nuclear power plants provide?", only 9% answered correctly. Almost 40% declined to even guess at all, about 20% thought that not much (0% to 10%) of our electricity was nuclear, and 30% tended to overestimate the proportion (33% to 100% of electricity in Hong Kong).<sup>1</sup>

## **Hong Kong is a nuclear-powered society**

The issue of safety and the role that a nuclear literate society can play in ensuring safe operations cannot be avoided. Hong Kong has been a nuclear-powered society for 17 years, since the Daya Bay facility came into operation in 1994. At 23%, the proportion of nuclear in Hong Kong's fuel mix is more than 10 times the proportion of nuclear in China's national mix (about 2%) and puts Hong Kong between Japan (about 29% reliance on nuclear, nationally) and the USA (about 20%).<sup>2</sup>

The discussions on nuclear power in Hong Kong are not about the *instigation* of nuclear but its *expansion* in the total fuel mix from almost a quarter to a half. Therefore, the issue of nuclear literacy is important. All of Hong Kong's current and possible future nuclear capacity is and will be accessed from the Mainland. The fact that Hong Kong is not and will not be the direct day-to-day operator of the Daya Bay reactors does not mean Hong Kong cannot have a positive influence on safety considerations by applying the scrutiny of its media, civil society, and research resources to facilities supplying Hong Kong with electricity. It is time for Hong Kong as a whole to become energy and nuclear literate.

## **The energy transition and nuclear expansion in China**

Even if Hong Kong was to abandon its plans to expand nuclear capacity, or abolish nuclear as an electricity source altogether (which is unlikely),<sup>3</sup> Hong Kong should still become an informed society on nuclear issues because Guangdong Province has expanded its nuclear generating capacity beyond Daya Bay, new reactors are under construction, and more still are being planned. Moreover, Mainland China – in response to climate change, its carbon reductions commitments, energy security concerns, and rising energy demand – had planned to expand its nuclear capacity *eight-fold* by 2020. The Fukushima accident may well affect the type of plant, costs and timetable for expansion of plants still on the drawing board but there are already many plants under construction.

## **What areas should Hong Kong's nuclear literacy include?**

Hong Kong should hone its understanding across the spectrum of nuclear issues, including:

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<sup>1</sup> A summary is available at: <http://www.civic-exchange.org/wp/wp-content/uploads/2010/12/101217NuclearSurvey.pdf>.

<sup>2</sup> World Nuclear Association (May 2010) "Nuclear share figures, 1999-2009", <http://www.world-nuclear.org/info/nshare.html>

<sup>3</sup> Andrea Deng (22 Mar 2011) "Govt to push ahead nuclear power despite Japan incident", China Daily, <http://www.cdeclips.com/en/hongkong/fullstory.html?id=62708>

- The energy transition in Guangdong and Mainland China generally, including the inter-relationships between energy resources such as coal, natural gas, oil, hydro-power, and renewables, as well as nuclear;
- Different nuclear technologies, and the costs and benefits of each;
- Evidence-based impacts of radiation on public health;
- Education, training and capacity requirements to ensure nuclear specialists of the highest competency;
- Governance structures that should be established for independent oversight;
- The adequacy of resources dedicated to enforcement and compliance;
- Integration with the international nuclear community, to ensure continuous peer review and best practice information exchange; and
- Public communication regimes that should apply to anomalies and incidents that result in radioactive leakages.

### **Towards “energy literacy”**

Engaging the Hong Kong people on nuclear issues is a stepping stone to engaging them on energy in general. All energy options involve trade-offs, costs, benefits, and risks. The same scrutiny and interest in public health and environmental impacts should apply to all energy sectors, including coal, natural gas and hydro-power (and even renewables), as well as leading to a better understanding of the imperative of energy conservation and efficiency. Increased public knowledge and awareness across the spectrum of electricity sources will help governments garner the support necessary from the public for the transition to a low carbon, high quality, sustainable, energy efficient society.