WWF's response to the Consultation Document of Hong Kong's Climate Change Strategy and Action Agenda

- WWF is disappointed that the government has fixated on fuel mix to deal with climate change for Hong Kong and has taken a "quick fix" to increase nuclear energy supply to 50%, making Hong Kong an irresponsible player in the region by shifting its high local carbon footprint and safety risks associated with nuclear energy to the Guangdong Province.

- This approach is contradictory to developing Hong Kong into a Low Carbon Economy as promulgated in the Chief Executive's Policy Address in 2008. While setting a vigorous target for Demand Side Management (DSM) energy control is the prevailing practice in most advanced cities overseas to tackle climate change, the Government in Hong Kong has demonstrated no policy determination to decrease our energy needs through setting any aggressive DSM target. Without addressing energy use from the demand side as an approach, which is proven to be more cost efficient and faster pay back in combating climate change, Hong Kong will continue to be one of the biggest polluters in the region.

- The problem of climate change is about people's activities and all different sectors should be engaged to carry out DSM energy conservation measures in order to achieve our carbon reduction target. Hong Kong can achieve our carbon reduction target without importing more nuclear energy, through increasing LNG supply and the implementation of measures such as green building practices, low carbon appliances, behavioral change and most importantly a reform in the electricity tariff system and Scheme of Control. Such measures will help Hong Kong create a large number of economic opportunities towards sustainable development. WWF's roadmap for achieving Hong Kong's carbon reduction target released in 2010 indicates that we have no need to increase the nuclear supply and bear the risks associated with additional nuclear power plants and unnecessary tariff increases.

1) Emissions Target

- WWF points out that the emissions target of the government is excessively broad (actual reduction 19%-33%, 2005 base level). The reduction target

range is large in real terms (19% vs 33%) and the public cannot see the determination of the government. WWF is concerned that if the lower reduction target (19%) is adopted, some of the measures to improve energy efficiency will never be implemented. WWF calls on the government to more clearly define the details of this massive range, to ensure that Hong Kong effectively drives to a low carbon future.

2) Reasons to oppose increasing reliance on nuclear power

No need to increase

- Hong Kong can achieve our carbon reduction target without importing more nuclear energy. The Roadmap in the Annex covered the Demand Side measures that have to be taken in order to achieve a more aggressive emissions target. Following WWF's Roadmap will achieve 37% reduction in carbon emissions using 2005 as base year. The high side of carbon reduction target of 61% can be achieved without additional nuclear.

Safety

- An increase in purchasing nuclear energy will result in having more reactors in the vicinity of Hong Kong. The incident of a defective fuel rod at the Daya Bay Nuclear Plant earlier this year has highlighted that the public are still not nearly familiar enough with contingency plans for responding to any possible case of radioactive leakage.

High cost

- WWF estimates that, if the nuclear power increases to 50% in the energy mix from 2015, Hong Kong will need to pay HKD 15 billion for purchasing nuclear energy every year.

Low efficiency and flexibility

- According to the experience from other countries, investment in energy efficiency and renewable energy will save cost and time than that of the nuclear power. It usually takes 5 to 10 years to build a nuclear plant and delays are common. Nuclear technology is a base-load technology, and its energy output cannot be adjusted according to the consumers or industrial demands.

Non carbon-zero, violating the principle of sustainability

- WWF does not support the use of nuclear power to reduce greenhouse gas emissions. The entire nuclear fuel cycle, including the processing of nuclear raw materials from nuclear mining and milling, and the construction of nuclear power stations consume a vast amount of fossil fuels. Considering public safety, the decommissioned nuclear site cannot be used for other purposes due to the contamination by radioactive waste. This violates the principle of sustainable development.

3) Demand Side Management

- Buying more energy without solving the root problem is equivalent to encouraging the continuity in wasting energy (over-lighting, super cold in office, shopping mall...) and passing the burden to Guangdong province in terms of nuclear waste and radioactive leakage risks.

- Buying additional nuclear seems to be making an attempt to solve one problem by creating another problem. Don't put all the eggs in one basket. There is a possibility for a delay in the construction of new nuclear plant and it takes at least 8 years to complete cabling to allow electricity transferred through to H.K.

- Because of Hong Kong's needs, there is a possibility that Guangdong province is forced to build an additional nuclear plant, which is not in their original plan. Hong Kong do not know the location, the cost, the type of technology, where and how to bury the nuclear waste as well as the safety standards but we are told to comment on the suggestion stated in HK climate's consultation document, increasing nuclear portion from current 23% to 50%.

WWF urges the government to:

1) Adopt a vigorous energy conservation target for Hong Kong to reduce 25% of total electricity consumption by 2020, following other developed cities.

2) Provide economic incentives, such as tariff rebate, to encourage the business and residential sectors to reduce energy consumption.

3) Review the Scheme of Control and require the power companies in Hong Kong to implement active energy consumption reduction measures.

4) Say no to additional nuclear energy to avoid the risks associated with additional nuclear power plants and unnecessary tariff increases.

- We believe Hong Kong should cope with climate change in the most efficient and cost effective ways following the above measures. Hong Kong has the ability and responsibility to reduce its carbon emissions without more nuclear energy, through increasing LNG supply and the implementation of measures such as green building practices, low carbon appliances, behavioral change and most importantly a reform in the electricity tariff system. Such measures can increase job opportunities and help achieve a higher target of carbon reduction. Do not transfer the problem of nuclear to our neighbor Guangdong, and the associated risks, social injustice and environmental consequences accompanied with using nuclear energy.

- We demand the Government formulate sensible public policies with the total well being of her citizens in mind and say no to additional nuclear power!

Overseas Examples:

<u>Taiwan</u>

- Residential users may enjoy an additional 5% - 20% discount in the electricity tariff if they have been proven successful in slashing their current electricity consumption compared to the same period of time in the previous year. In short, energy-smart users in Taiwan can not only save on their energy consumption but also gain an additional saving from their electricity bill with additional discounts. The incentive scheme has helped achieve a savings of 4.5 billion kWh, which is equivalent to 60% of the annual residential electricity consumption of the city of Taipei in one year.

<u>U.S. (save 7,000 GWh of electricity over the period 2010 to 2012)</u>

- California has been implementing a cash rebate program for the purchase of electrical appliances. Consumers will receive a cash rebate from the power utilities when purchasing highly energy-efficient appliances.

<u>U.K. (18% energy saving by 2016)</u>

- The UK government requires all power companies with a customer base more than 50,000 to set carbon reduction targets. The companies have to reduce their emissions by assisting their consumers in reducing energy consumption through different measures, such as changing efficient light bulbs for customers or assisting them with the installation of the cavity wall for better insulation
- The UK government by legislation demands the electricity utilities to provide energy saving services to homes by installing energy saving equipment, smart meters, insulation in order to lower the energy consumption. The capital cost will be covered by the saving in the electricity bill. The payback

period is around 7 years. Even the existing tenant moved out from the premise, the next tentant is responsible to continue to pay for the difference.

Singapore

- Singapore launched the "10% Energy Challenge" in 2008. Residents who had proven successful in reducing their electricity consumption by 10% within a specific period of time were eligible to enter into a lucky draw.

4) Review the Scheme of Control

- Utilities in general have a financial disincentive to promote energy efficiency because under traditional rate-making, the more electricity utilities sell, the more money they make. Therefore, efficiency programs will be in conflict with the utility's traditional service objective.

- In Hong Kong, under the Scheme of Control (SOC), the disposable profits of the utilty companies are based on the return on their equity capital. The tariff rates are set to allow the utilities to recover their operating and capital expenditures in supplying electricity to their customers. The permitted rates of return on capital investments are also included in the utility's total revenue.

- The cost of service in electric utilities generally tends to comprise a significant portion of capital expenditures associated with investments in power plants, including transmission and distribution systems, which is likely to be predictable in securing the utilities' future revenues. This provides the utilities with a strong incentive to maintain revenues by increasing electricity demands and upgrading their systems.

- If electricity demand is reduced through DSM measures, the need for having a new power plant can be eliminated or deferred. If this happens, revenue levels will be adversely affected. On the other hand, building new power plants will increase equity capital, which is the outcome upon which the economic returns of the utility companies are based.

- In 2005, before the renewal of the second SOC, electricity sales were much lower than forecast, and Hong Kong Electric, which experienced a drop in profit levels, applied for an increase in the electricity tariff of 7.2%. The move provoked widespread discontent among legislative councilors. Therefore, power companies may be able to apply for an increase in electricity tariffs if the permitted level of return is not met due to the reduction in electricity sales caused by energy-saving measures.

- Reviewing the Scheme of Control and including concrete Demand Side Management measures is the way forward to help Hong Kong reduce its electricity consumption. The government may consider:

- Requiring the power companies in Hong Kong to set an aggressive DSM energy-saving target and launch relevant energy-efficiency programs for every customer

- Providing incentives to encourage power companies to participate in specific energy-saving scheme for the users.

- Revising the tariff system in a way that requires those who consume more electricity to pay a higher price. This measure can compensate for the loss of profits that power companies may experience and can reduce the burden of increased tariffs for the more energy-efficient end users.

- Energy poverty must be addressed when there is a significant change in the tariff structure. Special care and subsidies must be given to those in need.

- The existing DSM target to save 15 Gwh by two utilities is equivalent to 0.0004% of the total energy use (excluding energy export portion). This target is insignificant. However, a balance should be made between promoting energy efficiency program to user through utilities as the related operating cost will be covered under SOC and eventually paid by taxpayer. Measures should be developed outside SOC to achieve a more concrete and aggressive energy saving target for users through energy utilities. The part related to energy efficiency in SOC must be seriously reviewed and revised in 2014 interim review. The entire SOC must be reviewed before 2018 in order prepare a new energy policy roadmap for Hong Kong.

- The energy intensity target proposed by APEC and adopted by the Hong Kong government is proven to be outdated as the GDP growth is deviated from the energy usage. As a result, the GDP growth will offset the energy consumption growth, which shows an unreal picture.

5) Increasing the natural gas supply, energy efficiency measures and demand side management offer a better solution

- WWF and Ove Arup & Partners Hong Kong have jointly released the carbon reduction roadmap 2020 for Hong Kong. The study shows that Hong Kong has the ability to achieve 61% reduction in carbon intensity by 2020 (2005 base level) without increasing the nuclear power in the energy mix (or equivalent to 25% reduction in absolute carbon emissions by 2020 (1990 base level)).

- One solution for the Hong Kong government is to increase the proportion of natural gas supply and together implement other measures such as legislating building energy code, tightening the energy efficiency standards, providing the public with economic incentives and adopting demand side management. These measures will increase the job opportunities in Hong Kong and relieve the burden of the citizens in electricity tariff.

- Setting a DSM target is important. If Hong Kong has set an energy usage reduction target of 25% by 2020, there is no need to buy additional nuclear from Mainland China.

6) Building energy conservation

- Building is a major source of GHG emissions. WWF supports the government to enhance building energy efficiency standards and require developers to provide potential users with the environmental and energy consumption information of buildings. We believe the policy is an essential step leading Hong Kong to the development of a low carbon city.

- The government should establish a rating system on building energy efficiency and require developers to disclose carbon emissions data of buildings to the buyers. In the long run, the government should provide incentives to stimulate the supply of buildings with higher energy efficiency performance and extent the scheme to existing building.

The case in the UK

- All homes being on sale in the UK from 2007 have the responsibilities to declare an energy efficient rating to potential buyers as part of a Home Information Pack (HIP). This rating aims to compare the efficiency of one home to others of the same type. This will become an important buying feature because the operation cost of running a home continues to increase. This rating system may become an value-adding benefit of making a home more energy efficient and making it much easier to be sold. Examples of the rating system are as follows:

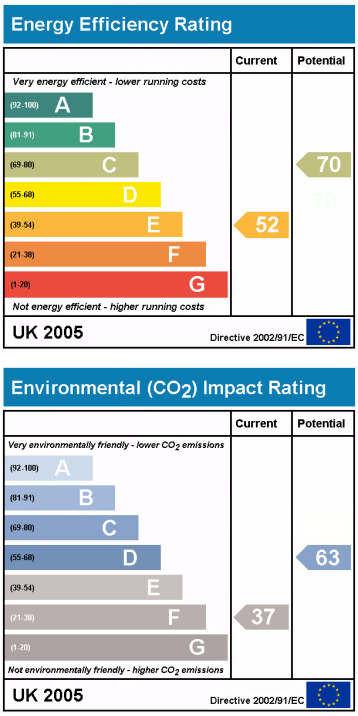

Diagram Source: http://wapedia.mobi/en/Energy_efficiency_in_British_housing

7) Releasing the full consultant report

- WWF requests the Environmental Protection Department to release the full version of the consultant report prepared by the ERM within the first week of November. Similar to other government studies, such as the one for Air Quality Objectives, WWF believes the calculations and relevant technical data should be made available for public inspection and discussion upon the release of the public consultation document.

- The release of such information is essential for the public to evaluate the scenarios stated in the consultation document in order to arrive at the best conclusions for Hong Kong. As the three-month consultation has already begun, WWF demands the Government to release the said data and full report within the first week of November so as to allow sufficient time for the public to reflect their views during the consultation period. If the full consultant report cannot be made available within the first week of November, the Hong Kong government should extend the consultation period to January, 2011 or beyond.

Annex:

WWF's Road Map to reduce carbon emissions without increasing nuclear power

According to the projection by the HKSAR government, the carbon emissions of Hong Kong will be increased to 46,000 Kilotonne (KT) by 2020 under the business as usual model.

To achieve the 25% emissions reduction target (using 1990 as base year) or 37% cut (using 2005 as base year), Hong Kong has to reduce 19,525 KT carbon emissions by 2020. (46,000KT-19,525KT= 26,475 KT)

Hong Kong can continue to have sufficient energy supply without the need for increasing nuclear supply significantly. WWF & Arup has laid down a carbon reduction roadmap to achieve the target and worked through the following measures:

Sector	Measures	Total Carbon Saving (KT)
DSM-Building Energy Code	40% Penetration of BEC in commercial building (4.1M sq meters) 45% reduction by complying the BEC 50% improved efficiency of new buildings	3,500
DSM-Appliances	75% Penetration of energy efficient appliances 35% improvement in efficiency of Appliances	1,200
DSM-Power Plants	Require the power companies in Hong Kong to set an aggressive DSM energy saving target and launch relevant energy efficiency program for customers Provide incentives to encourage power companies to participate in specific Energy Saving Scheme for users Revise the tariff system in a way that heavy consumers, who consume more electricity, should pay a higher price. The measure can compensate the profit loss of power companies and reduce the burden of increased tariff for more energy efficient end users The measures contribute to 15% of total energy consumption reduction	2,300
DSM-Behavioral (Office and Household)	Switch off office equipment and appliances after working hour, set up individual lighting and air-conditioning zone. Apply energy saving films to windows if at all possible. Turn off the personal PC Monitor during the group meeting. Install Smart Meter	1,800

	to understand the source of electricity consumption and the status of usage Every household in Hong Kong saves 500 kWh per year, including say No to standby power, switch off unnecessary appliances, implement more green tips and take part in Earth Hour	
Transport	Fuel efficiency of private cars and buses improve 25% High penetration of Fuel efficiency cars (100%) 100%of buses GV etc Upgraded Efficiency of buses uplift by 25%	1,800
Waste	75% Methane Capture Anaerobic Digestor 500tonnes/day	1,300
Renewable Energy	300MW Wind farm 0.05% of HK area covered with PV	600
Energy Mix	50% LNG +23% Nuclear	7,100
Total		19,600
	(Current trend 2020- Total carbon saving) (46,000- 19,600KT)= ***26,400KT***	

- Using a pie graph to illustrate the above measures, it is easy to draw a conclusion that 60% of carbon reductions comes from Demand Side Management and 40% comes from supply side, including increasing the LNG power to 50% and some Renewable Energy.