

**立法會**  
**Legislative Council**

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**Panel on Economic Services**  
**Special meeting on 30 March 2006**

**Background Brief on**  
**Future development of the electricity market in Hong Kong**

**Purpose**

This paper sets out the background of the electricity market review conducted by the Government and summarizes the major views and concerns expressed by Members on related issues at meetings of the Legislative Council (LegCo) and its committees from the 2004-05 session to the current session.

**Regulatory regime for the electricity supply sector in Hong Kong**

2. The Government has entered into separate Scheme of Control Agreements (SCA) with each of the two power companies. The companies do not have franchises or exclusive rights to supply electricity in the territory. The SCAs are bilateral agreements that set out the right and obligations of the power companies and provides framework for the Government to monitor the companies' affairs for protecting the interests of consumers. The existing SCAs with the power companies last for 15 years and will expire in 2008<sup>1</sup>.

3. The objectives of the SCAs are to ensure that the companies provide a reliable and efficient electricity supply to the consuming public at a reasonable price and that the shareholders of the companies obtain a reasonable return on their investment. The existing SCAs have the following key features:

- (a) An obligation for the power companies to provide sufficient facilities to meet present and future electricity demand. For this obligation, the power companies are entitled to receive a

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<sup>1</sup> The SCA with CLP Power Hong Kong Limited, ExxonMobil Energy Limited and Castle Peak Power Company Limited (referred to collectively as "CLP" hereafter) will expire on 30 September 2008 and that with the Hongkong Electric Company Limited and Hongkong Electric Holdings Limited (referred to collectively as "HEC" hereafter) on 31 December 2008.

13.5% permitted rate of return on their fixed assets and an additional 1.5% for those assets financed by shareholders' funds;

- (b) An obligation for the power companies to supply at lowest possible cost; and
- (c) Provision for periodic financial review and annual tariff review, and for annual audit of the technical and financial performances of the power companies.

## **Post 2008 regulatory regime for the electricity supply sector in Hong Kong**

### Stage I Consultation

4. The existing SCAs between the Government and each of the two power companies will expire in 2008. While the SCA arrangement has served Hong Kong well in making available reliable and safe supply of electricity to consumers in the past years, there have been concerns and criticisms about the arrangement, including the lack of flexibility in response to changes in the economic environment, the permitted rate of return is considered on the high side, and low transparency in the annual tariff and auditing reviews.

5. Against this background, the Administration has carried out detailed studies on the future development of the electricity market after the expiry of the existing SCAs and made reference to experiences in overseas electricity markets. The Administration launched Stage I of a two-stage consultation exercise on 31 January 2005 to seek the views of the public on possible options and various issues relating to the future development of the electricity market after 2008. The Administration briefed the Panel on Economic Services (ES Panel) on the Stage I Consultation paper at the latter's meeting on 28 February 2005. The Administration received 941 responses from different sectors of the community during the three-month consultation period. The Administration informed the ES Panel on the views received vide an information paper (LC Paper No. CB(1) 1855/04-05(05)) in June 2005. A summary of views received during the Stage I Consultation prepared by the Administration is in **Appendix I**.

### Stage II Consultation

6. Taking into account the comments received during the Stage I Consultation, the Administration has drawn up a proposed framework for the future development of Hong Kong's electricity market. On 30 December 2005, the Administration launched the Stage II public consultation exercise to solicit public views on the proposals pertaining to the future regulatory arrangements of the electricity market and other related matters. The

Administration briefed the ES Panel on the related issues at the meeting on 23 January 2006. The Stage II Consultation will end on 31 March 2006. A summary of the recommendations with regard to the arrangements for Hong Kong's electricity market after 2008 is in **Appendix II**. In gist, the proposed regulatory framework contains the following proposals:

- (a) The existing practice of exercising economic regulation by means of bilateral agreement signed between the Government and each of the power companies will continue. The agreements will last for a shorter period of ten years, with an option to extend for another five years, subject to a review before the end of the 10th year;
- (b) The permitted rate of return will be lowered to 7% to 11% with a view to lowering the tariffs. Different rates of return will be applied to different types of assets in the new economic regulatory regime; and
- (c) The proposed future regulatory regime aims to further the environmental objectives promulgated in the 2005 Policy Address, with regard to emissions reduction and use of renewable energy (RE). To ensure and facilitate the introduction of RE, the proposed rate of return for RE infrastructure will be 11% which is highest among all types of assets. To avoid the costs of emissions reduction facilities being passed onto consumers as far as possible, this type of assets will be subjected to the lowest rate of return.

### **Members' major views and concerns expressed at meetings of LegCo and its committees**

#### Motions passed by the LegCo in relation to the development of electricity market in Hong Kong

7. The LegCo has all along been concerned about the development of the electricity market in Hong Kong, the SCAs of the two power companies, and the need to put in place a long-term energy policy. The LegCo passed a motion at the meeting on 2 March 2005 urging the Administration to take into account principles, including tariff level, mechanism for tariff adjustment, and the permitted rate of return, in mapping out the way forward for the future development of the electricity market. Another motion was passed at the LegCo meeting on 15 February 2006 urging the Administration to improve the phenomenon of natural monopoly in the electricity market and implement measures ensuring Hong Kong's electricity market free from monopoly. The wordings of the two motions are in **Appendices III and IV**.

8. On the environmental front, Members also recognize the important role played by the electricity industry in environmental protection. In this regards, the LegCo passed a motion at the meeting on 15 December 2004 urging the Government to reduce air pollution by adopting vigorous measures, including tightening emission standards of power plants and encouraging the use of RE in electricity generation. Another motion was passed by the LegCo at the meeting on 7 December 2005 urging the Government to adopt measures positively to curb the trend of continuing deterioration of air quality in Hong Kong and the Pearl River Delta region. The wordings of the two motions are in **Appendices V and VI**.

Major views and concerns expressed by members at Panel meetings

9. The ES Panel discussed issues relating to the future development of the electricity market in Hong Kong during deliberations of Stage I and Stage II Consultation at the meetings on 28 February 2005 and 23 January 2006, and the financial plans of the two power companies at the meeting on 25 July 2005. The major views and concerns expressed by members at these meetings are summarized, as follows:

*Permitted rate of return*

- (a) The permitted rate of return of 13.5% on fixed assets and the additional 1.5% on assets financed by shareholders' funds are considered high in present-day economic climate. Under the existing SCA arrangement, the two power companies are earning unreasonably high levels of profits;
- (b) The proposed permitted rate of return of 7% to 11% for different types of assets in Stage II Consultation still enable the power companies to make substantial profits. There is suggestion to lower the rate to 5% to 8%;
- (c) Concerns have been raised on the justification for the proposal to apply different rates of return to different types of assets, the basis for determining the varying rates, and the difficulty for the public to understand the varying rates for different types of assets. There is suggestion for adopting a single rate of return of 8% across the board for all types of assets;
- (d) On the base for determining the rate of return, the asset-base approach is perceived to have encouraged over-investment. The Administration should put in place measures monitoring against power companies' attempts to over-invest in fixed assets. In particular, there should be measures for reviewing demand forecasts made by the power companies, preventing

excess capacity, and ensuring the appropriate timing for the installation of additional generation facilities;

- (e) Consideration should be given to adopt alternative approaches for setting the permitted rate of return, such as the Weighted Average Cost of Capital approach, which incorporates the fluctuation in the market interest rate into the formula for calculating the permitted rate of return; other rate base approaches used by overseas jurisdictions in regulating returns of the power companies; and both the fixed assets and equity base approaches as basis for determining returns;

#### *Tariffs*

- (f) There are concerns about the high tariffs charged by the two power companies, difference in tariffs between the companies, and the possibility that the two power companies will continue to raise tariffs prior to the expiry of the SCAs in 2008;
- (g) While it is contemplated that the proposed arrangement in Stage II Consultation may bring about a reduction in tariffs in future, there is concern about the extent of the reduction and whether such reduction will materialize;
- (h) On the tariff setting mechanism, there is suggestion for increasing the transparency in the process by inviting academics and experts with no vested interest to review the financial plans of the power companies;

#### *Interconnection and third party connection/access to the power grids*

- (i) There would be overall economic benefits in increasing the interconnection between the two power companies. Increased interconnection would enable more efficient use of the resources by the power companies, increase market competition and facilitate customer choice of electricity supplies;
- (j) Concrete measures should be put in place to facilitate interconnection and third party connection/access to the power grids of the existing two power companies. In particular, there is support for interconnection with Guangdong Province to facilitate possible new supply sources;
- (k) There are concerns about negative impact of grid access and

interconnection on the reliability of power supply and the line of responsibility in the unlikely event of loss of electricity supply subsequent to the introduction of new suppliers from the Mainland;

*Environmental protection and development of renewable energy*

- (l) The public considers that the power companies should make improvement in the environmental protection aspects. Given that the power companies have earned substantial profits in past years, it is justified for them to bear the environmental-related improvement costs. There is also a need for the Government to incorporate incentive measures into the future SCAs to encourage the power companies to invest more on environment-related facilities;
- (m) Given the proposal in Stage II Consultation to cap emissions from power companies through specifying the maximum allowable quantities in future licences for power plants, there are concerns about the impact of the power companies' investment in such facilities on electricity tariffs, and whether the Government will set an upper limit on the power companies' investment in such facilities;
- (n) There is support for using RE in electricity generation as a means to address pollution from power plants. The Administration should provide financial incentives to the power companies encouraging them to use RE in electricity generation. The target of having 1%-2% of the local power needs met by RE by 2012 should be raised;
- (o) Given that energy-from-waste is the most cost-effective types of RE, a higher rate of return should be given to RE assets using energy-from-waste;

*Development Fund and Rate Reduction Reserve*

- (p) There is concern about the disposal of balances in the Development Fund and Rate Reduction Reserve upon the expiry of SCAs. Concern has been expressed that before 2008, the power companies may use the balances to achieve the permitted return for their shareholders rather than returning the monies to customers;

*Institutional set-up and regulatory approach*

- (q) The Government should consider setting up an independent

committee to study the liberalization and competition issues of the electricity market in Hong Kong; and

- (r) Consideration should be given to include representatives from relevant labour unions in the future regulatory framework of the power companies.

10. Emissions from power plants have all along been a cause of public concern. In this connection, the Panel on Environmental Affairs (EA Panel) discussed issues relating to air pollution of electricity generation at the meeting on 25 October 2004, environmental aspects of the financial plans of the two power companies and measures for the power companies to meet the emission reduction targets by 2010 at the meetings on 29 September 2005 and 23 January 2006. The major views and concerns expressed by members are summarized, as follows:

- (a) Reliance on coal for electricity generation as a result of unstable supply of natural gas has contributed to increased air pollution. The power companies should endeavour to control emissions as part of their social and corporate responsibility;
- (b) The Administration should liaise with the power companies to work out an economically and environmentally acceptable solution to control emissions from power plants. This may include identifying a suitable storage depot for natural gas to ensure stable supply;
- (c) There is concern about the cost implications, particularly the possible impact on tariffs, in expediting compliance with the emission reduction targets by the two power companies by 2010, as against their own pledges by 2011 or 2012. It is however noted that the costs implications of implementing emission reduction measures would be much less as compared to the health costs associated with deteriorating air quality; and
- (d) While supporting the development of RE as a means to address air pollution problem in Hong Kong, there are concerns about the constraints on development of RE supply in Hong Kong, particularly the land requirement in developing wind energy through the use of wind turbines. In this connection, the Government should provide assistance and financial incentives to encourage the development of RE. The two power companies should also explore the possibility of collaborating with the Mainland in the development.

### **Recent developments**

11. The ES Panel has invited representatives of the two power companies and the Administration to a special meeting on 30 March 2006 to discuss the views and response of the power companies on the proposed arrangements in the Stage II Consultation. The EA Panel met with deputations and the two power companies at the meeting on 27 March 2006 to discuss the environmental aspects of the Stage II Consultation, including the development of RE.

### **References**

12. A list of the relevant papers with their hyperlinks is in **Appendix VII**.

Council Business Division 1  
Legislative Council Secretariat  
28 March 2006



**Future Development of the Electricity Market in Hong Kong :  
Summary of Views Received during the Stage I Public Consultation**

**A. Objectives** (80% of the respondents expressed views on this issue: 73% individuals; 7% others)

- Amongst those who offered views on this issue, 62% considered reliability and safety of electricity supply most important and should be maintained in the future electricity market. Some also considered other objectives such as minimising environmental impact [16%] and reasonable tariffs [10%] important.
- There were also suggestions to include as objectives incentive for investment, improving efficiency, clear responsibility and obligation, environmental protection, energy efficiency and conservation and sustainable development.

**B. Return for the Power Companies**

- (i) Based on Investment (12% of the respondents expressed views on this issue: 9% individuals; 3% others)
- Views were divided on the appropriate level of return for the power companies. 35% of the respondents including most of the political parties and trade and industry organisations, considered the current permitted rate of return too high and should be lowered. 21% considered the current rate of return reasonable.
  - Some of the political parties and trade and industry organisations suggested that the rate of return might be lowered to about 6% to 10%.

- On the base for determining the rate of return, 13% supported the asset-base approach, 3% suggested alternative approaches such as the equity-base approach might be considered.
  - Some respondents also suggested that the rate of return of the power companies could be linked to economic indicators [14%] or be determined by other approaches such as the cost of capital [13%].
  - For the review period, 15% considered the current 15-year review period adequate, while 14% suggested that the review period be shortened to better reflect the prevailing economic situation.
  - The two power companies considered that the current permitted rate of return, the adoption of the asset-base approach for determining the return and the 15-year review period reasonable, and had reservations in adopting alternative approaches for determining the return in view of the uncertainties involved. They opined that given the long-term nature of investment in electricity supply infrastructure and fuel sourcing, the electricity supply sector required a stable and certain operating environment that was conducive to long-term investment.
- (ii) Based on Performance (4% of the respondents expressed views on this issue: 2% individuals; 2% others)
- 53% of the respondents who offered views on this issue suggested that incentives such as bonus and penalty be provided based on the power companies' operational efficiency and/or improvements in service quality. 45% also proposed that rewards be granted for improvements in environmental performance, e.g. investment in environmental protection initiatives, using alternative energy sources such as cleaner fuels, promoting energy efficiency and conservation and demand side management.

- The two power companies were of the view that while incentives on efficiency improvements could be considered, performance-based regulation would not be suitable for Hong Kong because experience in overseas electricity markets indicated that this form of regulation would encourage under-spending with power companies' cutting back on necessary system maintenance and upgrading. They opined that mechanism to control overspending was already in place under the current regulatory regime, viz., the excess capacity adjustment mechanism, to guard against any excessive investment by the power companies.

**C. Tariffs** (26% of the respondents expressed views on this issue: 22% individuals; 4% others)

- 69% of the respondents who offered views on this issue, primarily individuals, considered the current tariff levels reasonable, comparable with those in overseas electricity markets, and only accounted for a small percentage of their income/expenditure. 5% considered the current tariff level high.
- Some of the respondents who offered views on this issue also suggested that the transparency in the tariff setting mechanism be enhanced [7%], tariffs be linked to economic indicators [5%], and more flexible tariff plans such as time of use tariffs be further developed by the power companies [4%].
- The two power companies considered the current tariff levels reasonable and compared favourably with those in overseas cities. They did not support linking tariffs to local consumer price indices and opined increasing transparency in the tariff setting mechanism should be balanced against the need for the power companies to keep commercially sensitive information confidential.

**D. Increased Interconnection** (11% of the respondents expressed views on this issue: 8% individuals; 3% others)

- 62% of the respondents who offered views on this issue, primarily individuals, did not support increasing interconnection between the two power companies or with the Mainland. They were concerned that increasing interconnection might affect the reliability of supply and lead to increase in tariffs due to the substantial costs involved.
- 21% held different views, mainly the political parties, trade and industry organisations, major consumers and green groups, and reckoned that increasing interconnection would enable more efficient use of the resources by the power companies, increase market competition and facilitate customer choice of electricity suppliers.
- Professional bodies in general held an open view on increasing interconnection and suggested that considerations be given to issues such as costs and benefits, system efficiency, etc.
- The two power companies expressed reservation on increasing interconnection. They were of the view that the costs involved would outweigh the potential benefits, there was little merit in introducing a third party to provide and operate any new interconnector, and that an increase in interconnection capability might not be able to enable customer choice, as a competitive market had not yet emerged.

**E. New Supply Sources** (22% of the respondents expressed views on this issue: 19% individuals; 3% others)

- 66% of those who expressed views on this issue did not support or expressed reservation on importing electricity from the Mainland. They were concerned about the possible impact on the reliability of electricity supply and that surplus electricity might not be available in the Mainland for supply to Hong Kong in the short term. Some green groups were concerned about the possible environmental impact associated with the supply of power from the Mainland, citing, for example, the difficulty in controlling the environmental performance of power supply facilities outside Hong Kong.
- 8% of the respondents who expressed views on this issue supported import of more power from the Mainland. They were of the view that import could lead to lower tariffs or facilitate customer choice.
- The professional institutions suggested that relevant legal, commercial, environmental and technical issues be resolved prior to considering importing more power from the Mainland.
- The two power companies opined that further reliance on power import from the Mainland might not be beneficial, having regard to the possible impact on the reliability of supply, environmental concerns, differences in the legal framework and regulatory arrangements between Hong Kong and the Mainland, high transmission costs, etc.
- 26% of the respondents who expressed views on this issue supported the introduction of renewable energy (RE) sources for environmental reasons. 1% expressed reservation that the higher costs of RE sources might lead to increase in electricity tariffs.
- The two power companies were positive to the introduction of RE for power generation, but cautioned that practical issues and related costs and benefits should be carefully assessed.
- Some specific views on how RE might be sourced included -

- the power companies be required to purchase a certain percentage of their electricity generated from RE sources;
- the power companies be required to allocate a fixed percentage of their revenue for development of RE; and
- incentives and suitable sites be provided by the Government to encourage the development of RE.

**F. Grid Access for Third-party Users** (5% of the respondents expressed views on this issue: 3% individuals; 2% others)

- 51% of the respondents who expressed views on this issue, mainly the political parties, trade and industry organisations, professional bodies, major consumers and green groups, supported grid access. They considered that grid access could facilitate the development of RE and other local energy sources, entry of new electricity suppliers, future introduction of competition and customer choice of suppliers.
- 31% who did not support or expressed reservation on grid access were mainly concerned about the possible impact on supply reliability and the uncertainties in achieving any economic benefits due to the levy of network charges.
- The power companies did not consider mandatory grid access feasible, given the small size of electricity market, the scarcity of land for construction of electricity supply facilities and the lack of indigenous resources in Hong Kong. They also opined that many complex issues would have to be resolved before mandatory grid access could be considered, such as the formulation of reliability, safety and technical standards for grid access, determination of charges for grid access, property rights of the power grids, delineation of liability, dispute resolution mechanism and the need to provide for an independent system operator.

**G. Regulatory Arrangement** (42% of the respondents expressed views on this issue: 39% individuals; 3% others)

- 71% of the respondents who expressed views on this issue, primarily individuals, favoured future regulation to be made through either the current SCA-type arrangement or a similar bilateral arrangement, saying that such a regulatory arrangement had been proven to be effective in meeting the energy policy objective. 20% of the respondents suggested certain modifications/ improvements to the SCAs, such as increasing the transparency of the regulatory regime, shortening the review period, and placing more emphasis on environmental protection.
  - 5% suggested adopting a legislative approach for future market regulation.
  - 2% suggested an SCA-type of arrangement pending the setting up of a legislative regulatory framework or an open market in the longer term.

**H. Institutional Set-up** (6% of the respondents expressed views on this issue: 4% individuals; 2% others)

- Views were divided on this issue, with 39% considered that the existing institutional arrangements should continue, 15% opined the responsibilities of relevant government bureaux/departments responsible for energy should be rationalised, and 39% supported an independent regulatory authority should be set up. Those who preferred the status quo, primarily individuals, considered the current arrangements adequate, simple and effective with relatively low administrative costs, and changing the existing arrangements might lead to more red-tape and waste of public resources.

- The political parties, major consumers, green groups generally favoured the setting up of an independent regulatory authority.
- Some also suggested that the future independent regulatory authority should have broader terms of reference to oversee other energy-related matters.

**I. Competition** (57% of the respondents expressed views on this issue: 52% individuals; 5% others)

- 89% of the respondents, primarily individuals, expressed reservation on introducing competition into the electricity market. 6% of the respondents supported increasing competition in the electricity market, some of whom suggested a gradual process. The main concerns with introducing competition included -
  - the significant risks involved such as the possible impact on the reliability of supply; and
  - competition would only benefit “large consumers” at the expense of “small consumers”.
- The two power companies had reservation on introducing competition into the electricity market. They considered that “suitable market conditions” for introducing competition were not yet present, and that competition might lead to lower quality of electricity supply, more complex market structure, etc.



- The trade unions of employees in the power companies were concerned that job security might be affected, when competition is to be introduced.

## **J. Other Issues**

- There were some other suggestions, mainly from the green groups, concerning environmental issues which included -
  - setting up/tightening emission standards and targets;
  - addressing environmental issues in a regional and an international context;
  - introducing levies on emissions and emissions caps; and
  - stepping up demand side management and energy efficiency and conservation programmes.
- There were also some suggestions related to the technical aspects of the electricity supply industry, such as implementing coordinated power system planning, as well as the operational aspects of the industry, such as reviewing reliability standards or supply rules for the future electricity market.

(Source: Annex to information paper provided by the Administration on “Future Development of the Electricity Market in Hong Kong: Views received during the Stage I Public Consultation (LC Paper No. CB(1)1855/04-05(05))

**Extract from the consultation paper on  
“Future Development of the Electricity Market in Hong Kong  
- Stage II Consultation”**

**CHAPTER 3**

**SUMMARY OF RECOMMENDATIONS**

3.1 In summary, our recommendations with regard to the arrangements for Hong Kong’s electricity market after 2008 are as follows –

**A. Policy Objective**

[Paragraphs 2.1 to 2.2]

To ensure that the public can continue to enjoy reliable, safe and efficient energy supplies at reasonable prices, and to minimise the environmental impact caused by the production and use of energy.

**B. New Supply Sources**

(I) Supply from the Mainland

[paragraphs 2.4 to 2.10]

- To continue to monitor closely developments in the electricity market in Guangdong so as to identify possible sourcing opportunities including RE in a more timely manner;
- to assess the economic benefits that could be realised for Hong Kong consumers with electricity import from the Mainland, having regard to reliability, safety and tariff;
- to enhance liaison with the relevant Mainland authorities and explore how technical constraints to the development of relevant infrastructure on the Mainland side of the border might be addressed; and
- to make preparations, including developing regulatory arrangements to enable grid access for new electricity suppliers and for enhanced interconnection between Hong Kong and Guangdong, for possible supply from the Mainland.

(II) Renewable Energy (RE)  
[Paragraphs 2.11 to 2.17]

To make arrangements in the future regulatory regime to provide financial incentives to power companies for grid connection/access for RE systems to promote the use of RE with the view to meeting the 1% – 2% RE target by 2012 in the First Sustainable Development Strategy promulgated by Government in May 2005.

(III) Arrangements to Cater for New Supply Sources  
[Paragraphs 2.18 to 2.26]

(i) Grid Access

- To seek the agreement of the two power companies to provide connection/access to their grids –
  - (a) to institute a standard arrangement for RE users to connect to the grid for back-up supply and to extend the arrangement to cover RE systems with capacities above 200kW; to seek the agreement of the power companies to waive the nominal administrative fees for grid connection by RE users;
  - (b) to further promote the use of RE by facilitating generating facilities employing RE to connect and feed electricity to the power companies' power grids; and
  - (c) in the long run, to provide grid access to other power suppliers, including possible new supply sources from the Mainland;
- to have grid connection/access for RE users/generating facilities using RE negotiated between the prospective grid user and the respective power company, and the Government will assist where necessary and when requested by either party, including assisting in arriving at mutually agreed access charges; and

- the Government to initiate and draw up the regulatory framework regarding provision of grid access for other new supply sources in the long run, which might involve setting up a separate regulatory authority.
- (ii) Increased Interconnection

*Interconnection between CLP Power and HEC*

- To request the two power companies to take forward jointly increased interconnection at an “optimum” level to reap the benefits of reserve capacity sharing and coordinated generation planning and to provide more flexibility for the power companies in taking forward the emission reduction projects;
- to request the two power companies to plan for increased interconnection, taking into account the results of detailed engineering assessments of the existing interconnector;
- to work with the two power companies to review and harmonise the planning criteria and reliability standards for the interconnected power system; and
- to prepare the ground work for the future setting up of a separate regulatory authority to oversee technical and economic issues related to enhancing interconnection between the two power companies, and to providing grid access to any new supply sources in future.

*Interconnection with Guangdong*

- To keep close track of developments in the Mainland, and maintain close contact with the relevant Mainland authorities with regard to infrastructure and related issues; and
- to make preparations for enhanced interconnection, covering both technical and regulatory aspects such as conducting power system planning & utilization studies and power flow assessment, and drawing up relevant legislative framework.

## **C. Proposed Regulatory Arrangements**

[Paragraphs 2.27 to 2.73]

### **(I) Safety Regulation**

To continue to regulate by legislation safety in the supply and use of electricity, and update relevant requirements in tandem with technological developments and international practices.

### **(II) Environmental Regulation**

- To continue to regulate by legislation environmental emissions in the production of electricity; and
- to adopt additional measures, under the economic regulatory arrangements, to minimise the costs to consumers in meeting the emission reduction targets and, to promote energy efficiency and conservation, environmental improvements, and use of renewable energy in electricity generation.

### **(III) Economic Regulation**

- To continue economic regulation by means of bilateral agreement.

#### **(i) Regulatory Instrument**

- To be for 10 years, with an option to extend for another five years subject to a review to be conducted towards the end of the term;
- to include provisions for annual tariff review, annual auditing review, periodic review of the power companies' development plans, and interim review every five years; and
- to include specific provisions to require all development plans relating to electricity supply and tariff adjustments to be approved by the Government, and key components for determining the permitted rate of return to be reviewed, and the permitted rate of return to be adjusted where appropriate, every five years.

(ii) Return

- To adopt a two-pronged approach, using fixed assets and performance as the base for determining return;
- to continue to use ANFA for calculating return to the power companies and to tighten the existing excessive capacity mechanism;
- to provide financial incentives to the power companies for increasing the use of RE and improving their performance in energy conservation and demand side management. “Gains” thus achieved by the power companies should be shared with the consumers;
- to provide financial incentives to the power companies for improvement on operational efficiency, supply reliability and customer service. Disincentives will be included to discourage under-performance;
- to link the permitted rate of return of the power companies on all their fixed assets to their achievement of the emission caps stipulated in the SPLs issued under the APCO, and reduce such permitted rate of return if they do not achieve the caps. And to provide financial incentives in the form of “bonus” return to encourage the power companies to reduce their emissions to levels below those required in the SPLs;
- to adopt an integrated approach in determining the permitted rate of return which will reflect the cost of raising capital and risks. To review the key components, and adjust the rate where appropriate, every five years to reflect the prevailing economic conditions; and

- to apply different rates of return between 7% – 11% to different types of assets to reflect the different investment risks associated with different operations in the supply chain and to further certain policy objectives, such as minimising impact on the environment and encouraging development of RE.

(iii) Tariff

- To continue to include the costs for making available supply (operating costs and fuel charges) and the agreed return to the company for providing the service in determining the tariff;
- to subject all tariff adjustments to Government's approval to ensure that they are cost-justified, reasonable and affordable to consumers;
- to conduct tariff review on an annual basis and to request the power companies to make available more information to the public;
- to maintain the Fuel Clause Account for tariff stabilisation purpose, and fuel costs will continue to be borne by consumers;
- to maintain a Tariff Stabilisation Fund for the retention of net revenue in excess of the agreed return for the power company, which when necessary will provide funds to ameliorate the impact of tariff increase for consumers; and
- to lower the "cap" on the balance in the Tariff Stabilisation Fund, and return monies in excess of the "cap" to consumers in the immediate following year in the form of a one-off rebate or tariff reduction.

(IV) Institutional Setup

- To maintain the current setup with responsibilities for economic, safety and environmental regulation undertaken by various Government bureaux and departments.
- To keep under review the need to set up a separate regulatory authority, with representation from various stakeholder groups including consumers, investors, academics and experts, trade unions, etc, and prepare the ground work for such a new setup in the future.

– ENDS –



**Wording of the motion passed  
at the Council meeting held on 2 March 2005**

“That, as the Scheme of Control Agreements of the two power companies will expire in 2008, this Council requests the Government to seriously consider the following principles in order to decide on the way forward for the future development of the electricity market:

- (a) tariffs charged by the power companies should be reasonable;
- (b) the mechanism for tariff adjustments should be more transparent, and a study should be conducted on the introduction of a mechanism that allows both upward and downward tariff adjustments;
- (c) any new scheme of control agreements should have adequate flexibility and should allow for a review within a reasonable number of years;
- (d) more considerations should be taken into account in determining the permitted rate of return, and the rate should be reduced;
- (e) effective measures should be adopted to minimize the emissions of pollutants in the generation of electricity;
- (f) the power companies should be encouraged to develop and introduce the use of renewable energy;
- (g) the stability and safety in the supply of electricity should be maintained;
- (h) the full implementation of power interconnection should be actively studied; and
- (i) the power companies should use more environmentally friendly energy sources;

furthermore, the Government should also study the feasibility of establishing an energy authority with the responsibility of formulating a long-term and comprehensive energy policy.”

**Wording of the motion passed  
at the Council meeting held on 15 February 2006**

“That this Council urges the Government to earnestly improve the current phenomenon of natural monopoly in the electricity market in Hong Kong, so as to avoid prejudicing consumers' interests, and demands that the Government implement the following measures to ensure that Hong Kong's electricity market is free from monopoly, so that the people of Hong Kong can enjoy reasonably-charged, safe and stable electricity supply services:

- (a) re-setting electricity tariffs at a reasonable level by lowering the permitted return allowed to the power companies in respect of their electricity-related operations for each year from the current 13.5% of their average net fixed assets to 7% or below;
- (b) strengthening the regulation of power plants to ensure that their operations and the pollutants emitted comply with the relevant environmental protection standards, and formulating practicable measures as well as providing proper incentives to ensure that the power companies actively develop renewable energy;
- (c) setting a timetable for opening up the electricity market in Hong Kong and aiming for its implementation in the coming 10 years, so as to introduce competition and break the current natural monopoly of Hong Kong's electricity market by the two companies;
- (d) requesting the CLP Power Hong Kong Limited to offer rebates to its customers in proportion to their electricity consumption by the year 2008 using funds from its Development Fund;
- (e) actively studying the full implementation of power interconnection;  
and
- (f) requesting that the two power companies shall ensure the stability of their workforce, and recruit their technical staff at all levels in a planned manner and provide them with continuing training, so as to secure a reliable and stable supply of electricity.”

**Wording of the motion passed  
at the Council meeting held on 15 December 2004**

“That, since air pollution remains severe in Hong Kong in recent days, which not only poses a health hazard to Hong Kong people, but also discourages foreign businesses from investing in Hong Kong, this Council urges the Government to expeditiously discuss with the Guangdong authorities to jointly draw up a definite timetable for various work items and adopting vigorous tackling measures to improve the situation, including:

- (a) strengthening co-operation with the Guangdong authorities to tighten the emission standards for factories, power plants and motor vehicles, etc, setting the mid-term targets and an interim review timetable in this regard, and achieving the emission reduction targets for 2010 at an earlier date;
- (b) endeavouring to unify the emission standards and regulatory systems in Hong Kong and Guangdong;
- (c) expeditiously implementing the emissions trading pilot scheme in collaboration with the Guangdong authorities;
- (d) providing Hong Kong business operators in the Pearl River Delta who have installed air pollution control systems in their plants with tax relief on depreciation of the relevant machinery;
- (e) striving to reduce pollutants such as sulphur dioxide emitted in the process of power generation by the two power companies in Hong Kong, and increasing the use of more environmentally friendly energy;
- (f) further promoting the incentive scheme for liquefied petroleum gas (LPG) light buses and extending it to light goods vehicles;
- (g) considering the provision of additional sites for setting up LPG filling stations;
- (h) actively engaging in research and development on the utilization of renewable energy, formulating a policy on renewable energy, requesting the two power companies to follow this policy, and stipulating in the Scheme of Control Agreements with the power companies the proportion of renewable energy to be used in electricity generation;

- (i) expediting the introduction of a registration system for vehicle repair technicians and garages;
- (j) vigorously introducing other types of environmentally friendly vehicles and related incentive measures, and offering relief on the first registration tax and licence fee to environmentally friendly vehicles, such as hybrid electric-petroleum vehicles;
- (k) vigorously introducing other types of environmentally friendly fuels and related incentive measures;
- (l) setting higher utilization targets for renewable energy;
- (m) requesting franchised bus companies to expeditiously renew their fleets, deploy buses that comply with Euro III emission standards to serve routes along busy roads and introduce additional bus-bus interchange discount schemes;
- (n) actively studying the feasibility of increasing the fines for smoky vehicles;
- (o) using such high-technology equipment as satellite imaging and remote surveillance devices to enhance monitoring of air pollution sources and changes in pollution conditions;
- (p) the HKSAR Government taking the lead in implementing energy conservation measures in various departments, and promoting community-wide involvement in energy conservation;
- (q) adopting suitable methods to regulate products for industrial and commercial use that may emit volatile organic compounds;
- (r) stepping up the testing of vehicle emissions and introducing road-side remote sensors to check emissions from vehicles on the roads in the territory and from cross-boundary vehicles, so as to ensure their compliance with Hong Kong's emission standards;
- (s) establishing a safe and convenient network of pedestrian walkway systems, which should include pedestrian precincts, footbridge networks and automatic escalators, etc, in densely populated areas that have a high pedestrian flow, so as to develop Hong Kong into a 'city of elevated corridors', which will enable vehicle-pedestrian segregation, improve the environment for walking and encourage people to walk; and

- (t) further promoting the 'Indoor Air Quality Management Programme' and enacting relevant legislation, as well as joining hands with the industrial and commercial sectors in actively promoting the programme, in order to prevent poor indoor air quality from harming the public's health,

with a view to minimizing emissions, thereby enabling residents of the whole Pearl River Delta to enjoy clean fresh air.”

**Wording of the motion passed  
at the Council meeting held on 7 December 2005**

"That, further to the passage of my motion on 'Vigorously reducing air pollution', as amended by other Members, by this Council last year, I put forward a proposal on 'Collaborating in tackling cross-border air pollution' jointly with 92 members of the National Committee of the Chinese People's Political Consultative Conference at its meeting in March this year; the proposal received positive response from the State Environmental Protection Administration of China which has indicated that it will continue to take the lead and coordinate the work in this regard in order to enhance cooperation between Hong Kong and Guangdong on the environmental protection front; in this connection, this Council urges the Government to adopt the following complementary measures more positively with a view to curbing the trend of continuing deterioration of air quality in Hong Kong and the Pearl River Delta ('PRD') region:

On the cooperation between Hong Kong and Guangdong:

- (a) endeavouring to achieve as early as possible the emission reduction targets for 2010 regarding the four types of pollutants;
- (b) expediting the formal commissioning of the PRD regional air quality monitoring network and other effective measures, and enhancing the transparency in the dissemination of the monitoring information, so as to expeditiously unify the emission standards and regulatory regimes between Hong Kong and Guangdong;
- (c) expeditiously implementing the emissions trading pilot scheme;
- (d) stepping up negotiations with the Mainland authorities to provide business operators who have installed air pollution control systems in their plants in the PRD region with tax relief on depreciation of the relevant systems;
- (e) maintaining close cooperation with the State Environmental Protection Administration of China and the Guangdong Environmental Protection Bureau to promote the prevention and control of regional air pollution;

On the local front:

- (f) introducing legislation to require motorists to switch off the engines of their vehicles while waiting, and according priority to regulating emissions from idling engines of private cars and government vehicles as well as idling engines of vehicles in school and hospital premises;
- (g) on condition that there is no additional burden of electricity charges on the public or the industrial and commercial sectors, urging the two power companies to expedite various emission reduction projects and use more environmentally friendly fuels;
- (h) prolonging the incentive scheme for liquefied petroleum gas (LPG) light buses and promoting the switch of light goods vehicles to LPG;
- (i) expediting the provision of additional sites for setting up LPG filling stations;
- (j) actively engaging in research and development regarding the utilization of renewable energy, formulating a policy on renewable energy, setting utilization targets for renewable energy, requesting the two power companies to follow such policy and targets, stipulating in the Scheme of Control Agreements with the power companies the proportion of renewable energy to be used in electricity generation, and providing economic incentives to encourage the power companies to use more renewable energy; at the same time, formulating measures to promote the incorporation of renewable energy equipment into the power supply network;
- (k) vigorously introducing environmentally friendly vehicles which run on a combination of petrol and electricity, hydrogen or natural gas, etc, including heavy and medium goods vehicles as well as buses; offering tax concessions and introducing environmentally friendly fuels, and formulating related incentive measures;
- (l) actively studying the feasibility of increasing the fines for smoky vehicles;
- (m) formulating a comprehensive and effective policy on energy conservation, with the Government taking the lead in implementing energy conservation measures in various departments and setting higher energy conservation targets, with a view to promoting community-wide involvement in energy conservation;

- (n) expeditiously implementing the regulatory scheme for products containing volatile organic compounds on which the Government and the trades have reached a consensus;
- (o) stepping up the testing of emissions from vehicles to ensure their compliance with Hong Kong's emission standards; and
- (p) expediting the implementation of the 'Indoor Air Quality Management Programme' and joining hands with the industrial and commercial sectors in actively promoting the programme, thereby preventing poor indoor air quality from harming the public's health,

so that the emission reduction targets originally set for 2010 can be achieved as early as possible."



## Future development of the electricity market in Hong Kong

### List of references

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Environmental Affairs Panel	25 October 2004	Minutes ( <a href="http://www.legco.gov.hk/yr04-05/english/panels/ea/minutes/ea041025.pdf">http://www.legco.gov.hk/yr04-05/english/panels/ea/minutes/ea041025.pdf</a> )
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