



香港工程師學會

THE HONG KONG INSTITUTION OF ENGINEERS

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Clerk to Panel
Panel on Environmental Affairs
Legislative Council Secretariat
3rd Floor Citibank Tower
3 Garden Road Central
Hong Kong

Dear Sirs

LegCo Panel on Environmental Affairs – Special Meeting on 29 September 2005

Thank you for your letter of 28 July 2005 inviting us to put forth our views on the environmental aspects of the financial plans of the two power companies and attend the captioned special meeting.

Having considered the available information regarding the subject matter, we are pleased to submit our views on areas of concern to the engineering profession as well as to the community as a whole. The Institution upholds the principle that the electricity supply in Hong Kong must be reliable, safe, environmentally sound and cost-effective. Details of our members' concerns and views are elaborated in the enclosure for your consideration.

Yours sincerely

Ir Dr Greg WONG Chak Yan
President

Encl.

Enclosure**Views from the Hong Kong Institution of Engineers
on Environmental Aspects of the Financial Plans of Two Power Companies
for submission to LegCo Panel on Environmental Affairs****Introduction**

In response to the captioned subject, the Hong Kong Institution of Engineers (HKIE) has taken due consideration of the financial plans of the two power companies and has sent representatives to attend the meetings held by CLP Power Hong Kong Limited (CLP), The Hongkong Electric Company Limited (HEC) and the Environmental Protection Department (EPD) respectively. The Institution is pleased to submit views compiled from members of expert divisions for the Panel's perusal.

General Views

2. The HKIE upholds the principle that the electricity supply in Hong Kong must be reliable, safe, environmentally sound and cost-effective.

3. We are given to understand that an agreement was reached in year 2002 between the HKSAR Government and the Guangdong Province in reduction of atmospheric emissions of 40% in sulphur dioxide (SO₂), 20% in nitrogen oxides (NO_x) and 55% in respirable suspended particles (RSP) by year 2010 based on their deduced baseline level in 1997. Subsequent caps were assigned to the two power companies. In the absence of information, the HKIE could not comment if the agreed emission reduction targets for the Pearl River Delta (PRD) Region nor the proposed emission caps to the power companies were justified and reasonable.

Fuel Source

4. At present a mix of fuels are employed. The benefit is to minimize key dependence on anyone of them.

5. It is seen that unless there can be swift switch of fuel from coal to gas, the 2010 targets could not practically be achievable. The fuel switch is to a certain extent affected by the reduced load growth and hence deferment of new installation firing on gas. The Institution suggests that both power companies should continue to acquire alternative fuel source, embarking on aggressive renewable energy facilities and continue to perform local research programmes for energy efficiency.

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6. The Institution also supports the continual search for reliable gas fuel resources to facilitate the fuel transition and gas generation equipment be given top priority when aged generation facilities are to be replaced or when new generation facilities have to be added. This would allow gradual and more acceptable transition to cleaner fuel, as well as continuous monitoring of the technical and economic impact of the fuel transition.

7. It should be noted to ensure safe and reliable electricity supply, acceptable cost impact to the community and for avoiding unnecessary write-off and (environmental) disposal of existing healthy generation equipment, the Institution would not support the radical fuel switch from coal to gas.

8. We would point out that the use of renewable energy resources such as wind and solar energy is still far from becoming a reliable source of power generation and supply in Hong Kong.

Improvement Measures

9. Despite that there will still be some shortfall in terms of the time frame in meeting the proposed SO₂, NO_x, RSP limits by 2010, the Institution noted that both power companies appeared to have tried on a best endeavour basis, all targets towards meeting the emission cap at 2010.

10. The Institution agreed for retrofitting improvement, the following factors should be given due consideration, in particular given the limited land space available within the generation compound:-

- ✧ The generation capacity needed at all times with respect to the scheduled upgrading, retrofitting and new works.
- ✧ Plant outage and availability.
- ✧ Maximum supply reliability.
- ✧ Planning for work logistics (including all necessary preparatory planning and upfront engineering).

11. The Institution noted, with regard to the environmental-related projects, both power companies had targeted towards meeting the environmental objectives by, among other things, refurbishment of coal-fired and gas/coal-fired generating plants and the installation of Flue Gas Desulphurization (FGD) and Selective Catalytic Reduction (SCR) plants, and Low NO_x Burner (LNB).

12. The Institution concurs that the two power companies should take account of every practicality to maintain a balance of economical sense versus technical and technology applications.

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Pearl River Delta (PRD) Region

13. Based on the government papers of the Guangdong Province on Environmental Planning of the PRD Region 2004–2020, the targeted 2010 SO₂ emissions will be reduced by about 25% from the 1997 level, NO_x emission by about 7% and RSP level increased by 16%. Whilst the HKSAR Government is planning to impose stringent emission caps on Hong Kong power companies, they should make the best endeavour to ensure that the mainland could meet the mutual governmental agreed emission reduction targets.

14. It appears that the 2010 caps being proposed by the HKSAR Government would not be achievable unless emission trading is to be carried out. The success of emission trading depends greatly on transparency, consistence in baseline setting and methodology as well as quality assurance of continuous emission monitoring data. Commercially available proven equipment for continuous emission monitoring of RSP is yet to be available. Taking into consideration this circumstance, we have reservations in expedient adoption of emission trading as an emission reduction measure with the current state of art of technology, level of data transparency and quality assurance.

15. Although the proposed governmental emission reduction targets appear unachievable, with the present fuel mix, we would support the continuing effort of the two power companies to upgrade their pollution control system such as LNB, SCR and FGD, search for new cleaner coal and more expedient but gradual (subject to safe, reliable and cost-effective electricity supply) change of coal to gas. We are also of the view that more attention should be given on the social impacts of the proposed projects and affordability of the general public.

16. We know very well that pollution knows no boundaries. Hong Kong had invested much in pollution control and further investment in this area will only bring marginal benefits to the PRD Region. Greater environmental benefits would undoubtedly be reaped if the same amount of investment were to be made on the mainland. The Institution is of the view that qualified engineers from Hong Kong must be employed to ensure that the design, operation, maintenance, monitoring and quality control are up to international standard if Hong Kong money is to be invested into the pollution control system of the power plants in the PRD Region. We suggest the HKSAR Government to consider means to induce such investment from Hong Kong by different ways of encouragement and economic incentives to improve the air quality of the PRD Region.