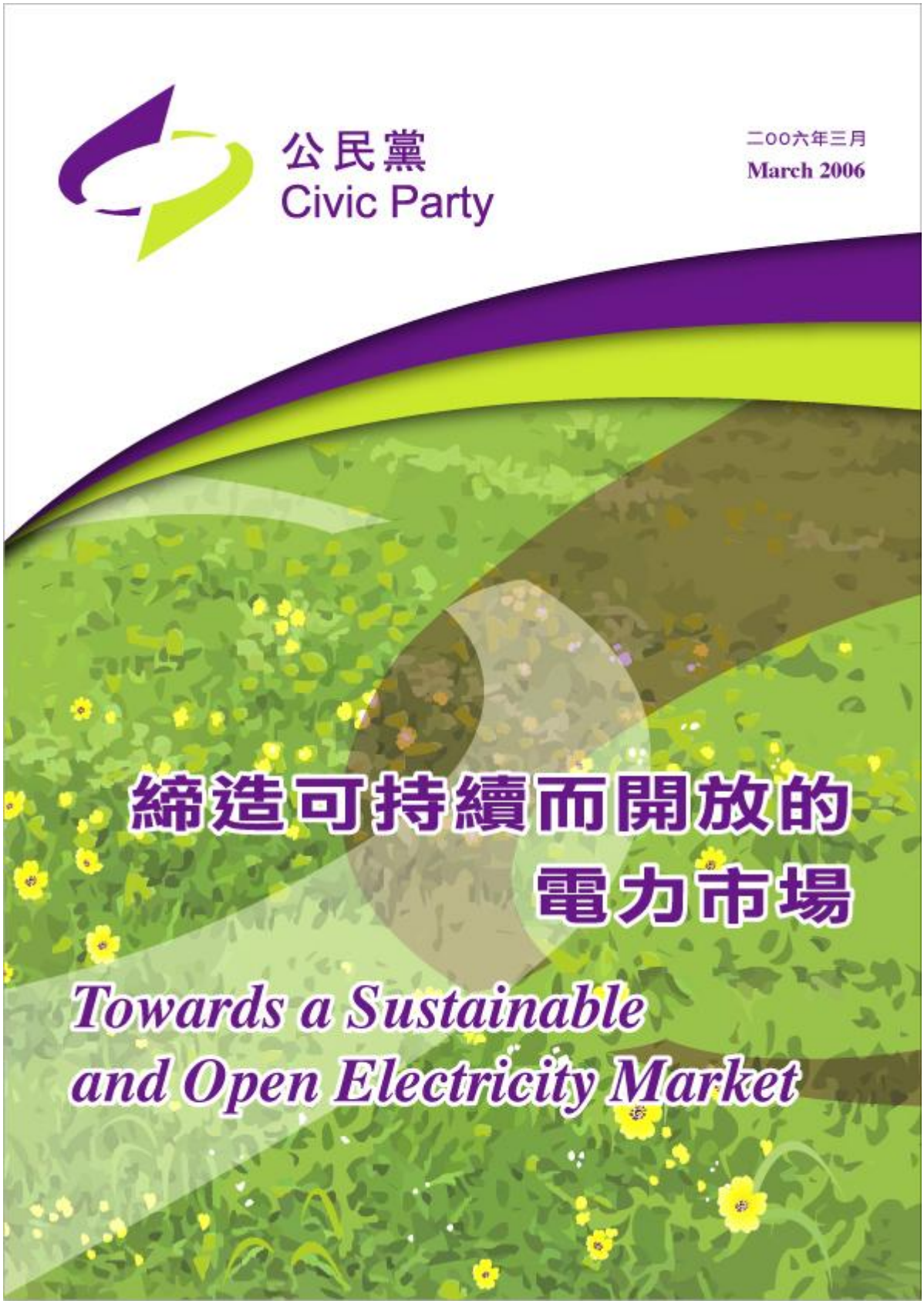
公民黨
Civic Party
二〇〇六年三月
March 2006
締造可持續而開放的
電力市場
Towards a Sustainable
and Open Electricity Market

Towards a Sustainable and Open Electricity Market

In response to the Stage II Consultation Paper on
Future Development of
the Electricity Market in Hong Kong

March 2006

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Summary of Proposals

Whilst we agree with the policy objective as stated in the Stage II Consultation Paper, we are of the view that the Recommendations as proposed therein do not go far enough to achieve such objectives.

We propose the following:

An independent energy authority

1. At present, electricity is put under the Economic Development & Labour Bureau (EDLB). We need an integrated approach taking into account environmental concerns as well as the need for an overall energy policy. Hence we propose an Independent Energy Authority (IEA) be set up as soon as possible with a view to the regulation of a competitive market.

2. Pending the set up of IEA, all capital investment proposals and financing plans by the power companies should be submitted to the Energy Advisory Committee for deliberation. Decisions should be made by EDLB on the recommendations of EAC, similar to the current arrangements adopted for EIA approvals by the Director of Environmental Protection and the Advisory Committee on Environment. The deliberation by EAC should be conducted in a transparent process, allowing the public to have access to relevant information and to make presentations at open hearing sessions.

Interconnection and Open Market

3. The administration should set a firm timetable for mandatory opening up of the power grid for access by third parties before the first 5-year interim review of the new agreement, on terms to be set by the IEA. In setting such terms, the IEA will have in mind the policy objectives of reliable, safe and efficient energy supply with a bias in favour of renewable energy.

4. Prior to the opening up of the grid, the power companies should be required to make full use of the current HEC-CLP Interconnector for cross-supply and to prepare for full interconnection between Hong Kong Island and Kowloon.

5. The power companies should be required to keep separate accounts for the generation, distribution and transmission of electricity. This is essential to enable future opening up of the grid for access by third parties. It is also necessary for a pricing strategy which will induce power companies to be more environmentally friendly.

Pricing strategy

6. The Consultation Paper continues to recommend the Average Net Fixed Assets (ANFA) as the base for determining return. However this encourages over-expansion and surplus capacity financed through high debt gearing. We recommend that from 2008 onwards, electricity tariffs should be regulated by a price-cap mechanism so that the tariffs should be adjusted largely in line with the change of inflation rate with future productivity gains shared between the public and the power companies.

7. However, the initial tariff used for the price cap should be reset in 2008 by reference to a reasonable return on equity for investors in the power companies. We propose to set the rate of return on ANFA at 7%, which is equivalent to over 13% rate of return on equity.[1] The current electricity tariff would then be reduced by 18% - 23%. We believe that a price cap set at this level can strike a reasonable balance between the interest of investors and the public.

Emission Reduction Strategy

8. The Consultation Paper recommends that the permitted rate of return be dependent on the achievement of the emission caps stipulated. Hence emission just above or below a stated level may mean a significant difference in the return. This may lead to constant disputes and uncertainties and is not in the public interest. A better alternative is to require the power companies to pay an emission surcharge based on the volume of emission. This will induce the power companies to reduce emission through cleaner fuel and/or more efficient operations.

Energy efficiency

9. Demand side management is the most effective means to conserve energy and

[1] Calculation based on the 2005 finanical statement of CLP.

reduce pollution. But the government has no real determination to do this. The Consultation Paper recommends that the power companies be given incentives to promote energy conservation when there is a conflict of interest in asking power companies to do so. The IEA should be tasked to promote energy efficiency, run demand side management programmes and set mandatory energy efficiency standards for building.

Renewable energy

10. As for renewable energy, we are disappointed with the very low 1 to 2 % target by 2012. At the very least, the administration should make clear that this does not include energy-from-waste.

11. The IEA should encourage new power demands to be met by renewable energy and set tariffs or access fee to grids with a bias in favour of renewable energy.

Cross-border collaboration

12. The administration and later the IEA should make preparation for enhanced interconnection with Guangdong to facilitate the introduction of any future competitive energy supply from the Mainland.

13. The administration and later the IEA should step up the development of renewable energy and set a regional RE target in collaboration with the Mainland.

Legislation

14. The administration should be ready to introduce the necessary legislative measures to facilitate the interconnection of grids, opening up of the market, the regulation of a fair and competitive market and enforce environmental friendly regulations, should it not be possible to arrive at a satisfactory mutual agreement with the power companies. This would set aside uncertainies and create a level-playing field for all suppliers on the market.

Introduction

1. The expiration of the Scheme of Control agreements (SOC) in 2008 provides an invaluable occasion to revamp the existing regulatory regime. This paper sets out our views on the proposal put forward by the government in the Stage II Consultation Paper.

2. The current SOC induces excessive capital expansion. Linking the permitted rate of return with fixed assets has resulted in high electricity tariff. We need to address these problems and install a new regulatory regime to prepare the ground for more competition whilst ensuring safe and efficient electricity supply.

3. There is also an environmental challenge. Electricity plants are the most significant air polluters in the territory. We need to deliver energy in more sustainable ways, i.e. switch to cleaner fuels and renewable energy, enhance energy efficiency, and retrofit facilities for emission reduction. Also, it is our international obligation to cut greenhouse gas emissions as much as possible and avoid devastating consequences caused by rising temperature. The new regulatory regime is crucial to the attainment of these goals.

An independent energy authority

4. At present, electricity is put under the Economic Development & Labour Bureau (EDLB), whilst environmental regulation is overseen by Environmental, Transport and Works Bureau (ETWB). We need an integrated approach taking into account all aspects of electricity supply, as well as the need for an overall energy policy, including electricity, oil and gas. As this entails quite a lot of expert work, we propose an Independent Energy Authority (IEA) be set up as soon as possible with a view to the transition and regulation of a competitive market.

5. Pending the set up of the IEA, all capital investment proposals and financing plans by the power companies should be submitted to the Energy Advisory Committee (EAC) for deliberation. Decisions should be made by EDLB on the recommendations of EAC, similar to the current arrangements adopted for EIA approvals by the Director of Environmental Protection and the Advisory Committee on Environment. The deliberation by EAC should be conducted in a

transparent process, allowing the public to have access to relevant information and to make presentations at open hearing sessions.

Interconnection and Open Market

6. There is a lack of competition in the electricity market. The electricity transmission facilities, which include the transmission grids and the substations, are privately owned by The Hongkong Electric Companies Ltd. (HEC) and CLP Power Hong Kong Ltd. (CLP). The impossibility of access to the transmission grids and substations effectively bar the entry of any third party competitors.

7. This segregation results in an electricity market with two monopolists and an implication on environment. HEC and CLP tend to overestimate energy demand and keep an exceedingly high level of backup capacity. If there is increased interconnection between the companies, the backup capacity – and the emissions that comes with it – can be substantially reduced without compromising service reliability.

8. There should be a firm timetable for mandatory opening up of the power grid for access by third parties, on terms to be set by the IEA. In setting such terms, the IEA will have in mind the policy objectives of reliable, safe and efficient energy supply with a bias in favour of renewable energy. To facilitate this long term objective, the power companies should be required to keep separate accounts for the generation, distribution and transmission of electricity.

9. Prior to the opening up of the grid, the power companies should be required to make full use of the current HEC-CLP Interconnector for cross-supply and to prepare for full interconnection between Hong Kong Island and Kowloon.[2]

10. The new Scheme of Control Agreements shall contain a clause under which both HEC and CLP have the contractual obligations to increase the capacity of the interconnector. Such upgrading can be done in phases in accordance with a pre-determined timetable, with the view to achieving full interconnection between Hong Kong Island and Kowloon.

[2] The transmission networks of CLP and HEC are interconnected by a cross-harbour cable. The interconnection has a capacity of 720 MW. A consultation study commissioned by HKSARG in October 1999 concludes that the enhancement of the existing interconnector is technically feasible. Environmental Resources Management , "Interconnection and Competition in the Hong Kong Electricity Supply Sector", Oct 1999. (available on http://ww.edlb.gov.hk/edb/chi/papers/studies/ex_summary_c.doc)

Pricing strategy

11. The current infrastructure of CLP and HEC are essentially stranded assets. The investment and fuel contracts of the electricity industry are also long term, hence the need for a clear and stable policy.

12. The Consultation Paper continues to recommend the Average Net Fixed Assets (ANFA) as the base for determining return. However this encourages over-expansion and surplus capacity financed through high debt gearing, and as a result, allows the power companies to earn a return on equity of 20-30%.

13. We recommend that from 2008 onwards, electricity tariffs should be regulated by a price-cap mechanism so that the tariffs should be adjusted largely in line with the change of inflation rate with future productivity gains shared between the public and the power companies. However, the initial tariff used for the price cap should be reset in 2008 by reference to a reasonable return on equity for investors in the power companies. We propose to set the rate of return on ANFA at 7%, which is equivalent to over 13% rate of return on equity.[3] The current electricity tariff would then be reduced by 18% - 23%. We believe that a price cap set at this level can strike a reasonable balance between the interests of investors and the public.

14. This approach provides a win-win position to the power companies and consumers. The power companies can retain any profits derived from keeping the price not exceeding the price ceiling by improving its production efficiency while consumers will share the benefits of additional productivity gains.

15. Due to changes in technology and the financial markets, in line with international practice the price cap formula should be reviewed every five years. In addition to factors arising from the external environment, the review should take into account of the performance of the power companies during the review period, including its customer service standards, safety and security records, as well as levels of environmental emission compliance. The formula for the next five years should reward companies with good performance records, and penalize those which perform poorly.

[3] Calculation based on the 2005 finanical statement of CLP.

Emission Reduction Strategy

16. Power generation is the predominant local source of emissions. In 2004, local power plants are accountable for over 90% of the total emissions of SO2, and around 50% of NOx and RSP.

17. The present regulatory regime has been ineffective as a gate-keeper of emissions. The refusal by the two power companies to enter into shared supply arrangement through full interconnection has resulted in artificially high reserve capacities in both companies. "Surplus" powers were sold to the Mainland - and more coal-fired units were put into operation for that purpose. Also, the power companies have been slow in carrying out retrofit programmes to reduce emissions.[4]

18. The Consultation Paper recommends that the permitted rate of return be dependent on the achievement of the emission caps stipulated. This mechanism, if put in place, may appear to be a significant step towards internalizing the environmental cost in the production of energy. Yet in practice, emissions just above or below a stated level may mean a significant difference in the return. This may lead to constant disputes and uncertainties and is not in the public interest.

19. A better option is to require the power companies to pay an emission surcharge based on the volume of emissions. This will induce the power companies to reduce emissions through cleaner fuel and/or more efficient operations. The Ho-Ping coal-fired power station in Taiwan, of which the CLP holds a 40% equity interest, is required to pay such a surcharge.[5] Not only will this benefit the environment, but this will provide the companies with a potential for further gains if it can adopt more environmentally friendly operations. In a sense, the ball is put straightly back into the power companies' court.

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[4] In Guangdong, all generation units of capacity above 125 MV will be retrofitted with flue gas desulphurization systems by 2007. This stands in marked contrast to the HEC and CLP, of which the retrofit proposals would not complete until 2010 and 2011 respectively, according to their latest financial plan. "Government's Environmental Policy for the Power Sector" (available on www.epd.gov.hk), p.3.

[5] The Ho-Ping power station was in operation since 2002. Its generating capacity is 1,320 MW, or 16% the scale of CLP power plants in Hong Kong. With more stringent environmental regulations to meet, the SO2 emission of the Ho-Ping was 3.1 kT in 2004, just 5.8% of its Hong Kong counterpart. *CLP Social and Environmental Report 2004*, pp. 44 and 47.

Energy efficiency and conservation

20. Improving energy efficiency is an adept way to reduce the need for new infrastructure and promote consumer welfare. Nevertheless, the consultation paper does not specify any institutional arrangements to facilitate energy efficiency and conservation.

21. Though DSM is the most effective means to conserve energy and reduce pollution, past efforts were fragmentary and limited.[6] The government has no real determination to do this. Neither did the power companies, as permitted returns are based on fixed assets. The more they sell, the more they earn. In other words, there is a conflict of interest in asking power companies to promote energy efficiency.

22. The IEA should be tasked to oversee DSM programmes, advocate energy audit in the business sector, and put forward legislation on energy efficiency, such as mandatory energy efficiency standards for buildings.

Renewable energy

23. As for renewable energy, the government proposes to provide financial incentives to power companies and ask them to waive access fee for RE systems, with the view to meeting the 1% - 2 % target by 2012. We are disappointed with this very low target. It is perfectly feasible to meet 1% - 2% of local demand solely by wind power.[7] Even the Mainland as a developing economy is committed to a 5% target by 2010. At the very least, the administration should make clear that this does not include energy-from-waste.

24. The consultation paper does not specify what the financial incentives are, and it is not known if the target will be met. In any case, the target should be backed up by effective policy instruments. A better alternative is to require all suppliers on the market to include a certain percentage of RE in their local or regional portfolio, i.e. making it an obligation to provide renewable energy.

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[6] The power companies have introduced a small scale DSM programme in 2000. The EMSD launched a voluntary energy efficiency registration scheme for buildings, with only 1162 registration certificates issued for the period 1998 to 2005.

[7] Approximately, installing 57 sets of 3.2 MW wind turbines would be able to meet 1% of local electricity demand.

25. In addition, the IEA should encourage new power demands to be met by renewable energy. Grid access should be mandatory provided that certain technical and safety standards are compiled with. Access fee to grids for RE should be waived.

Cross-border collaboration

26. The Hong Kong and Guangdong Provincial Governments pledged to reduce emissions of sulphur dioxide, nitrogen oxide, respirable suspended particulates and volatile organic compounds by 40%, 20%, 55% and 55% respectively by 2010, on a best endeavour basis. Hong Kong has made reasonable progress since then. The emission levels of NOx, RSP and VOC are well on target, but the emissions of SO2 have gone up 47% over the same period.[8]

27. Unfortunately, data of the similar sort on the Pearl River Delta Region are yet to be released. So it is not known how the Guangdong province is catching up with the 2010 target. Some recent data indicate that the regional air pollution is worsening, "the concentration of RSP recorded at the general air monitoring stations increased by 15% from 1999 to 2004 due to the increase in regional pollution background. Ozone, the indicator pollutant for regional smog, increased by 26% during the same period."[9]

28. As there will be enhanced grid connection between Hong Kong and South China, the government and later the IEA should review the RE potential in a regional perspective, and set a regional RE target beyond 2012 in collaboration with the Mainland.

29. In preparation of a comprehensive emissions trading scheme within the region, the two governments should consider setting a regional emission cap. They should also put in concerted efforts for the development of renewable energy and set an incremental regional RE target, so as to foster a more sustainable model of energy production and consumption.

30. A fair and competitive electricity market within the Pearl River Delta region would require that different technical and environmental regulatory standards (to

[8] "Government's Environmental Policy for the Power Sector" (Working paper of the Environmental Protection Department, available on www.epd.gov.hk), p.2.
[9] "Improving the Air Quality of Hong Kong - A Progress Report November 2005", (Working paper of the Environmental Protection Department, available on www.epd.gov.hk), p.2.

name just a few) are brought in line with each other. The government should liaise with the Mainland in view of this long term development.

Legislation

31. The administration should be ready to introduce the necessary legislative measures to facilitate the interconnection of grids, opening up of the market, the regulation of a fair and competitive market and enforce environmental friendly regulations, should it not be possible to arrive at a satisfactory mutual agreement with the power companies. This would set aside uncertainies and create a level-playing field for all suppliers on the market.

Conclusion

32. As a rule, no monopolist will voluntarily give up its hold on its market share. So it is the job of the government as a regulator to create a sustainable and open electricity market by transforming the existing SOC. We look forward to working with the Government, the power companies and the civil society in devising a fair regulatory framework for the post-2008 electricity market.

Appendix Membership List of the Electricity Market Working Group

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