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Panel on Economic Development
Meeting on 12 December 2017

Updated background brief on annual tariff reviews with the two power companies

Purpose

This paper sets out the background of the Government's annual tariff reviews with the two power companies, and summarizes the major views and concerns on the subject matter raised by Members in previous discussions.

Regulation of electricity supply in Hong Kong

2. Electricity supply in Hong Kong is regulated through the Scheme of Control Agreements ("SCAs") signed between the Government and individual power companies, namely, The Hongkong Electric Company, Limited ("HEC")[1] which supplies electricity to customers on Hong Kong Island, Ap Lei Chau and Lamma Island; and CLP Power Hong Kong Limited and Castle Peak Power Company Limited[2] (referred to collectively as "CLP" hereafter) which jointly supply electricity to customers in Kowloon and the New Territories including Lantau, Cheung Chau and some outlying islands.

3. The two SCAs set out the rights and obligations of the power companies and provide a framework for the Government to monitor the power companies' financial affairs and technical performance. The Government entered into the current SCAs with the power companies on 7 January 2008 for a term of 10 years.

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[1] HEC is a subsidiary of HK Electric Investments Limited.

[2] CLP Power Hong Kong Limited is a subsidiary of the CLP Holdings Limited. Castle Peak Power Company Limited is a joint venture between CLP Power Hong Kong Limited (70%) and China Southern Power Grid International (HK) Co., Limited (30%).

4. As the current SCAs signed between the Government and the two power companies will expire in 2018, the Government entered into the new SCAs with the two power companies on 25 April 2017. The Administration briefed members on the new SCAs at the joint meeting of the Panel on Economic Development ("the Panel") and the Panel on Environmental Affairs ("EA Panel") on 29 April 2017. Key changes of the new SCAs to the current ones include:

(a) duration of the new SCAs will be 15 years[3] till 31 December 2033, instead of a term of 10 years with an option to extend for five more years;

(b) the permitted rate of return ("RoR") will be lowered from the current 9.99% to 8% on the power companies' average net fixed assets; and

(c) a more frequent fuel clause charge ("FCC") adjustment mechanism will be introduced so that the fuel costs borne by the power companies will be reflected in the tariffs in a more timely manner.

5. A summary of the revised terms of the new SCAs is set out at **Appendix I**.

Tariff adjustment mechanism

6. Electricity tariff charged by the two power companies is made up of two components, namely the basic tariff and FCC, the total of which is the net tariff rate. While the basic tariff covers operating expenses, standard fuel charges and return to the power companies, FCC reflects the changing price of fuels and is borne by consumers and payable to the power companies on a cost-pass-through basis.

7. Under the current SCAs, the power companies have to submit development plans ("DPs"), which outline the capital projects to be implemented by the power companies and the projected basic tariff rates for each of the five years covered by DPs, for the approval of the Executive Council ("ExCo"). In the tariff review conducted in each of the following years concerned, no further approval from ExCo is required for the adjustment if the basic tariff rate proposed by the power companies for a year covered by the DP does not exceed

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[3] The new SCA with HEC will commence on 1 January 2019 such that the term of it will be 15 years. The new SCA with CLP will commence on 1 October 2018, meaning a term of 15 years and three months.

the projected basic tariff rate approved for that year by more than 5%. On the other hand, the power companies can make adjustments to their FCCs to reflect the cost of fuels consumed by them for electricity generation, and approval from ExCo is not required. The major elements of the approved 2014-2018 DPs of the power companies are listed in **Appendix II**.

8. With a view to implementing the 2020 Fuel Mix[4], approval has been given by ExCo for HEC and CLP on 13 September 2016 and 13 December 2016 respectively to each construct a new gas-fired generating unit. Details of the proposals are provided in the Legislative Council Briefs issued by the Environment Bureau on 23 September 2016 and 13 December 2016 (File Ref: ENB CR 2/4576/08 (16) Pt.18, and File Ref: ENB CR 1/4576/08 (16) Pt.19).

9. To ensure that tariff adjustment is reasonable, the Administration is responsible for playing a gate-keeping role to control cost relating to the basic tariff. To this end, the Administration should ensure that any necessary developments and service improvements of the power companies would proceed within the scope of the approved DPs. It should also vet the expenditure items, including capital investment, of the two companies to screen out items that are excessive, premature or unnecessary, under the tariff review mechanism every year.

10. Furthermore, the Administration would use the two power companies' Tariff Stabilization Fund ("TSF")[5] to mitigate pressure of tariff increase, and the Fuel Clause Recovery Accounts ("FCAs")[6] to tackle sharp fuel cost increase due to the expiry of existing fuel supply contracts or fluctuations in supply. It would also examine whether any special income of the two companies can be used to offset cost increase.

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[4] The Government announced in the public consultation on the Future Development of the Electricity Market in March 2015 that, as part of its measures to meet the pledged environmental targets for 2020 (i.e. to reduce the carbon intensity by 50-60% by 2020 compared to 2005; and to reduce the emissions of sulphur dioxide by 35%-75%, nitrogen oxides by 20%-30% and respirable suspended particulates by 15%-40% by 2020 compared to 2010), local electricity generation by natural gas should be increased to around 50% of the total fuel mix for electricity generation by all power companies in Hong Kong with effect from 2020.

[5] The purpose of TSF is to accumulate the excess of net revenues of the power companies over the permitted return, so as to provide funding, where necessary, to ameliorate the impacts of tariff increases on consumers. The current cap on TSF balance is 5% of the annual total revenues from local sales of electricity.

[6] FCA is an account maintained by the two power companies through which the differences between the standard fuel charges (included in the basic tariff) and actual fuel prices incurred are returned to or recovered from consumers by means of a rebate or a surcharge each year.

11. The following table shows the changes of the overall tariff charged by the two power companies in recent years –

		CLP (Cents/unit)				**HEC** (Cents/unit)			
		Basic tariff	**FCC**	**Rebates**	**Average net tariff**	**Basic tariff**	**FCC**	**Rebates**	**Average net tariff**
#	2009	77.4	11.8	0	**89.2**	94.5	25.4	0	**119.9**
#	2010	80.1	11.5	0	**91.6**	94.5	25.4	-0.1	**119.8**
#	2011	80.1	14.1	0	**94.2**	93.0	30.2	-0.1	**123.1**
#	2012	84.2	17.8	-3.3	**98.7**	93.9	37.0	0	**130.9**
#	2013	84.0	22.4	-1.7	**104.7**	94.4	40.2	0	**134.6**
#	2014	88.4	22.4	0	**110.8**	101.8	33.1	0	**134.9**
#	2015	87.2	27.0	0	**114.2**	102.6	32.3	0	**134.9**
*	2016	88.9	24.3	0	**113.2**	105.5	27.9	0	**133.4**
*	2017	92.2	21.0	0	**113.2**[Note]	108.9	23.4	-21.9	**110.4**

Sources: # Administration's paper (LC Paper No. CB(4)727/14-15(01)).
* HEC and CLP's papers (LC Paper Nos. CB(4)253/16-17(10) and (11)).

Note: From January 2017, all CLP customers will receive a special fuel rebate of 2.3 cents per unit based on their electricity consumption between January and December 2016.

Views previously expressed by the Panel

12. Electricity tariff has all along been a matter of contention, and members of the Panel have expressed views and concerns over a range of issues at previous meetings, including –

(a) the need of raising tariff despite substantial profits from the two power companies;

(b) higher rate of tariff charged by HEC as compared to CLP;

(c) enhancing the monitoring of the power companies' investment on generation facilities and treatment of excessive generating capacity;

(d) enhancing the transparency of the processes for the formulation of tariff adjustments and DPs of the two power companies so as to facilitate public monitoring;

(e) reviewing the FCC adjustment mechanism so that tariffs could be adjusted in a timely manner in response to the change in fuel cost;

(f) using TSF reserve to offset the fuel cost increase, or opting not to achieve the maximum permitted RoR;

(g) implementing increased interconnection between the networks of the two power companies to minimize investment on new generating units;

(h) separating power generation and transmission to facilitate market entry and competition;

(i) introducing electricity suppliers to enhance market competition with a view to lowering the tariff;

(j) sourcing cheaper gas supplies or importing less costly alternative fuels such as nuclear energy, liquefied natural gas or shale gas to reduce the pressure on tariff increase;

(k) striking a balance between commitment to environmental protection and cost control on power generation;

(l) stepping up the promotion of energy saving initiatives and adopting various measures to reduce electricity consumption; and

(m) encouraging the development of distributed renewable energy ("RE") power generation facilities and networks, and providing technical support and concessions for connection to electricity grids.

Latest discussions

13. At the Panel meeting held on 13 December 2016, members received a briefing on tariff adjustments of the two power companies for 2017. The Panel noted that for 2017, HEC would reduce its net tariff by 23 cents (or 17.2%) per unit after counting a special rent and rates rebate and a special fuel rebate. CLP would maintain its net tariff at 113.2 cents per unit as in 2016 with a one-off special fuel rebate of 2.3 cents per unit provided to all its customers. At the joint meeting of the Panel and the EA Panel on 29 April 2017 when members discussed the new SCAs, matters relating to electricity tariff were also touched upon. Major views and concerns expressed at the meetings are elaborated in the ensuing paragraphs.

14. Members in general welcomed the rebates of surpluses from the two power companies' FCAs. However, members expressed concern about the

increase in the basic tariffs of both companies, and were worried that the net tariff, which was made up of basic tariff and FCC, would be increased if such special rebates were no longer available in future. Some members commented that the two power companies had always overestimated the fuel prices and the current provision of rebates was indeed returning the overcharged money to customers. They urged the Administration to monitor the FCAs of the power companies and formulate a mechanism for monitoring the rebates of overcharged fuel cost, such as imposing a cap on the FCA balance.

15. The Administration pointed out that the special rebates of the two power companies were ad hoc in nature. The outcome of the 2017 tariff review should not be taken as a long-term or sustained reduction in tariff, but a reduction in the FCC and some ad hoc rebates. If there were no special rebates in 2018 and subsequent years, the tariff would return to the normal higher levels, and that should not be viewed as tariff increase.

16. Members noted the Government's estimation that the reduction of the permitted RoR to 8% would result in a tariff decline of above 5% from the commencement of the new SCA term if all other relevant factors (including fuel costs) remained unchanged, and enquired if such tariff reduction would actually take place. The Administration explained that electricity tariff was made up of the basic tariff and FCC. Since fuel prices could fluctuate significantly, it was not possible to guarantee that future tariffs would fall in the next SCA period. The estimated tariff decline of above 5% was worked out on the assumption that all other relevant factors remained unchanged.

17. Some members were concerned that the increasing use of the more expensive yet cleaner natural gas for power generation would exert heavy pressure on tariffs in the next SCA period. Future tariff rates might also go up when international fuel prices began to pick up. They urged the power companies to consider using more nuclear power so as to maintain an affordable and stable tariff while protecting the environment. However, opposing views were also expressed owing to safety concerns.

18. The Panel also expressed concern about the situation that some landlords of sub-divided units ("SDU") of flats were overcharging their tenants on the use of electricity as the latter did not have individual electricity meters. In this respect, a motion urging the Administration to adopt appropriate measures to help SDU households was passed by the Panel. The Administration's response is set out in LC Paper No. CB(4)576/16-17(01).

Council questions

19. At the Council meetings on 7 December 2016, 11 January, 22 March, 12 July and 25 October 2017, Members raised a number of questions relating to electricity tariffs covering, among others, provision of electricity charges subsidy, electricity charges for tenants of SDU, and installations for distributed RE power generation. Hyperlinks to the relevant written replies from the Administration are provided in **Appendix III**.

Latest developments

20. The Administration and the two power companies will brief the Panel on the tariff reviews for 2018 at the meeting on 12 December 2017.

References

21. A list of the relevant papers which are available on the Legislative Council Website (http://www.legco.gov.hk) is at **Appendix III.**

Council Business Division 4
Legislative Council Secretariat
8 December 2017

Appendix I

Summary of the Changes to the Current Scheme of Control Agreements

(1) Duration

– About 15-year term: 1 October 2018 to 31 December 2033 for CLP; 1 January 2019 to 31 December 2033 for HEC

– To discuss with CLP and HEC of potential future changes to the electricity supply regulatory framework before January 2031

– Interim reviews every five years to consider any modifications to the new Scheme of Control Agreements (SCAs) with any changes to be mutually agreed

(2) Permitted Rate of Return (RoR)

– 8% on Average Net Fixed Assets (ANFA) with effect from 1 October 2018 and 1 January 2019 for CLP and HEC respectively

– Same RoR for renewables and non-renewables assets

(3) Promotion of Energy Efficiency and Conservation (EE&C)

– Incentives of up to 0.04% of RoR will be offered, on a pro-rata basis, for conducting 600 (or more) or 200 (or more) energy audits in a year for CLP and HEC respectively

– Incentives of up to 0.1% of RoR will be offered, on a pro-rata basis, for achieving energy saving of 48 GWh (or more) or 12 GWh (or more) in a year for CLP and HEC respectively through measures implemented pursuant to energy audits conducted by the power companies or third-party registered energy assessors where the relevant projects are directly facilitated by the power companies

– A New Eco-Building Fund / New Smart Power Fund will be set up by CLP and HEC respectively to support the carrying out of retrofitting or retro-commissioning, and implementation of

building-based smart/IT technologies, or other improvement measures to be agreed with the Government. Under these funds –

- Incentives of up to 0.02% of RoR will be offered, on a pro-rata basis, for having 400 (or more) or 100 (or more) buildings with confirmed projects which have commenced in a year for CLP and HEC respectively; and

- Incentives of up to 0.1% of RoR will be offered, on a pro-rata basis, achieving energy saving of 48 GWh (or more) or 12 GWh (or more) in a year for CLP and HEC respectively through the above projects

– 65% of the incentives earned from achieving the targets in relation to energy audits, energy saving from audits and the New Eco Building Fund / New Smart Power Fund will be ploughed back by the power companies for the benefit of consumers for deployment under the new Community Energy Saving Fund (CESF) to be established by the power companies respectively. The CESF will be used to promote EE&C, such as encouraging and supporting customers (including disadvantaged customers) to replace or upgrade their electrical appliances to more energy-efficient models, as well as supporting other programmes such as green building initiatives, those to support the use of RE as well as those to support disadvantaged groups. Allocation of funds for the various programmes under the CESF is to be agreed between the Government and the power companies

– Incentives will be offered for meeting a 5-year target in respect of the energy saving achieved through the total energy saving achieved during the 5-year period on a continuing benefit basis through energy saving from audits, the New Eco Building Fund / New Smart Power Fund and the CESF –

- Incentives of 0.06% of RoR will be offered if the energy saving achieved is less than 5% but greater than or equal to 4% of the average volume of annual local electricity sales (in GWh) of the power company concerned in that 5-year period; or

- Incentives of 0.1% of RoR will be offered if the energy saving achieved is greater than or equal to 5% of the average volume of annual local electricity sales (in GWh) of the power company concerned in that 5-year period

– Loan fund of $25 million and $12.5 million per annum for CLP and HEC respectively to provide loans to their non-government customers to implement initiatives to promote EE&C

– Education fund of $10 million and $5 million per annum for CLP and HEC respectively for promotion activities in relation to EE&C

– The procedures for administering the above funds shall be subject to agreement between the Government and the power companies

– Incentives will be offered for achieving reductions in maximum demand as a result of the power companies' respective demand response programmes based on the following scale –

Adjustment of RoR	**Reduction Achieved**	
	CLP	**HEC**
0.025%	≥ 60 MW	≥ 30 MW
0.02%	≥ 50 MW but < 60 MW	≥ 25 MW but < 30 MW
0.015%	≥ 40 MW but < 50 MW	≥ 20 MW but < 25 MW
0.01%	≥ 30 MW but < 40 MW	≥ 15 MW but < 20 MW
0.005%	≥ 20 MW but < 30 MW	≥ 10 MW but < 15 MW

(4) Promotion of Renewable Energy (RE)

– Grid connection arrangements for distributed RE systems will be improved

– Measures to promote the development of RE, such as Feed-in Tariff and RE certificate schemes will be introduced

– Incentives will be offered for achieving targets on the volume of electricity generated by RE systems in the power companies' respective service area (excluding RE generated by RE systems directly owned by the Government) as a percentage of total volume of electricity generated by the respective power company in Hong Kong based on the following scale –

Adjustment of RoR	RE Generated in Service Area	
	CLP	HEC
0.05%	≥ 5%	≥ 5%
0.025%	≥ 2% but < 5%	≥ 2% but < 5%
0.02%	≥ 0.75% but < 2%	≥ 0.75% but < 2%
0.015%	≥ 0.5% but < 0.75%	≥ 0.05% but < 0.75%
0.01%	≥ 0.25% but < 0.5%	≥ 0.025% but < 0.05%

– Incentives will be offered for making new connections of RE systems to power companies' respective power grids as follows –

- Incentives of 0.00125% of RoR will be offered for making 60 to 119 new connections or 20 to 39 new connections in a year for CLP and HEC respectively; or

- Incentives of 0.0025% of RoR will be offered for at least 120 or 40 new connections in a year for CLP and HEC respectively; and

- An additional incentives of 0.0025% of RoR will be offered if at least 120 or 40 new connections generate RE regularly for CLP and HEC respectively in a year; and

- Additional incentives of 0.01% of RoR will be offered for each 5-year period if more than 750 or 250 new connections generate RE regularly for CLP and HEC respectively in the 5-year period.

– Incentives equivalent to 10% of the sales revenue from RE certificates will be offered to the power companies

(5) Incentive/Penalty Schemes in relation to Operational Performance

– The incentive/penalty levels and thresholds in relation to supply reliability are as follows –

Adjustment of RoR	Average Service Availability Index (ASAI) Target
+0.015%	ASAI ≥ 99.9960%
+0.01%	99.9960% > ASAI ≥ 99.9950%
0%	99.9950% > ASAI > 99.9930%
-0.01%	99.9930% ≥ ASAI > 99.9920%
-0.015%	ASAI ≤ 99.9920%

– The incentive/penalty levels and thresholds in relation to operational efficiency, measured in Connection and Supply Performance Index (CSPI), are as follows –

- Incentive of 0.01% of RoR for CSPI at 100%
- Penalty of 0.01% for CSPI ≤ 99.98%

– The incentive/penalty levels and thresholds in relation to customer services are as follows –

Adjustment of RoR	Appointment Punctuality Index (API) Target
+0.01%	API ≥ 99.8%
+0.005%	99.8% > API ≥ 99.7%
0%	99.7% > API > 98%
-0.005%	98% ≥ API > 97.9%
-0.01%	API ≤ 97.9%

– The incentive/penalty levels and thresholds in relation to grid supply restoration are as follows –

Adjustment of RoR	Average Grid Supply Restoration Time (Average GSRT) Target
+0.015%	Average GSRT ≤ 65 minutes
+0.01%	65 minutes < Average GSRT ≤ 70 minutes
0%	70 minutes < Average GSRT ≤ 80 minutes
-0.01%	80 minutes < Average GSRT ≤ 85 minutes
-0.015%	Average GSRT > 85 minutes

(6) Fuel Costs

– A more frequent Fuel Clause Charge adjustment mechanism will be introduced such that actual fuel costs borne by power companies will be reflected in tariffs in a more timely manner

(7) Market Development

– Power companies are required to co-operate with the Government in (a) a study of potential access to the electricity grid by third parties; and (b) a study to consider the detailed arrangements for strengthening the interconnection between the Mainland and Hong Kong, as well as that between the existing grids in Hong Kong

- Power companies are required to publish segregated cost data pertaining to their generation and non-generation systems

(8) Mechanism for Treatment of Excess Generating Capacity

- Deduction from ANFA for excess capacity will be increased from 50% to 100% of the net asset value of the mechanical and electrical equipment

(9) Emission Performance Linkage Mechanism (EPLM)

- Removal of the EPLM, whereby incentives are offered or penalties imposed on the power companies in respect of their performance in emission reduction, for the new SCA with HEC (EPLM in the current SCA with CLP was removed as a result of the Mid-term Review in 2013)

(10) Cap on Interest on Long-term Borrowings

- Cap on interest deduction from the permitted RoR on long-term borrowings (i.e. borrowings arranged for financing of fixed assets as well as customers' deposits) will be reduced to 7%

(11) Transparency

- Enhancement of transparency on the power companies' operational and financial information by releasing such information in a more structured manner through compilation of an electronic information booklet for public disclosure

Source: Annex to LC Paper No. CB(4)925/16-17(01)

Appendix II

The 2014-2018 development plans of the power companies

On 10 December 2013, the Government approved the 2014-2018 development plans of The Hongkong Electric Company Ltd. ("HEC") and CLP Power Hong Kong Ltd. and Castle Peak Power Company Ltd. ("CLP") with the features below:

(a) HEC's Development Plan (effective from 1 January 2014 to 31 December 2018 ("HEC DP Period")) –

(i) capital projects for a total estimated capital expenditure ("CAPEX") of $13 billion which would be incurred during the HEC DP Period. This CAPEX includes $3 billion, approved on a provisional basis, for construction of a new gas-fired power plant unit ("L10");

(ii) the average basic tariff rate would increase by 7.1 cents/kWh, or 7.5% to 101.8 cents/kWh with effect from 1 January 2014;

(iii) the projected levels of basic tariff rate for the HEC DP Period would increase on average by 1.1% per annum if the Government had issued the confirmation to HEC for it to commence the proposed L10 project, or by 0.9% without such confirmation;

(b) CLP's Development Plan (effective from 1 January 2014 to 30 September 2018 ("CLP DP Period")) –

(i) capital projects for a total estimated CAPEX of $34.1 billion would be incurred during the CLP DP Period;

(ii) the average basic tariff rate would increase by 4.2 cents/kWh or 5.0%, to 88.4 cents/kWh with effect from 1 January 2014; and

(iii) the projected levels of basic tariff rate for the CLP DP Period would increase on average by 1.8% per annum.

Source: Legislative Council Brief, File Ref: ENB CR 1/4576/08 (13) Pt.14 ENB CR 2/4576/08 (13) Pt.10

Appendix III

List of relevant papers

Issued by	Meeting date/ Issue date	Paper
Panel on Economic Development ("the Panel")	13 December 2016 (Item V)	Supplementary information provided by HEC Supplementary information provided by CLP Background brief Minutes
	23 January 2017 (Items I & VI)	Minutes Administration's response to the motion passed
Joint meeting of the Panel and the Panel on Environmental Affairs	29 April 2017 (Item II)	Administration's paper Background brief Minutes
Council Meeting	7 December 2016	Council question on "Tenants of sub-divisions of flat units being overcharged for use of electricity" raised by Hon LUK Chung-hung
	11 January 2017	Council question on "Water and electricity charges of tenants in inadequate housing" raised by Dr Hon LAU Siu-lai
	22 March 2017	Council question on "Electricity charges for tenants of sub-divided units of flats" raised by Hon LEUNG Yiu-chung
	12 July 2017	Council question on "Feed-in tariff scheme for renewable energy power generation installations" raised by Hon Kenneth LEUNG

Issued by	Meeting date/ Issue date	Paper
	25 October 2017	Council question on "Installation of renewable energy power generation facilities on rooftops of village houses" raised by Hon Kenneth LAU
Environment Bureau	10 December 2013	Legislative Council Brief on 2014-18 Development Plan and 2014 tariff review of the two power companies
	23 September 2016	Legislative Council Brief on proposal of constructing a new gas-fired generating unit by the Hongkong Electric Company, Limited to implement the 2020 Fuel Mix
	13 December 2016	Legislative Council Brief on proposal of constructing a new gas-fired generating unit by CLP Power Hong Kong Limited and Castle Peak Power Company Limited to implement the 2020 Fuel Mix