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# Legislative Council
# Panel on Environmental Affairs

## Implementation Details concerning Renewable Energy, Energy Efficiency & Conservation and Fuel Clause Charge Adjustment Mechanism under the Post-2018 Scheme of Control Agreements

The Government and the two power companies entered into the post-2018 Scheme of Control Agreements (SCAs) in April 2017. The post-2018 SCAs will take effect in October 2018 for CLP Power Hong Kong Limited (CLP) and January 2019 for The Hongkong Electric Co., Limited (HKE) for a term lasting until end 2033. After the signing of the SCAs, we have been discussing with the two power companies the implementation details of new initiatives, including the various programmes to further promote energy efficiency and conservation (EE&C), renewable energy (RE) and more frequent Fuel Clause Charge (FCC) adjustment mechanism. This paper sets out the arrangements for implementing these programmes.

## Promotion of EE&C

Background

2. In connection with the end of the tenure of the current SCAs, the Government conducted a public consultation on the future development of the electricity market and its regulatory framework in 2015. There was a clear public consensus that the power companies should play a bigger role in helping promote EE&C. Many respondents suggested that a specific energy saving target should be set for the power companies while some suggested pegging part of the Rate of Return allowed for the power companies with their performance in promoting energy saving.

3. The Government has given due regard to these views in drawing up the post-2018 SCAs. In addition, the Government has taken into account our environmental targets, namely our commitment to reducing energy intensity by 40% by 2025 as compared to 2005 as set out in our Energy Saving Plan for Hong Kong's Built Environment 2015~2025+ as well as our pledge to reduce Hong Kong's carbon intensity by 65% - 70% by 2030 as compared with the 2005 level as set out in the Hong Kong's Climate Action Plan 2030+. To meet these targets, concerted efforts by the community as a whole would be required and the power companies have a particularly important role to play as electricity generation accounts for about two-thirds of Hong Kong's carbon emission. Against this backdrop, the incentive schemes in relation to promotion of EE&C under the current SCAs will be expanded while new elements will be introduced under the post-2018 SCAs such that the power companies will be further encouraged to support the community to pursue EE&C.

Programme Details

4. The EE&C-related programmes are drawn up with a view to achieving energy saving while offering support to groups which may require financial assistance in implementing energy saving measures. These are intended to bring about benefits to the community as a whole through reduction in energy consumption which will in turn help achieve our environmental targets as well as provision of assistance to those who need it. Similar to the existing Eco-Building Fund (EBF) of CLP and Smart Power Fund (SPF) of HKE, the programme details for each power company are developed having regard to their individual circumstances so as to best achieve the above mentioned objectives. While the programme details of the two power companies are not entirely the same, in general, the priority of funding allocation of both companies will be given to residential and small and medium enterprise (SME) business customers, non-Government organisations (NGOs) as well as disadvantaged groups. The effectiveness of the programmes will be reviewed after the first year such that the implementation details (e.g. the allocation of funding, subsidy to be offered, etc.) can be adjusted in the light of actual operating experience and as appropriate.

5. The main implementation details of the EE&C programmes proposed by the two power companies are set out in the ensuing paragraphs –

(a) Energy Audits

6. The maximum number of energy audits conducted by power companies which are required to earn incentive will be increased by four-fold, i.e. from 150 to 600 for CLP and from 50 to 200 for HKE. Power companies may include energy audits as well as retro-commissioning in order to identify opportunities for energy saving in non-domestic premises, including those of non-Government schools and NGOs.

(b) Funding to support EE&C work

7. The scope of the EBF of CLP and SPF of HKE will be expanded to support the carrying out of retrofitting and retro-commissioning, and implementation of building-based smart/IT technologies, or other improvement measures to be agreed with the Government. The coverage of the new EBF (NEBF) of CLP and new SPF (NSPF) of HKE will also be expanded from non-commercial buildings to cover both commercial/industrial and non-commercial buildings, bearing in mind commercial/industrial buildings are major users of electricity and hence good candidates for EE&C programmes. To cater for this expansion, the size of NEBF and NSPF will be increased from around $20 million to $100 million and from $5 million to $25 million respectively plus the roll-over amount of previous years, if any. Key parameters in operation of the NEBF and NSPF include –

(i) Only communal areas of commercial and industrial as well as residential buildings will be covered;

(ii) While buildings directly owned and operated by the Government will be excluded, other premises which may have received public funding, such as those of universities, schools and other NGOs will be included;

(iii) Residential and SME business customers (for CLP), and residential buildings (for HKE) will be allocated the majority of the funding while large business customers (for CLP) and other buildings (for HKE) may also receive subsidy for implementing

energy saving measures albeit with a relatively smaller funding allocation;

(iv) Subsidy to be offered will be linked to customer type (CLP will offer a higher rate to residential and SME customers while HKE will offer a higher rate to buildings of smaller scale and NGOs). Subsidy for retrofitting projects will be offered at a rate of up to 50% subject to subsidy caps applicable to the project concerned; and

(v) Both power companies will set up their respective Vetting Committee to approve most, if not all, applications. The Vetting Committee will comprise representatives from the engineering/building profession, academia, District Councils, green groups, etc.

(c) Education Funds

8. The purpose of the Funds is to promote EE&C in the community. The Education Funds of CLP and HKE will be increased from $5 million to $10 million; and from $2.5 million to $5 million respectively.

(d) Energy Saving Loan Funds

9. Both power companies will continue to maintain Loan Funds ($25 million per annum for CLP and $12.5 million per annum for HKE) to provide loans to non-Government customers to implement initiatives to promote EE&C. The scope of the Loan Funds will be expanded to cover not only projects pursued based on energy audits conducted by the power companies but also projects under the NEBF of CLP and NSPF of HKE.

(e) Community Energy Saving Funds (CESFs)

10. Based on the number of energy audits conducted and energy saving achieved under the energy audit programme as well as the NEBF/NSPF, the two power companies may earn incentives, and will plough back 65% for deployment under their respective new CESFs. Having regard to the estimated funding available in the CESFs when they are implemented in 2019, it has been agreed that the two power companies will use their shareholders fund earned from incentives to take forward the following initiatives in that year –

(i) Funds to support needy and disadvantaged groups

Both CLP and HKE will introduce their respective programmes to assist disadvantaged groups. Funds will be given by both power companies to assist these groups, for example for tenants of subdivided units (SDU) to replace or purchase energy efficient electrical appliances. Subsidy may also be provided to SDU tenants for rewiring work for installation of separate electricity meters (subject to, inter alia, the consensus of the SDU tenants, agreement by their landlord and building owners' corporation and fulfilment of the relevant technical and safety requirements).

(ii) Additional programmes to be implemented by CLP

As CLP is expected to have more funding available in the CESF in 2019, it will introduce the following additional programmes –

(1) Encouraging residential customers to save energy while assisting disadvantaged groups

CLP will introduce a major new programme to encourage residential customers to achieve energy saving. Any residential customer may participate and earn rewards through achieving energy saving at specific times of the year and/or over a longer-term period. CLP will also offer assistance to the disadvantaged groups. The allocation of the funding to different groups under this programme will be based on the preference of the residential customers who successfully take part in this programme.

(2) Product Purchase Scheme

CLP will launch a Product Purchase Scheme to encourage and support its non-residential customers, with a focus on SME business customers, to replace or upgrade their electrical appliances to more energy-efficient models. Under the Product Purchase Scheme, business customers will be offered rebates to replace their electrical appliances with LED lamps and air-conditioners with Grade 1 energy

efficiency label or other high efficiency cooling equipment in their premises. The rates of rebate to be offered will in general be based on a proportion of the price differential between the eligible product and the less energy efficient alternative. For larger installations of cooling equipment, it will be based on an assessment of the expected energy saving.

(3) Fund to support Green Building

CLP will also use some of the CESF to assist a number of schools and NGOs with the costs of applying for BEAM Plus EB certification for the purpose of promoting green building.

**Programmes to Promote the Development of RE**

Background

11. During the public consultation on the future development of the electricity market, public attitude towards the development of RE was positive. There was general support for the further development of RE, despite its higher tariff implications.

12. In the post-2018 SCAs, Feed-in Tariff (FiT) and RE Certificates are two important new initiatives to be introduced to help encourage the private sector to consider investing in RE as the power generated could be sold to the power companies at a rate higher than the normal electricity tariff rate to help recover the costs of investment in the RE systems and generation. At the same time, RE Certificates will be sold by the power companies for units of electricity from RE sources. Through these RE Certificates, the community can show its support for RE. The revenue from the RE Certificates will also help alleviate the overall tariff impact on all consumers brought about by the introduction of the FiT scheme. Apart from the FiT and RE Certificates schemes, the power companies will facilitate grid connection and improve the relevant arrangements. Details of the proposed implementation arrangements are set out below.

Programme Details

(a) FiT

13. The key principles of the FiT Scheme are proposed as follows –

(i) Taking into consideration the RE potential in Hong Kong, FiT will be offered to solar photovoltaic (PV) systems as well as wind systems;

(ii) Any non-governmental bodies or individuals, who as customers of the relevant power company plan to install distributed RE systems at their premises in the respective power company's supply area with a generating capacity of up to 1 MW are eligible for prescribed FiT rates from that power company as long as they have been connected to the latter's grid. RE systems with a capacity exceeding 1 MW will be considered on a case-by-case basis. If equipped with any form of energy storage provisions, FiT will only be payable based on the units of electricity actually generated by the distributed RE systems and regardless of whether the RE generated is actually exported to the grid;

(iii) Distributed RE projects built prior to the commencement of the FiT scheme may also participate and receive FiT;

(iv) Gross FiT will be adopted whereby FiT will be paid for all units of electricity generated by the RE systems in order to provide sufficient incentives to potential RE developers. Any units of electricity used at the premises will be charged at the prevailing tariff rates;

(v) FiT will be offered throughout the project life of the RE systems until end 2033. The electricity generated by the RE systems after 2033 will belong to the RE system owner;

(vi) We have engaged an independent consultant to study the appropriate FiT rates for RE systems of different generation capacities with a view to enabling RE system owners to recover the cost of the RE system as well as installation, operation and maintenance costs in around 10 years. Having considered the study outcome and discussed with the power companies, the FiT rates to be adopted at the launch of the FiT Scheme are set at –

(a) $5 for ≤10kW[1];
(b) $4 for >10kW to ≤200kW[1]; and
(c) $3 for >200kW to ≤1MW[1].

Nevertheless, whether a 10-year payback may be achieved would depend on, inter alia, the actual installation costs, size of the systems, actual output, etc.;

(vii) The same FiT rate, as applied to the RE system upon joining the FiT scheme, will be adopted for the entire lifetime of a given project or until end 2033, whichever is earlier. Those who install the system early may be able to make a return after the aforementioned payback period; and

(viii) The FiT rates will be reviewed annually and applied to the corresponding RE systems that join the FiT scheme within the prescribed period from the announcement of the revised rates until new FiT rates, if any, are separately published.

(b) RE Certificates

14. The main features of the RE Certificates are as follows –

(i) The RE Certificates will represent units of electricity from local RE sources (whether such electricity is generated or purchased by the power companies), with the demand for RE Certificates matching the supply of RE within a prescribed period so as to allow the power companies to have some operational flexibility;

(ii) The RE Certificates will be priced having regard to market appetite and will be reviewed annually; and

(iii) RE Certificates will be available for sale by each power company to its respective customers within its supply area.

[1] Solar PV systems of a capacity ≤10kW would in general include most such systems that can be installed at rooftop of village houses. Those with capacity of the range >10kW to ≤200kW would include such systems installed at rooftops of buildings in general (such as the systems at the Airport Police Station and the Wanchai Tower) while those of the range >200kW to ≤1MW will include relatively larger solar PV systems (such as that at the EMSD Headquarters).

Measures to Further Facilitate the Development of Distributed RE

15. To promote public participation in RE development, the Electrical and Mechanical Services Department (EMSD) is in the process of revamping its website "HK RE Net" (re.emsd.gov.hk). The revamped "HK RE Net" will provide relevant information on RE, including Guidance Notes for PV Installation, a reference Contractor List for PV Installation, information on the grid connection arrangement and frequently asked questions (FAQs) for PV installation, etc..

16. EMSD will also set up a hotline to handle enquires about RE from the private sector, NGOs, schools and the general public and offer technical advice.

17. In the meantime, EMSD will arrange seminars and briefings for the trade to enhance the latter's understanding of the regulatory, safety and technical requirements of setting up RE installations.

18. According to the relevant stipulations under the Business Registration Ordinance (BRO, Cap. 310) and the Inland Revenue Ordinance (IRO, Cap. 112), individuals participating in the FiT Schemes are required to apply for a business registration and file a profits tax return such that profits tax may be charged on any assessable profits derived from selling units of electricity generated by the RE systems to the power companies. While the tax implications are unlikely to be substantial for small RE systems to be installed by individuals at their residential premises, we are of the view that it would be desirable to pursue legislative amendments to exempt these individuals from the said requirements in order to better encourage them to consider installing RE systems at their residential premises. We are now studying the relevant issues and will put forward legislative amendment proposals in accordance with established procedures in due course.

**More Frequent FCC Adjustment**

19. In recent years, there were concerns about the balances maintained in the power companies' respective Fuel Clause Recovery Accounts (FCAs). The FCA has captured the differences between the fuel costs actually incurred by power companies and those charged to consumers, and has been deployed to help smoothen out the impact on tariff

arising from possible volatility in international fuel prices. Owing to the persistent drop of international fuel prices in the past few years, the power companies accumulated sizable surplus balances in their FCAs. As we will use more natural gas (the price of which is relatively volatile) in our fuel mix during the next SCA period, it is envisaged that fuel price forecasting would become more difficult. In order to ensure that the actual fuel costs borne by the power companies would be reflected in tariffs in a more timely manner and avoid accumulation of large surplus balances in the power companies' FCAs, a more frequent FCC adjustment mechanism will be adopted in the next SCA period.

20. Under the mechanism, while an FCC rate will still be determined during the annual Tariff Review exercise based on projected fuel prices for the year and having regard to the expected year-end FCA balance set for smoothening out the fuel mix step changes, the power companies will largely adjust the FCC monthly based on the previous 3-month average actual prices/costs of the fuel consumed[2]. This will help reflect the actual fuel costs in a more timely manner while smoothening out short term fluctuations as a result of significant market volatility in fuel prices.

## Way Forward

21. The two power companies will announce further information in respect of the various programmes, including application procedures, etc., in the coming months before the post-2018 SCAs come into effect in October 2018 for CLP and January 2019 for HKE.

**Environment Bureau**
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[2] While the January FCC rate is fixed in the relevant Tariff Review, and to allow time for collection of actual fuel costs data and calculation, the adjustment of FCC rate will start from March each year.