PUBLIC CONSULTATION ON
REVIEW OF POLICY ON SELF-SUPPLY OF ELECTRICITY

EMA'S ASSESSMENT AND DECISION

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Background of Consultation

1. The current policy on self-supply of electricity (put in place since Apr 02) allows a company to *embed generation* i.e. install generating units for its own use *provided*:

    (a) the generating units are located on land that is contiguous with the company's load facilities; and

    (b) the generating units, load facilities and land are majority (i.e. at least 50%) owned by the company.

2. Several companies had proposed to relax the rules under the current policy:

    (a) The first proposal is to allow a company to *outsource* its embedded generating units by engaging third parties to develop, own and operate the generating units within its premises to generate electricity for its own use on the same site.

    (b) The second proposal is to allow a company to generate electricity for direct supply to its own load facilities, but because of land constraints, its generating units are located on land *non-contiguous* with its load facilities.

    (c) The third proposal is a *Power Park* concept allowing an independent generation company to generate and supply electricity directly to a cluster of unrelated companies.

3. EMA conducted a public consultation in May 07 to seek public feedback on the above proposals.

Respondents

4. There were altogether six respondents to the public consultation including Island Power Company, Keppel Merlimau Cogen, SembCorp Cogen, Senoko Power, Tuas Power, and SP PowerAssets.

5. EMA thanks all the respondents for their feedback.

Feedback Received

6. The respondents were mainly concerned that companies under the proposals as set out in paragraph 2 can circumvent the existing requirements under the electricity licensing regime, Market Rules and codes of practices. This may consequently have adverse impacts on competition in the wholesale electricity market and on power system security and reliability.

7. SP PowerAssets (“SPPA”) further commented that the Power Park concept is a vertically integrated regime that enables companies to engage in generation, transmission and distribution of electricity within choice geographical areas. SPPA was concerned that companies supplying electricity through their own transmission and distribution (“T&D”) infrastructure could result in stranding of existing T&D assets as well as economic inefficiency due to duplication of T&D infrastructure.

8. The respondents’ key comments and feedback are set out in the Appendix.

Assessment

9. EMA’s response to the first feedback above is that in the proposal to allow embedded generating units to be outsourced and/or located on non-contiguous land, there is *no change* to the existing electricity licensing regime, Market Rules and relevant codes of practices. These will continue to apply to such embedded generating units to ensure level playing field and safeguard system security and reliability.

10. As for a Power Park, EMA notes that it is an area with a cluster of companies buying electricity from a private monopoly provider. The monopoly provider is a vertically integrated entity owning the generating units and power cable network to supply and sell electricity to the companies within the Power Park. EMA is reviewing the Power Park concept and the implications if this is allowed.

11. EMA further notes that in land-scarce Singapore, it is not always possible or practical for a company to find a contiguous piece of land to accommodate both its generating units and load facilities. There would be instances where the generating units and load facilities have to be separated by roads, drains, canals or other encumbrances. In addition, the company may find it commercially optimal to outsource its embedded generating units by engaging third parties to develop, own and operate the embedded generating units. This would distort market competition *unless* EMA re-calibrates the rules under the current policy on self-supply of electricity.

Decision

12. Based on the above assessment, EMA has decided to revised the rules under the current policy on self-supply of electricity as follows:

    (a) A company is allowed to embed generation, i.e. install generating units to generate and supply electricity directly to its load facilities provided:

        (1) the embedded generating units are located on land which is contiguous to the load facilities; and

(2) the embedded generating units, load facilities and land are majority (i.e. at least 50%) owned by the same company.

The company is not allowed to export electricity into the power grid. If the company chooses to export electricity into the power grid, it will be treated as a *commercial generation company* and will not be given net treatment for non-reserve market charges.[1]

(b) Subject to the following conditions, the company may install the embedded generating units on land that is *non-contiguous* with its load facilities and/or *outsource* the embedded generating units by engaging third parties to develop, own and operate the embedded generating units:

(1) Provided there is no or insufficient contiguous land available for the company to accommodate the embedded generating units and load facilities, the company may locate the embedded generating units on land that is non-contiguous with the load facilities;

(2) The load facilities and the land on which the load facilities and embedded generating units are located (i.e. including the non-contiguous land if applicable) must be majority owned by the same company;

(3) There is a point-to-point (i.e. dedicated) electrical connection between the embedded generating units and load facilities; and

(4) There is no export of electricity generated from the embedded generating units into the power grid.

13. However, EMA will not allow outsourcing of embedded generating units to a company if this creates market power or adds to existing market power of the company.

14. The current electricity licensing regime, Market Rules and relevant codes of practices will continue to apply to embedded generating units that are outsourced and/or located on non-contiguous land to ensure level playing field and safeguard system security and reliability.

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[1] Introduced in Aug 06, the net treatment of embedded generators for non-reserve market charges is set out in the Information Paper entitled "Net Treatment of Embedded Generators" which is available at EMA's website: www.ema.gov.sg

RESPONDENTS' KEY COMMENTS AND FEEDBACK

1. From Island Power Company

IPC supports a fair and equitable competitive electricity market in Singapore. In addition to the principle of "user-pays", the principle of maintaining a level playing field should be applied. *All new generation investments must be made on a level playing field to avoid inefficient investments and retain investor confidence.*

The consultation paper is silent on assessment against other conditions and charges, such as Licence Conditions, wholesale market and PSO charges. To complete a full and proper "user-pays" assessment, it is necessary to consider implications against a wide range of conditions and charges.

Consumers supplied by embedded generation who choose to connect to the power system for backup supply are beneficiaries of the market, system reliability and common quality. Consistent with the "user-pays" principle, embedded generation *should pay reserve and non-reserve charges on a gross basis*. All generation whether grid-connected or embedded should participate on a common basis. This will maintain a level playing field, avoid inefficient investments and keep reliability and common quality on firm footing.

2. From Keppel Merlimau Cogen

There is a potential creation of "small distribution" companies. This is so especially for the concept of power park. Whichever direction, such facilities *should be paying for the grid backup charges*.

There is creation of a *new class of market participant* especially the power park concept as they have *captive customers*.

3. From SembCorp Cogen

How can the EMA ensure accountability and responsibility to system security if outsourcing is permitted, while the terms and conditions of supply (which are usually commercially driven) are known only to the third party and the company?

Consumers and generators who are in direct supply arrangement may avoid regulation payment since gross metering and settlement may not be available to EMC's Market Clearing Engine.

For non-reserve charges, embedded generators are granted net treatment. Direct supply will allow the large customers avoid EMC & MSSL charges if there is no structure in place to charge them based on the principle similar to that being proposed in this consultation paper. As the MSSL meter will only register the net system consumption, charges may be reduced for these customers. This may result in the rest of the consumers bearing higher charges.

4. From Senoko Power

There are wide-ranging policy implications should companies be allowed to procure their own electricity supply *outside the current electricity market*. EMA's consultation paper focused solely on Grid charges. This is premature and more consideration should be placed on the implications of direct supply on the National Electricity Market (NEMS) before proceeding further.

EMA must give due consideration and justification before allowing companies to circumvent the current electricity licensing scheme which is working fine. The regime establishes the framework in which generators, the MSSL, the transmission licensee, retailers and the wholesale electricity market come together to support the NEMS. Competition supported by this system has been successful in providing immense benefits to the end consumers (e.g. cushioning the increase in fuel oil prices by 50 per cent).

5. From Tuas Power

Grid-connected loads and generating units enjoy collective benefits in terms of frequency regulation, backup in terms of reserves, etc and should therefore pay their fair share of the benefits enjoyed. This is in-line with the "user-pays" principle.

Market-related charges such as EMC/PSO fees for both (gross) loads and generating units as well as spinning reserves charges on generating units *should continue to apply*. This is a fundamental principle of a gross market design adopted for the Singapore market unless the level is below the threshold as spelt out in the market rules.

6. From SP PowerAssets

The existing market structure is designed to separate the competitive wholesale market from the regulated T&D activities. It is on this fundamental market design philosophy, market players including SPPA have committed substantial investments in the infrastructure. The proposed schemes will re-create a vertically integrated regime and hence enable companies to engage in generation, transmission and distribution of electricity within choice geographical areas. This can be construed as policy U-turn in electricity market reform and undermines the efforts and achievement of market restructuring over the past 10 years.

Any major changes in market structure must follow a robust process. For a start, this entails a comprehensive assessment of costs and benefits due to the changes. The change of market structure should not be initiated simply at the request of a few customers who have asked for the proposed schemes. To fully address the impact of the proposed schemes, SPPG recommends a detailed cost and benefit analysis be conducted in the context of current market design.

The proposed schemes could result in stranding of existing T&D assets, as gencos could supply customers directly through their own T&D infrastructure. This will lead to duplication of T&D infrastructure and hence economic inefficiency.

The proposed schemes will encourage potential power park operators to compete with SPPA and cherry-pick the choice locations and customers. On the contrary, SPPA has the obligation to connect any customer at any location and maintain the high standards of reliability and quality of supply. This is not a level playing field and may result in inefficient transmission investment.

The proposed schemes inject significant risks to SPPA's T&D business. SPPA will have to mitigate such risks by locking in customers for longer capacity binding periods. At present, SPPA requires a new HT customer (connected at 6.6kV and above) to commit its capacity binding period for an initial 5 years followed by yearly binding period. However, SPPA recovers the investment costs over a 30-year period. SPPA is able to offer this flexibility of capacity requirement as the current risk of asset stranding is low. In the event both existing and new customers have choice of different T&D operators, SPPA will be unable to continue with this current practice to HT customers with regards to capacity binding period.

At present, SPPA's customers enjoy economies of scale from a single grid network. This is one of the main reasons that SPPA has been able to offer them with very attractive grid charges. The proposed schemes will lead to reduction of economies of scale and higher grid charges as less load base is used to absorb fixed overhead costs.

Furthermore, the issue of what happens if a customer wants to leave the power park for a variety of reasons and connect to SPPA's network remains unanswered. This scenario presents a host of commercial, regulatory and legal issues which needs to be addressed.

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