

RCP PAPER NO. : **EMC/RCP/92/2017/CP68**

SUBJECT : **REVIEW OF METHODOLOGY FOR THE RECOVERY OF
EMC'S AND PSO'S FEES**

FOR : **DECISION**

PREPARED BY : **YAP YUN BEN
ECONOMIST**

REVIEWED BY : **PAUL POH LEE KONG
EVP, MARKET ADMINISTRATION**

DATE OF MEETING : **7 MARCH 2017**

Executive Summary

EMC recovers EMC's and PSO's administrative costs in any EMC/EMA fiscal year by imposition of fees on each applicable market participant (MP), market support services licensee (MSSL), and other persons as specified in the schedule of fees approved by the Energy Market Authority (EMA). In general, EMC's and PSO's fees are currently charged to each MP and MSSL for each megawatt-hour (MWh) of energy injected (IEQ) and withdrawn (WFQ).

This paper assesses whether the current fee methodology is optimal and in accordance with sound economic principles, and proposes amendments.

Generally, the services provided by EMC can be categorised into two types:

(i) **User Service:** The users of these services can be identified, and the costs of providing such services can be directly attributable to those users. Hence, users should bear the costs of such services. As such, EMC recommends a one-off **MP registration application fee** to be reinstated and a **facility registration application fee** to be charged per facility.

(ii) **Common Service:** The users of these services cannot be meaningfully identified. Hence, fees on a per-unit basis should be charged for the costs of common services. However, due to the current fee methodology which recovers fees based on IEQ and WFQ, there are some MPs which could benefit from EMC and PSO's services but are not charged EMC and PSO fees. Such MPs include both active MPs (i.e. MPs that have transactions in SWEM) which have zero

IEQ and WFQ settlement quantities, and inactive MPs (i.e. MPs that do not have any transactions in SWEM). Since such MPs still uses and/or benefits from EMC's services, EMC recommends introducing an **annual MP fee** and an **annual facility fee** to ensure a more equitable allocation of fees amongst participants in SWEM.

For services provided by the PSO, if user services are provided or if there are incremental costs to common services due to incremental MPs or facilities, then the costs of such services should also be recovered via one-off user service fees or annual fees, charged to the applicable MP and/or facilities, similar to the proposed arrangement for EMC services.

At the 92nd RCP meeting, the Panel by majority vote in-principle supported introducing, for both EMC's and PSO's fee methodologies, the following fees:

- MP registration application fee and facility registration application fee (Proposal 1);
- Annual MP fee (Proposal 2); and
- Annual Facility fee (Proposal 3).

The RCP will write to the EMA to:

- **propose** that the above proposed fees be introduced for both EMC's and PSO's services, where appropriate;
- **recommend** that the EMA consult the EMC and the PSO to determine the level of fees; and
- **convey** the RCP's views on various matters discussed.

1. INTRODUCTION

This paper reviews the current fee methodologies for the recovery of the cost of services provided by the EMC and the Power System Operator (PSO) for supporting the operations of the Singapore Wholesale Electricity Market (SWEM). This paper assesses whether the current fee methodology is optimal and in accordance with sound economic principles and proposed changes to them.

2. BACKGROUND

2.1 Current EMC and PSO Fee Methodologies

Under Section 4.2 of Chapter 7 of the Market Rules, EMC shall recover its administrative costs in any given EMC fiscal year by means of the imposition of fees on each applicable market participant (MP), market support services licensee (MSSL), and other persons. Such fees shall be levied as specified in the schedule of fees approved by the Energy Market Authority (EMA) for that EMC fiscal year or as specified in the schedule of fees prepared by the EMC for that EMC fiscal year on the basis of the methodology approved by the EMA for that EMC fiscal year.

In addition, EMC shall recover, on behalf of the PSO, the PSO's administrative costs in any EMA fiscal year by means of the imposition of fees on each applicable MP, MSSL and other persons. Such fees shall be levied as specified in the prevailing PSO's schedule of fees provided by the PSO to the EMC for that EMA fiscal year.

In general, EMC's and PSO's fees are charged to each MP and MSSL for each megawatt-hour (MWh) of energy injected (IEQ) and withdrawn (WFQ¹).

The EMC fee recovers the cost of providing common services provided by the EMC, which are:

- Systems
- Pricing and information
- Settlement
- Ancillary services management
- Market assessment
- Rule changes
- Panel administrative support
- Dispute resolution

For other services where the costs can be directly attributable to a specific user ("user service"), the user is charged directly for estimated costs and expenses incurred in providing the services. Examples of user service fee charged by EMC include derogation application fee and specific market surveillance costs for investigation by the Market Surveillance and Compliance Panel (MSCP) due to rule breaches. The user service fee charged for MP registration applications was removed in 2007² (this service is also referred to as "Market Participation" in this paper).

Please refer to **Annex 1** for a description of each EMC's service.

¹ WFQ refers to the withdrawal fee quantity and is the sum of net withdrawal or net injection energy quantities for an embedded generation facility, or the withdrawal energy quantity (WEQ) of any other load which is not associated with an embedded generation facility.

² The MP registration application fee was removed in Rule Change 269 (https://www.emcsg.com/f306_9005/EMC269-EMA-TS.pdf).

2.2 Proposal Received

A proposal received during the 2016/17 Rules Change Work Plan Prioritisation Exercise suggests that EMC assesses whether the current fee methodology recovers service providers' fees in an optimal way, given that EMC's and PSO's services are being used by an increasingly diverse set of MPs such as demand response (DR) providers, non-conventional generators and electricity futures participants.

3. ANALYSIS

3.1 Cost Allocation Principles

In the SWEM, costs are intended to be allocated in accordance with the following principles³:

1) Compliance with the Market Rules and Market Licence

Condition 18 of EMC's Market Licence requires EMC to:

- set separate prices for separate services
- set prices that reflect the underlying cost structure of the services provided (e.g. fixed prices to recover fixed costs and usage-based prices to recover variable costs)
- not discriminate on price between parties in similar circumstances

2) Economic Efficiency

- Costs of a service should be allocated to users of that service ("user-pay")
- Where the costs of a service cannot be meaningfully allocated to users, costs should be allocated as near to end users (consumers of electricity) as possible to facilitate passing on of these costs
- Usage-based prices should be used to recover variable costs. A simple way to do this is to set a variable fee or price per unit, which should be set close to short-run marginal cost (SRMC)⁴
- Fixed costs should be recovered through the least distortionary means possible, normally a fixed charge⁵

3) Fairness

- *Vertical equity* – Those who have different levels of use of a service should pay different amounts.
- *Horizontal equity* – Those who receive the same level of service should pay the same amount.

Condition 18, clause 6 of EMC's Market Licence requires EMC to adopt a fee methodology that does not discriminate between any persons or class or classes of persons similarly situated, which is a reflection of this latter principle.

4) Simplicity

The fee structure should be simple in design and allow MPs to easily understand:

- what services they are paying for,
- the basis for calculating those fees, and

³ LECG's "EMC Fee Methodology – Market Start – 31 March 2003 (Final)", dated September 2002.

⁴ This pricing structure is likely to be most efficient where demand is sensitive to price, and fixed costs are a large proportion of total costs. If fixed costs are low, and demand is insensitive to price, the costs of additional complexity of this pricing scheme are unlikely to be worth incurring.

⁵ However, this is not always the case. High fixed charges may pose a significant barrier to new entrants and so sometimes need to be weighed against variable charges.

- who is liable to pay each fee.
- MPs should be able to easily predict how much they will have to pay.

3.2 List of Key EMC Services

To determine whether the current fee recovery methodology is optimally allocated and/or is in accordance with the principles stated in section 3.1, we first assess the type of EMC that each class of MPs utilises and pays, vis-à-vis the whole set of services provided by EMC. This is shown in the table below:

Table 1: Key Services Provided by EMC

S/N	Service	Common or User Service	Who benefits?	Who are charged?
1	Pricing and Information	Common	<ul style="list-style-type: none"> • Generators • Retailers⁶ • Wholesalers (Generation) • Wholesalers (Demand Side Participation) 	<ul style="list-style-type: none"> • Generators • Retailers • Wholesalers (Generation) • Wholesalers (Demand Side Participation)⁷
2	Settlement			
3	Systems			
4	Rule Changes			
5	Panel Administrative Support			
6	Market Participation	User		
7	Market Assessment	Common/User*		
8	Ancillary Service Management	Common		
9	Dispute Resolution	Common/User*		

*Market assessment service can be either general market surveillance (common service) or investigation (user service). In the latter case, the user (e.g. the MP being investigated or appealing against a financial penalty imposed under the automatic financial penalty scheme) is charged a cost as determined by the MSCP. Similarly, dispute resolution can be both common and user service, with a retainer fee for the Dispute Resolution Counsellor to facilitate and manage the dispute resolution process for all (common service), and MPs which utilise the specific dispute resolution service (e.g. appointment of a mediator) will pay for the specific costs incurred (user service).

3.3 Analysis of Current Fee Methodology

The following analysis pertains only to EMC's services. Please refer to Section 4(H) for inputs from the PSO regarding PSO's services.

3.3.1 User Services Fees

As shown in Table 1, market participation, market assessment and dispute resolution are the user services provided by the EMC. According to the cost allocation principles, since the user(s) for these services can be directly identified, the user(s) should be charged directly for all costs and expenses incurred in providing those services.

3.3.1.1 Issue and proposed solution to user services

Issue

⁶ MSSL subsumes under this category for its electricity retailing business.

⁷ Wholesalers (Demand Response Participation) pay for common services indirectly based on energy consumed (i.e. WEQ) since it can only provide Demand Response (DR) or interruptible load (IL) services when it is consuming energy.

While market participation is a user service, the cost of providing this service (e.g. time spent to process and review applications) is currently recovered as a “common service” with the removal of the MP registration application fee in 2007⁸. This is a deviation from the intended fee design, given that (i) EMC also expends time and resources to provide registration services (akin to EMA charging for licensing) and (ii) the user of such services directly benefits and can be easily identified.

Proposal 1

In alignment with the user-pay principle, a one-off **MP registration application fee should be reinstated**. This is in line with the consultant’s recommendation at market start, as well as the practices in other jurisdictions such as PJM, ISO-NE, CAISO and AEMO⁹.

In addition, for the same reasons, a **facility registration application fee** should also be charged per facility registration.

Ideally, the proposed registration fees for MP and facility applications should be set at the marginal costs of processing the respective registration applications. At the same time, these fixed fees should not be too high such that it will deter new entrants, e.g. renewable energy suppliers.

3.3.2 Common Services Fees

Table 1 above illustrates that most of EMC’s services are considered common services.

Prior to market start, in 2002, it was estimated that about 87% of EMC’s cost are fixed costs¹⁰. Based on the cost allocation principles (Economic Efficiency), fixed costs should be recovered via the setting of fixed fees per MP as it would be the least distortionary method. However, this would require large fixed fees to be imposed each MP, which could be a barrier to new entrants. As such, the consultants at that time proposed to charge fees on a per-unit basis rather than via a fixed fee, which is consistent with practices in other competitive electricity markets.

3.3.2.1 Issues and proposed solutions to common services fees

Due to the current fee recovery mechanism (i.e. using IEQ and WFQ), there are MPs which are not charged any EMC and PSO fees. Such MPs include both inactive and active MPs. Table 2 below summarises the differences between these two types of non fee-paying MPs.

Table 2: Types of Non Fee-Paying MPs

Inactive Non Fee-Paying MP	Active Non Fee-Paying MP
<ul style="list-style-type: none"> MP without transactions in SWEM 	<ul style="list-style-type: none"> MP with transactions in SWEM (but with zero IEQ and WFQ) <ul style="list-style-type: none"> MPs with only Load Registered Facilities (i.e. IL/DR providers) Embedded Generation Facility (EGF) whose withdrawal perfectly equals injection

Table 3 below provides an indication of the percentage of fee-paying MPs in each class of MP as at 30 November 2016.

⁸ In RC269: Removal of Registration Application Fee (<https://www.emcsg.com/f306.9005/EMC269-EMA-TS.pdf>).

⁹ Refer to **Annex 2** for detailed comparison of the arrangements in various electricity markets.

¹⁰ Estimation by LECG in “EMC Fee Methodology – Market Start – 31 March 2003 (Final)” dated September 2002.

Table 3: Percentage of Fee-Paying MPs in Each Class

Class of MP		Generation licensee	Retail electricity licensee ¹¹	Wholesale trader
Total Number of MPs		14	17	17
Number of non fee-paying MPs		2	2	13
Breakdown of non fee-paying MPs	Inactive Non Fee-Paying MP	1	2	4
	Active Non Fee-Paying MP	1	0	9
% of Fee-Paying MPs¹²		86%	88%	24%

(A) Inactive Non Fee-Paying MPsIssue

Inactive MPs do not have any transactions in the SWEM, but could nevertheless benefit from having access to data and information such as prices, reports, and outage plans that are published by EMC. For example, such information would be useful to retailers trading in the electricity futures market, but which have not yet begun retailing in the physical market (and hence do not have any WFQ figures).

Despite their inactivity, EMC would still incur on-going costs to maintain and service these MPs' accounts¹³. Moreover, parties which are not MPs would have to sign up with EMC as a data subscriber to gain access to EMC's and PSO's data that is disseminated by EMC, and which are otherwise only available to MPs. To the extent that the cost of being a long-term data subscriber is higher than being registered as an MP without any transactions in the SWEM (where such MPs would only be paying for the EMA's licence fee), parties could prefer being an MP solely to gain access to those data.

Proposal 2

To correctly reflect the recurring costs that inactive MPs impose and reduce potential arbitrage behaviour, **an annual fee should be charged on each MP** ("annual MP fee"). Having a recurring annual MP fee would incentivise inactive MPs to make a conscious decision on whether to deregister as an MP or remain as an MP but pay the corresponding annual fee reflecting the cost of having its account maintained by the EMC.

As the annual MP fee is fixed, it should be priced such that it only includes the minimal cost for EMC to maintain an account. Ideally, the annual MP fee should be set at least at the EMC data subscription annual fee to discourage potential arbitrage behaviour, as described above.

(B) Active Non Fee-Paying MPsIssue

Active non fee-paying MPs have transactions in the SWEM, but are not charged EMC and PSO fees due to the current methodology which levies fees based on IEQ and WFQ.

¹¹ Red Dot Power Pte Ltd holds two licences, namely Wholesale (Demand Side Participation) and Retail Electricity Licences, but is classified as a retailer in this analysis. SP Services Ltd is also classified as a retailer in this analysis.

¹² % of Fee-Paying MPs in this Class = (Total Number of MPs – Number of non fee-paying MPs)/(Total Number of MPs).

¹³ Refer to **Annex 3** for a detailed list of services provided by EMC to maintain these MPs' accounts.

For IL providers, it was recognised in Concept Paper 20¹⁴ that, on the basis of fairness and economic efficiency, there is reason to charge such providers for reserve provision, provided that the same basis applies to all reserve and regulation providers. However, the paper also concluded that extending EMC fees to reserve and regulation providers will have no material improvement to economic efficiency. Moreover, loads' withdrawals are charged EMC and PSO fees.

For embedded generators, it is an EMA policy decision that they are charged only for any net withdrawal from, or net injection into, the grid.

Regardless, these MPs utilise EMC's services¹⁵ directly in the course of performing their trading activities in the SWEM (like all other generation facilities) and hence should be paying for the costs of the relevant services.

Proposal 3

It is proposed that **an annual fee be charged per facility** ("annual facility fee").

One argument supporting the imposition of an annual facility fee is that the more facilities an MP registers in the SWEM, the more common services the MP uses, and hence the MP should pay a greater proportion in fees. As different facilities have different levels of usage, the annual facility fee should in theory be multi-tiered to account for different types of facilities.

However, weighing the complexity of implementation against the simplicity principle, we recommend charging a fixed annual facility fee per facility on all facilities (i.e. GRFs, GSFs, LRFs). Similar to the annual MP fee, this fixed fee should be set such that it only includes the marginal cost for EMC to maintain a facility.

3.4 Current Fee Methodology versus Proposed Fee Methodology

Table 4 below summarises the differences between the current fee methodology and the proposed fee methodology.

¹⁴ Paper No. EMC/RCP/46/2009/CP20: Review of EMC fees on Interruptible Load Providers

(https://www.emcsg.com/f316,25067/CP20_Review_of_EMC_Fees_on_IL_20091103_track_change_v3.pdf)

¹⁵ Refer to **Annex 4** for a detailed list of services provided by EMC to maintain the facilities and to allow them to trade in SWEM.

Table 4: Current Fee Methodology versus Proposed Fee Methodology

Party	Type of Service	Current Fee Methodology	Proposed Fee Methodology
EMC	Common Services		
	<ul style="list-style-type: none"> Systems Pricing and information Settlement Ancillary service management Market assessment Rule changes Panel administrative support Dispute Resolution 	Fee per MWh of energy injected or withdrawn	Fee per MWh of energy injected or withdrawn
	<ul style="list-style-type: none"> Incremental cost of an MP or facility 	Nil	<ul style="list-style-type: none"> Annual MP fee per MP (to reflect ongoing costs posed by each MP; Proposal 2) Annual facility fee per facility (to reflect ongoing costs posed by each facility; Proposal 3)
	User Services		
	<ul style="list-style-type: none"> Derogation 	Derogation application fee ¹⁶	Derogation application fee
	<ul style="list-style-type: none"> MSCP investigation and appeal cost Mediation and arbitration services cost 	As charged	As charged
	<ul style="list-style-type: none"> Market participation (Registration) 	Nil	<ul style="list-style-type: none"> Registration application fee for each MP registration application and each facility registration application (Proposal 1)
PSO	Common Services		
	<ul style="list-style-type: none"> Maintaining the reliability of the PSO controlled system Forecasting and reporting on conditions on the PSO controlled grid Coordinating the outage of facilities Coordinating the actions of the EMC and MPs during emergencies Dispatching facilities 	Fee per MWh of energy injected or withdrawn	Fee per MWh of energy injected or withdrawn
	User Services		
	<u>Note: See PSO's comments in Section 4(H) below</u>	Nil	Remarks: The RCP to discuss the PSO's fee methodology after further

¹⁶ Currently set at \$5,500 (inclusive of GST)

Party	Type of Service	Current Fee Methodology	Proposed Fee Methodology
			clarifications have been provided by the PSO (see clarifications required from the PSO in EMC's response to PSO's comments in Section 4(H) below).

3.5 Determination of the Level of Registration Fees and Annual Fees

If the RCP supports the proposed fee methodology described above, EMC recommends that the RCP recommend that the EMA consults the EMC and the PSO to determine the level of the proposed fees as set out in Table 4.

4. CONSULTATION

The concept paper was published for industry consultation on 23 January 2017, and comments were received from 11 stakeholders, namely Buri Energy, PacificLight Power, SP Services, Tuaspring, Hyflux Energy, Senoko Energy, Keppel, YTL PowerSeraya, ExxonMobil Asia Pacific, Tuas Power and PSO. The comments are grouped by topic in Table 5 below.

Table 5: Comments Received from Consultation

Category/ MP	Comments	EMC's Response
A) General comments		
PacificLight Power	<i>PLP would recommend that EMC conduct a simulation which proves that cost reallocation would not result in cross-subsidy between MPs.</i> <i>The cost allocation methodology that is ultimately adopted should be transparent and straightforward to understand and allow MPs to reconcile against the overall costs.</i>	Given that we do not know the quantum of the proposed fees at this moment, the requested simulation is not possible to be conducted. Regardless, this proposal aims to reallocate cost to MPs in a more fair and equitable manner. We agree that the cost allocation methodology should be transparent and simple.
Buri Energy	<i>In principle, we agree that EMC and PSO should charge the cost of its services in an equitable manner. In particular, we support the overall proposal to recover costs for access to information and services provided by EMC and PSO from users that benefit from such services.</i>	We note that Buri Energy, Senoko Energy and SP Services broadly agrees with our proposals.
Senoko Energy	<i>Senoko is supportive of EMC's proposals for a more equitable allocation of costs.</i>	
SP Services	<i>We note that EMC intends to review the current methodology of recovery of EMC's fees to be more in line with the user-pay principle and ensure a more equitable allocation of fees</i>	

Category/ MP	Comments	EMC's Response
	<p>amongst market participants (MPs).</p> <p>We are in agreement that the current methodology should be further refined to mitigate the cross-subsidization of the EMC fees that is attributable to the non-fee paying MPs by the paying MPs.</p>	
B) Section 3.1 (Cost Allocation Principles)		
PacificLight Power	<p>PLP is supportive of the existing cost allocation principles for the recovery of service providers' fees. As there is an increase in the diverse set of Market Participants (MPs), and in accordance with how the NEMS has always been developed, the principle of equity should be maintained. Notably all registered MPs who benefit from market services should be expected to contribute to the costs of operating and developing the market on an ongoing basis.</p>	We note PacificLight Power's comment.
Keppel	<p>Keppel agrees with EMC that the allocation of costs in the SWEM should be in accordance to equity and the "user-pay" principle.</p>	We note Keppel's comment.
C) Proposal 1 (MP Registration Application fee and Facility Registration Application fee)		
Keppel	<p>As such, we support EMC's recommendation of a one-off MP registration application fee and a facility registration application fee.</p>	We note Keppel's, Tuaspring's, and Hyflux Energy's support of Proposal 1.
Tuaspring	<p>We agree with EMC's Proposal 1 and the basis for setting of such registration fees. This would avoid the situation of recovery of marginal costs associated with new registration processing through other means which are less appropriate.</p>	
Hyflux Energy	<p>We support Proposal 1 for implementation of registration fees.</p>	
D) Proposal 2 & Proposal 3 (Annual MP fee and Annual Facility fee)		
Tuas Power	<p>Tuas Power supports the implementation of an annual MP fee.</p> <p>The majority of EMC's costs are recurring fixed operating expenses for manpower, NEMS system hardware and software Opex. These resources are used to generate power market information, which the market participants will use in their daily businesses.</p> <p>Similarly, power generation companies in Singapore, though not oil majors, also pay annual subscription fees to Platts to obtain the licensing rights to use the oil market data, such as daily HSFO and Dated Brent data, in the fuel or retail contracts.</p> <p>It is, therefore, reasonable for all the market participants, who have access to the market</p>	We note Tuas Power's comments.

Category/ MP	Comments	EMC's Response
	<p><i>data (regardless of their level of activity), to pay a fee to EMC to use the data and reports generated by EMC for their business purposes.</i></p> <p><i>For the determination of the annual MP fee, the benchmarks are proposed to be based on the following:</i></p> <p><i>(1) Non-market participants can subscribe to EMC data at a fee. The subscription fee (including power market data, power system information and past 1 year of historical data and reports) is approximately S\$25,000 per year for 3 user accounts.</i></p> <p><i>(2) The annual Platts subscription fee is approximately US\$10,000 per user account per year.</i></p> <p><i>Market participants who wish to have more user accounts can have the annual fees adjusted proportionally since EMC would be required to utilise more resources to set up, maintain and service the accounts.</i></p>	<p>The annual MP fee level will be determined by the EMA in consultation with EMC.</p> <p>The proposed annual MP fee could take into account the cost of a standard number of tokens. MPs could be charged for additional tokens above the standard number.</p>
Tuaspring	<p><i>We broadly agree that recurring costs caused by inactive MPs should be recovered based on the "user-pay" principle. In addition, the fee structure should be sufficiently significant such that MPs would be motivated to make conscious efforts to determine if they should renew their status as a MP.</i></p> <p><i>Furthermore, we are also supportive of the remark made by EMC on the current methodology and policy for cost recovery from reserve, regulation providers, as well as embedded generator. We recommend that a review be performed to assess the fairness of the current methodology and policy from these groups of participants as their trading activities contribute to the operating costs of EMC.</i></p>	<p>We agree that the annual MP fee level should be set such that it can incentivise inactive MPs to make a conscious decision on whether to maintain their MP status. To do so, the annual MP fee should be set at least at the annual cost of EMC's data subscription to prevent potential arbitrage. However, ideally, the actual fee level should be set based on the cost of providing various services listed in Annex 3. The annual MP fee level will ultimately be determined by the EMA in consultation with the EMC.</p>
Hyflux Energy	<p><i>We support the intent behind Proposals 2 & 3.</i></p> <p><i>However, we would like to caution that the setting of the annual fee quantum be sufficiently appropriate and impactful to incentivise inactive MPs to make a conscious decision on whether to maintain their MP status. As such, we doubt setting of such annual fee should be comparable to the current EMC data subscription annual fee which is very</i></p>	<p>The annual MP fee level will ultimately be determined by the EMA in consultation with the EMC.</p>

Category/ MP	Comments	EMC's Response
	<i>manageable for interested parties.</i>	
Senoko Energy	<i>We believe that the annual MP fee in Proposal 2 should include the associated costs of all services in Annex 3 and other relevant services.</i>	We note Senoko Energy's comment.
SP Services	<p><i>Currently, EMC's fees are charged to each MP and MSSL on a per-usage basis (for each MWh of energy injected i.e. IEQ and withdrawn i.e. WFQ).</i></p> <p><i>Proposal 2 and 3 suggest imposing a fixed fee on each existing MP/facility regardless whether the MP fall under the Fee-Paying or Non-Fee Paying category.</i></p> <p><i>We would like to suggest that EMC share with the industry how it intends to allocate the common service cost between usage based charging and fixed fee charging to achieve the above objective.</i></p> <p><i>As SPS recovers the EMC and PSO admin Fees on behalf of its customers via the tariff, we would like to seek EMA confirmation when EMC charging methodology is finalized.</i></p> <p><i>We would like to highlight that although SPPA is also a MP, they do not need to access EMC system as they do not need to EMC services such as price/settlement data.</i></p> <p><i>Therefore, we wish to seek clarity if SPPA should be exempted in accordance to the user-pay principle.</i></p>	<p>Yes, that is correct.</p> <p>Only incremental cost of an MP or facility to the costs of the common services should be allocated as fixed (annual) fees on each MP and each facility, based on the list of services listed in Annexes 3 and 4. The remaining costs of providing common services will continue to be allocated via variable fees (i.e. usage-based).</p> <p>We agree that SPPA should currently not be required to pay the annual MP and annual facility fees in accordance with the user-pay principle.</p>
Buri Energy	<i>1. In terms of the proposed fees, we wish to highlight that the fee structure and amount should be fair and transparent to all MPs. Proposal 2 suggests that the annual fee charged on each MP based on EMC's current data subscription service. In this instance, it is worthwhile to specify how these subscription fees are derived, and whether the proposed quantum is justified.</i>	The current data subscription fees are calculated based on NEMS infrastructure cost, market operations and IT departments' support cost and other departments' support cost (such as finance for billing). The derivation of the subscription fees has been shared with the EMA.

Category/ MP	Comments	EMC's Response
	<p>2. Also, while all MPs may have access to the same data, we understand that each MP can apply for as many users (or log-in accounts) as required. Similar to many data subscription services' pricing structures, we would like to suggest imposing a fixed annual subscription fee per organization with access to services and information, and in addition, an annual fee per user. To simplify the management of the scheme, some number of users (2-5 tokens) can be included in the fixed annual subscription fee.</p> <p>3. Will the annual fees be pro-rated based on the date the MP and facility gets registered in the market?</p>	<p>The proposed annual fee could take into account the cost of a standard number of tokens. MPs could be charged for additional tokens above the standard number.</p> <p>As the proposal to implement annual fees arose from the rationale that EMC would incur costs to maintain and service an MP's account and a facility regardless of the level of activity on an annual basis, it is reasonable that the annual fees be pro-rated based on the date an MP or a facility is registered in the market.</p>
E) Minimum monthly transaction fee / Fee waiver		
PacificLight Power	<p><i>The paper proposed an annual fee charged on each MP to reflect recurring costs imposed by inactive MPs and to reduce potential arbitrage behaviour. In lieu of an annual MP fee, PLP would recommend a minimum monthly EMC admin charge. This will enforce the principle of transparency in cost allocation, which will help facilitate passing on the costs to electricity consumers, while at the same time ensuring fairness in spreading costs across all MPs.</i></p>	<p>The decision on whether to collect the annual fees in the form of minimum monthly transaction fee would depend on the discussions and decision by the RCP.</p> <p>However, we recommend that the annual fees be collected as a separate</p>

Category/ MP	Comments	EMC's Response
YTL PowerSeraya	<i>YTL PowerSeraya proposes that if the assessed fees for a market participant for the fees charged on the basis of per MWh injected or withdrawn were to exceed a certain threshold to be determined, then the Annual MP fee per MP (to reflect ongoing costs posed by each MP) and Annual Facility fee per facility (to reflect ongoing costs posed by each facility) should be waived.</i>	component instead of collecting this fee in the form of minimum monthly transaction fee because it is against both the principles causer-pay and vertical equity, as described in Section 5 of this paper below.
Hyflux Energy	<i>EMC should also consider possibility of waiving off the annual fee payable should MPs meet a minimum IEQ or WFQ floor on an annual basis.</i>	Even if the proposed minimum monthly transaction fee model is adopted, the threshold applicable to each MP should vary with the number of facilities that MP registers, since the more facilities an MP owns, the more resources it will use.
F) Estimation of annual fee quantum		
PacificLight Power	<i>Based on the cost allocation principles, one of the proposals is to recover fixed costs by setting fixed fees per MP. To alleviate any concerns on additional burden which existing fee-paying MPs have to bear, PLP would recommend that before any fixed fees are implemented that MPs are provided an indication of the fees to be levied. We would also request details on the methodology and frequency of how the fixed fees would be reviewed (e.g. annual, or upon certain pre-defined criteria such as number of MPs.)?</i>	EMC and EMA have yet to engage in any discussions on these fees. EMA believes that it would be premature for EMC to share any information relating to the level of fees to be charged as this would pre-empt EMA's decision on the matter. EMC requests that the RCP confine its review to the methodology to be adopted in charging the proposed fees.
Tuaspring	<i>While we support Proposals 2 & 3, further comments cannot be provided until EMC provides some estimates of the range of annual fee to be imposed per MP and facility, alternatively, clarity on the basis of the quantum to be imposed can be provided.</i>	Any decision on fee quantum should be deferred to EMA as the Regulator.
G) Impact of proposals on the variable (\$/MWh) EMC fee		
Hyflux Energy	<i>We request for more clarity and details from EMC on how the variable component will be determined in consideration of all 3 proposals put forth.</i>	If the variable fee is intended to recover all of EMC's cost, it is reasonable to expect that the variable fee will be reduced with the introduction of the proposed fees listed in Table 4 of this paper.
Tuaspring	<i>Barring any further inputs, we are supportive of an annual fee quantum that is at least comparable to the fixed component of Generation Licencees' licence fees. In order to meet the intent of the review and Proposals set</i>	

Category/ MP	Comments	EMC's Response
	<p><i>forth, we caution that the suggested annual fee be set at quantum which would significantly incentivise inactive MPs to make conscious effort to assess and maintain their registration as MPs. Nonetheless, the expectation is that with more MPs contributing to the recovery of EMC cost, the overall quantum of fees paid by current paying MPs should be reduced.</i></p>	
Keppel	<p><i>Keppel seeks additional clarification on how the proposed annual fees to be charged per MPs and per facility would affect the total fees payable. Would the proposed fee methodology decrease the total fees charged on current fee paying MPs?</i></p> <p><i>The intent of the additional fees is to reflect the recurring costs that inactive MPs impose, and to charge non fee-paying MPs for their utilization of EMC's services. As these costs are currently subsidized by fee paying MPs, if they are to be recovered from inactive/non fee-paying MPs in the future on the basis of fairness, then the amount paid by fee paying MPs should correspondingly be lowered (e.g. through reduction of the fee per MWh of energy injected or withdrawn).</i></p>	
Buri Energy	<p><i>The current EMC cost recovery regime is based on a 5-year price cap regulatory regime, with a fixed operational budget for NEMS-related activities. In this context, how would the introduction of these fixed fees result in lower variable EMC fees?</i></p>	
Tuas Power	<p><i>The estimated annual MP fee collected from the market participants should be used to offset the fixed costs incurred by EMC to lower the EMC administration fee per MWh of electricity traded.</i></p>	
H) PSO fees		
Tuaspring	<p><i>Subject to inputs provided by PSO on recovery of PSO costs after the time of these comments being made, we would generally support the implementation of a one-time registration fee for each facility to account for the marginal cost of processing the registration application, while recovery of PSO's cost on a variable basis for all classes of participants, including intermittent generators, reserve and regulation providers and embedded generators.</i></p>	Please see the PSO's input in this same section below.
ExxonMobil Asia Pacific	<p><i>We would require more insight into what is the magnitude of the proposed charges by PSO.</i></p>	Please see PSO's input in this same section below.

Category/ MP	Comments	EMC's Response
PSO	<p><i>In the rule change proposal EMC/RCP/52/2010/293 on Amendment to PSO Budget and Fees Review Process, the PSO expenses are fully recovered from only Market Participants with energy injection and withdrawal quantities (IEQ and WEQ) in the wholesale market.</i></p> <p><i>However, significant resources of PSO have also been incurred engaging and supporting Market Participants without (or nett) IEQ/WEQ, such as IL providers, small embedded generators, and going forward Demand Response providers too. If agreeable, PSO will provide an estimate of annual total expenses incurred.</i></p> <p><i>Therefore, PSO proposed that the allocation methodology should include a fixed monthly charge payable by the Market Participants without (or nett below a certain threshold) IEQ/WEQ. The fixed monthly charge could be review annually by EMC, taking into account changes in number of such Market Participants and annual total expenses incurred by PSO for such Market Participants.</i></p> <p><i>Market Participants with energy injection and withdrawal quantities (IEQ and WEQ) in the wholesale market will then be allocated balance of the PSO expenses after deducting sum of fixed charges payable by the current non-fee paying Market Participants.</i></p> <p><i>PSO believe this will be a fairer and more equitable allocation of expenses incurred in providing services to all Market Participants, e.g. all MPs receive AGOP, ASA reports, advisory notices and etc. MPs with registered facilities are subject to dispatch and compliance monitoring by PSO, including tracking & processing of non-compliance reports, reserve payment claw-back, automatic financial penalty and referral to MSCP where applicable, generally regardless of their registered facilities size.</i></p>	<p>Note that fees are recovered via WFQ instead of WEQ. Please refer to footnote 1 on Page 3 of this paper.</p> <p>We note that the PSO does provide user services to non-fee paying MPs.</p> <p>On PSO's proposal, we would like to seek further clarification from the PSO on whether the services provided by the PSO vary with the number of MPs or the number of facilities. For example, does a retailer without any facility use the PSO's services? Similarly, does the PSO provide different level of services for an MP with only 1 facility, as compared to an MP with 4 facilities?</p> <p>Also, we recommend that the fixed monthly charge be payable as a separate component, instead of collecting this fee in the form of a minimum monthly transaction fee. Please refer to Section 5 below.</p>

5. ANALYSIS OF THE MINIMUM MONTHLY TRANSACTION FEE MODEL

Arising from the industry consultation, some MPs have suggested adopting a minimum monthly transaction fee, in place of the annual MP and annual facility fees proposed in Proposals 2 and 3

above. Under the proposed minimum monthly transaction fee model, a minimum dollar threshold (e.g. \$X/month) of total EMC variable fees collected from each MP is set, such that each MP at least pays \$X in EMC fees each month.

We analyse the impact of the proposed minimum monthly transaction fee model in this section, to determine if it violates any of the cost allocation principles.

Assume that there are 2 MPs with different levels of transaction, namely:

- **Market Participant A:** 0 unit of usage (i.e. an inactive MP)
- **Market Participant B:** 100 units of usage (i.e. a small active MP)

Also, assume that the fees are set as follow:

- **Annual Fixed Fee** = \$ X/year
- **Variable Fee** = \$ Y/unit

Table 6 below compares the fees charged to each MP under the 2 fee recovery models.

Table 6: Scenario Analysis Results

S/N	Fee Scenario	MP	Annual Fixed Fee Charged Separately			Minimum Monthly Transaction Fee Model		
			Fixed Fee Amount (\$)	Total Variable Fee Amount (\$)	Total Fee Amount (\$)	Fixed Fee Amount (\$)	Total Variable Fee Amount (\$)	Total Fee Amount (\$)
1	No transaction	A		0	X			
2	Small transaction below threshold (i.e. $100Y < X$)	B	X	100Y	$X + 100Y$	X	0	X

Table 6 shows that, under the minimum monthly transaction fee model, even though MP B has a higher transaction volume (100 units) than MP A (0 unit), both MPs are charged the same total fee amount of \$X.

This neither maintains vertical equity nor is consistent with the causer-pay principle, where an MP with higher transaction volumes should pay more than an MP with lower transaction volume.

Moreover, for an MP which has higher transaction volume resulting in total variable fees that are greater than the threshold/minimum amount, its effective variable fee (\$/unit)¹⁷ is not constant and is instead a function of its total transaction volume. As such, the usage-based prices/variable fee per unit is not the same for each MP, which is inconsistent with the cost allocation principles established in section 3.1 (i.e. not discriminate on price between parties in similar circumstances).

We therefore **do not recommend** the adoption of the minimum monthly transaction fee model.

6. CONCLUSION

This paper reviews the current fee methodologies for the recovery of the cost of services provided by the EMC and the PSO for supporting the operations of the SWEM.

¹⁷ Effective variable fee (\$/unit) is defined as the payment in excess of the threshold/minimum dollar value divided by its total usage unit.

The proposed methodologies include recommending, for user services provided by the EMC, a one-off **MP registration application fee** to be reinstated and a **facility registration application fee** to be charged per facility. Furthermore, EMC recommends introducing an **annual MP fee** and an **annual facility fee** to ensure a more equitable allocation of fees amongst participants in SWEM.

For PSO's services, since the PSO has indicated that some non-fee paying MPs do utilise the PSO's services, similar user service fees (e.g. one-off facility registration fee) or annual fees for recovery of PSO's services should therefore also be introduced, pending further clarifications required from the PSO (as set out in EMC's responses to PSO's comments in Section 4).

7. RCP'S DELIBERATION AND DECISIONS AT THE 92ND RCP MEETING

At its 92nd meeting held on 07 March 2017, the RCP discussed the above proposals.

The Panel **by majority vote** in-principle supported introducing, for **both EMC's and PSO's fee methodologies**, the following fees (collectively, the "Proposed Fees"):

- MP registration application fee and facility registration application fee (Proposal 1);
- Annual MP fee (Proposal 2); and
- Annual Facility fee (Proposal 3).

The details of the votes are shown in Table 7 below.

Table 7: Details of votes

No.	Member		Proposal 1	Proposals 2 and 3
1	Mr. Henry Gan	Representative of the EMC	Abstain	Abstain
2	Mr. Soh Yap Choon	Representative of the PSO	Abstain	Support
3	Ms. Priscilla Chua	Representative of Generation Licensee	Support	Support
4	Mr. Marcus Tan	Representative of Generation Licensee	Support	Support
5	Ms. Grace Chiam	Representative of Generation Licensee	Support	Abstain
6	Mr. Lim Han Kwang	Representative of Transmission Licensee	Support	Abstain
7	Mr. Sean Chan	Representative of Retail Electricity Licensee	Support	Support
8	Mr. Daniel Lee	Representative of Retail Electricity Licensee	Support	Support
9	Mr. Luke Peacocke	Representative of Retail Electricity Licensee	Support	Support
10	Mr. Dallon Kay	Representative of Wholesale Trader	Support	Do not support
11	Mr. Lawrence Lee Siew Ming	Representative of MSSL	Support	Support
12	Mr. Phillip Tan Eng Siong	Person experienced in Financial matters in Singapore	Support	Support
13	Dr. Toh Mun Heng	Representative of consumers of electricity in Singapore	Support	Support

The RCP will write to the EMA to:

- **propose** that the above Proposed Fees be introduced for both EMC's and PSO's services, where appropriate;
- **recommend** that the EMA consult the EMC and the PSO to determine the level of Proposed Fees; and
- **convey** its views on various matters discussed by the RCP.

Annex 1: Key Services Provided by EMC

S/N	Service	Covers
1	Pricing and Information	Receiving and validating offers from generators, generation and publication of clearing and final prices and outlook scenarios, management of queries about prices and scenarios, and calculation of final settlement prices
2	Settlement	Receiving bilateral trade data, producing settlement statements, producing invoices and reconciling settlement accounts, management of prudential requirements, and collection of fees (for EMC and PSO) and MEUC
3	Systems	Provision of market applications (e.g. MCE, web services, settlement systems and the website), helpdesk services to enable resolution of any customer problems, and enhancements to services over time as agreed with customers
4	Ancillary Service Management	Assessing ancillary service contracts and checking test results for report to EMA and PSO
5	Market Participation	A) Managing registration of MPs and their facilities
		B) Processing applications for derogation from the Market Rules
6	Market Assessment	A) General monitoring, investigation, enforcement and reporting to MSCP, as well as management of inquiries and complaints from MPs, liaison between MSCP and the market, and education about rules
		B) Costs for investigation efforts and/or financial penalty imposed on party found guilty by the MSCP of rule breaches. Also includes the MSCP's investigation efforts for appeals allowed under the Automatic Financial Penalty Scheme.
7	Rule Changes	Receipt, analysis, reporting, publication, process management of rule changes
8	Panel Administrative Support	Secretarial and administrative support to the RCP, MSCP and DRCP as required
9	Dispute Resolution	Administrative fees involved with maintaining the Dispute Resolution Counselor and the DRCP

Annex 2: Comparisons between Electricity Markets in Different Jurisdictions

Market	Registration fee	Annual Membership fee	Variable fees	Summary of Methodology
PJM	Yes, but only for market buyers and their affiliates, including load serving entities, curtailment service providers or power marketers (application fee of US\$1500). None for market sellers. ¹⁸	Yes, but only for Associate Members ¹⁹ (PJM members with limited rights and obligations. Can participate in the stakeholder activities, working groups or committees; however, these entities do not have voting rights. US\$2500/annum) and Special Members (US\$500 + 10% of Payment Owed by PJM, capped at US\$5000)	Unbundled rate, depending on different service categories: <ul style="list-style-type: none"> Control Area Administrative Service (per MWh of energy withdrawn) Market Support Service per MWh of energy withdrawn + energy injected + MWh in accepted increment offers/ decrement bids per bid/offer segment PJM Settlement cost (per MWh of energy withdrawn + energy injected + MWh in accepted increment offers/ decrement bids) FTR Administrative Service Regulation and Frequency responsive Administrative Service (per MWh, charged to relevant users and generators) Capacity Resource and Obligation Management service (per MW-day) 	<ul style="list-style-type: none"> Since 2006, PJM recovers its administrative costs based on a stated capped rate, rather than based on actual costs of PJM so that MPs have predictability and rate certainty. Rates are determined based on cost of service in each service category. Indirect costs allocated as a percentage of direct costs.
NYISO	No ²⁰	Only for MPs which want to participate in the NYISO's governance process. (Mgmt. committee, business issue committee,	A bundled rate, recovering the NYISO's Revenue Requirement is allocated as follows: <ul style="list-style-type: none"> 28% of Revenue Requirement charged to injections on per MWh basis 72% of Revenue Requirement charged to withdrawals on per MWh basis 	<p>A vote of the Management Committee is required to determine where a new study is to be conducted to modify the current allocation (at least 58% of vote required to decline conducting a cost study).</p> <p>The percentage allocation of NYISO's</p>

¹⁸ Manual 33, section 2.5: Application Cost and Membership Costs

¹⁹ An entity that is not a member of the End-Use Customer sector and has not been a Market Participant over the past six months, and has no verifiable plans to become a Market Participant over the next six months may be an Associate member. Associate Members may attend stakeholder meetings, but do not have voting privileges, and may not transact in PJM's markets.

²⁰ http://www.nyiso.com/public/webdocs/markets_operations/services/nyiso_registration/NYISO_Registration_Packet.pdf

Market	Registration fee	Annual Membership fee	Variable fees	Summary of Methodology
		<p>operations committee)²¹</p> <p>Between US\$100 and US\$5,000 per annum.</p>	<p>Non-physical transactions</p> <ul style="list-style-type: none"> • Virtual Resources per cleared MW • Transmission Congestion Contracts per settled TCC MWh 	<p>Revenue Requirement to injections and withdrawals is determined based on an analysis of costs.</p> <p><u>Methodology</u>²²</p> <ol style="list-style-type: none"> 1. Directly assign the cost to a specific service category or, where such a direct assignment is not feasible, to the Shared Service category. 2. Classify the cost responsibility of each item as Load, Supply, Both, Non-Physical or Other. 3. Classify Shared Services as “Allocate on Payroll” or “Allocate on All”. 4. Allocate Shared Services to the service categories using allocation factors based on the directly assigned costs. 5. Calculate the classification of costs to load, supply, or both for all direct assigned costs. 6. For Shared Services costs, calculate the costs classified as Load, Supply, Both, or Non-Physical and then allocate these classified costs to each service category 7. Result is total cost of service to be recovered from each service category and the amounts to be recovered from load and supply. 8. Develop billing determinants for each service category. 9. Divide cost of service for each service category by the appropriate billing determinants to derive unit costs of

²¹ Section 2.02 of the ISO agreement

http://www.nyiso.com/public/webdocs/markets_operations/documents/Legal_and_Regulatory/Agreements/NYISO/iso_agreement.pdf

²² NYISO's 2011 Consultant's Report: http://www.nyiso.com/public/webdocs/markets_operations/committees/mc_bpwg/meeting_materials/2011-05-18/051811_BPWG_-_Revised_Draft_Report_-_RS1_Study_2_.pdf

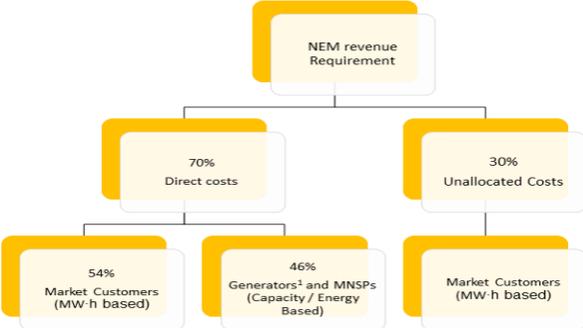
Market	Registration fee	Annual Membership fee	Variable fees	Summary of Methodology
				service. This is the equivalent of what fully cost based rates would be on an unbundled basis.
ISO-NE	Yes. Application fee ranges between US\$500 (data-only MPs) and US\$5000 (Generation, Transmission, Supplier)	Yes. Annual fees per MP ranges between US\$500 (data-only MPs) and US\$5000 (Generation, Transmission, Supplier)	Schedule 1 - Scheduling, System Control and Dispatch Service Schedule 2 - Energy Administration Service (charged to all MPs based on energy transaction units, increment offers/decrement bids, submitted/cleared FTR auction bids, and volume) Schedule 3 - Reliability Administration Service	<ul style="list-style-type: none"> • Cost recovery based on the ISO's expenses in providing the relevant service. • Indirect costs allocated as a percentage of direct costs.
CAISO	Yes. Registration fee of US\$5000 per scheduling coordinator (SC); US\$1000 for registration as a Candidate Congestion Revenue Rights holder applicant (if applicant is not a SC).	Not explicitly, but there is a monthly SCID (Scheduling Coordinator ID) fee of US\$1,000 for SCs that have settlement activity in a trade month. Note that the revenue from this transaction fee will offset costs recovered through Market Services.	Unbundled Grid Management Charge, covering the following three services: 1. Market Service - costs related to the implementation and operation of the markets (allocated to gross absolute value of awarded MWh of energy and MW of AS in the forward and real-time markets) 2. System Operations - costs associated with reliably operating the grid by balancing supply and demand (allocated to scheduling coordinators gross absolute value of actual MWh of real-time energy flows). 3. CRR ²³ Services (applied to each scheduling coordinators total MW holdings of CRR that are applicable to each hour)	The percentage allocation for the three service categories is determined using a cost of service study, based on actual time incurred by ISO employees during a preceding year. For example, the latest study in 2015 Cost of Service Study is based on 2013 data. <u>Methodology: Using activity-based costing</u> <ul style="list-style-type: none"> • Identify different processes and activities based on CAISO's core business functions, and assigned the relevant costs/hours into either the three identified service categories or as indirect costs. • Calculate percentage allocation for direct costs for each service category • Indirect costs allocated as a

²³ CRR (Congestion revenue rights) are financial instruments that enable CRR holders to manage variability in congestion costs based on locational marginal pricing.

Market	Registration fee	Annual Membership fee	Variable fees	Summary of Methodology
			In addition, there are fixed fees per: <ul style="list-style-type: none"> • Bid segment • Inter-SC trade • CRR Auction Bid • Per MWh of deviations for the Energy Imbalance Market • per MWh of Transmission Ownership Rights 	percentage of direct costs.
NZ ²⁴	No.	No.	Unbundled rate, to recover the costs of providing the following services: <ul style="list-style-type: none"> • Common quality operations (charged per MWh to generators, purchasers and distributors) • Market operations (charged per MWh to generators and purchasers) • Registry and consumer operations (charged to retailers and distributor per consumer that each is responsible for) • Supply reliability operations (charged per MWh to purchasers) • Transmission operations (charged per MWh to System Operator) • Electricity efficiency operations (charged per MWh to purchasers) • Consumer participation operations (charged to retailers per consumer) 	The following principles are adopted in determining the levy structure. <ul style="list-style-type: none"> • Economic efficiency – the levy should promote efficient market behaviour • User/causer pays – where the costs are identifiable, levies should be based on who causes the costs • Rationality – there should be a logical nexus between participants and the costs imposed on them • Simplicity – the levy structure should not create undue transaction costs, and should be transparent • Equity – users in similar situations should be treated similarly, and • Revenue sufficiency – the levies need to be sufficient to recover the costs.
AEMO	Yes. Between AUD\$2,000 and AUD\$20,000 depending on type of MP. ²⁵	No.	AEMO's revenue requirement is allocated as follows:	First, identify Direct Costs i.e. costs deemed to be direct, attributable costs to key NEM outputs (~70%) and Unallocatable Costs i.e. those that were indirect costs allocated to the NEM function (~30%).

²⁴ <http://www.mbie.govt.nz/info-services/sectors-industries/energy/electricity-market/electricity-regulatory-framework/electricity-industry-regulations/electricity-industry-levy-of-industry-participants-regulations-2010>

²⁵ <https://www.aemo.com.au/-/media/Files/PDF/AEMO-FINAL-Electricity-Revenue-Requirement-and-Fee-Schedule-201617.pdf>

Market	Registration fee	Annual Membership fee	Variable fees	Summary of Methodology
			 <pre> graph TD A[NEM revenue Requirement] --> B[70% Direct costs] A --> C[30% Unallocated Costs] B --> D[54% Market Customers (MW-h based)] B --> E[46% Generators¹ and MNSPs (Capacity / Energy Based)] C --> F[Market Customers (MW-h based)] </pre> <p>¹ Excludes Non-Market Non-scheduled generators. Fees may vary between classes of generators.</p>	<p>Next, identify the key outputs and allocate the NEM direct costs to each of the separate outputs.</p> <p>Then, allocate direct costs based on a percentage allocation that is determined for each participant category (Market Customers/Generators and MNSPs) on the basis of involvement.</p> <p>Unallocatable Costs are allocated to market customers.</p> <p>For Incremental Service Fees - Where it is practical for AEMO to identify that it is doing something specific for a participant or another party, and that action causes additional identifiable and material costs for AEMO, AEMO will continue to seek to levy fees to recover the incremental costs incurred. E.g. Registration Fees.</p>

Annex 3: List of Services Provided by EMC to each MP on an Ongoing Basis

Department	Service
Market Administration	Nomination for RCP/TWG members
	Rules change work plan prioritisation exercise
	Clarification meetings for rule changes
	Update of MP's information
Market Operations	Data – Settlement results
	Trading Reports – Daily, weekly and monthly
	Additional settlement reports/notices which are not required by the market rules, such as the daily Trade Summary report, notice to MPs on corrected meter data submission by MSSSL, sending the USAP to MSSSL, etc
	Prudential monitoring reports and credit support advice
	MP Enquiry
	Settlement daily runs checks (including OCBC authorisation, AFPS and MSLC)
Information Technology	IT Helpdesk – Enquiries
	Service request management
	Incident logging and management
	UAT (MP) test environment booking (arising from MP's request)

Annex 4: List of Services Provided by EMC to each Facility on an Ongoing Basis

Department	Service
Market Operations	Standing Data – EMS components
	Standing Data – Quarterly failure probability
	Standing Data – Quarterly reserve provider group
	Data – Settlement results
	Trading Reports – Daily, weekly and monthly