

RCP PAPER NO. : **EMC/RCP/94/2017/CP65**

SUBJECT : **REVIEW OF MARKET PARTICIPANTS'
CLASSIFICATION AND RULES CHANGE PANEL'S
COMPOSITION**

FOR : **DECISION**

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Executive Summary

This paper reviews the classification of market participants (MPs) and the composition of the rules change panel (RCP) in the Singapore Wholesale Electricity Market (SWEM). The proposers highlighted that the growing diversity of MPs in the SWEM calls for the need to review their classification, as well as their representation on the RCP.

Firstly, the paper clarifies that the MPs' classes are aligned with the MPs' licence type, and that there are currently no Market Rules that apply specifically to any sub-type of the existing MP classes. EMC hence recommends no change to the MPs' classification. Next, the paper recaps how the governance arrangement complements the representation model to achieve the desirable characteristics of a RCP, and also studies the equivalents of the RCP in other jurisdictions. Observations from the study support our recommendations to not deviate from the current version of the representation model, as well as to retain the current composition of the RCP, after our assessment of the four issues raised by the stakeholders.

At the 94th RCP meeting, the RCP unanimously:

- a) **do not support** dedicating a seat on the RCP for an independent retailer representative (Issue 1);
- b) **do not support** dedicating a seat on the RCP for a person experienced in electricity futures market trading and/or a forward sales contract (FSC) holder representative (Issue 2);
- c) **do not support** changing the wholesaler traders' representation on the RCP (Issue 3); and
- d) **support** reviewing the eligible nominees and nominating organisations for consumer representatives on the RCP (Issue 4).

1. Introduction

This paper reviews the classification of market participants (MPs) and the composition of the rules change panel (RCP) in the Singapore Wholesale Electricity Market (SWEM).

The proposers highlighted that the growing diversity of MPs in the SWEM calls for the need to review their classification, as well as their representation on the RCP. In particular, with the recent surge in the number of independent retailers (non-generation affiliated retailers) registered as MPs, it was proposed to include a dedicated seat on the RCP for an independent retailer representative. Further, with the inception of the electricity futures market in April 2015, there were proposals to include a dedicated seat on the RCP for a member experienced in electricity futures market trading and/or a forward sales contract (FSC) holder. During the RCP work plan prioritisation exercise 2016, some stakeholders also raised their concerns with the current representation of wholesale traders and consumers on the RCP.

2. Background

2.1 Current MP's Classification

According to Chapter 2 Section 2.1.1 of the Market Rules, MPs are classified into four classes as follows:

1. **Generation licensee** class of MPs, comprising of all MPs who are generation licensees
2. **Retail electricity licensee** class of MPs, comprising of all MPs who are retail electricity licensees
3. **Wholesale trader** class of MPs, comprising of all MPs (other than generation licensees, retail electricity licensees and transmission licensees) that either have been granted an electricity licence permitting them to trade in the wholesale electricity market or are exempt by an order from the obligation to hold such an electricity licence
4. **Transmission licensee** class of MPs, comprising of all MPs who are transmission licensees

Table 1 summarises the primary activities of the four MPs' classes.

Table 1: Primary Activities of MPs' Classes

Class of MPs	Primary Activities
Generation licensee	Generate electricity for sale
Retail electricity licensee	Retail electricity to contestable consumers
Wholesale trader	Generate or purchase electricity for self-consumption Provide interruptible load and demand response services
Transmission licensee	Transmit electricity

Please refer to **Annex 1** for the activities that MPs can engage in based on their class and/or licence.

2.2 Current RCP's Composition

The RCP is the key decision-making body for rule changes. The objective of the RCP is to **fairly represent the often-competing interests of stakeholders** without a single group being able to dominate the voting process¹, and also to **tap on the expertise of stakeholders** for assessing rule changes.

According to Chapter 3 Section 2.3.1 of the Market Rules, the RCP comprises of 15 members as follows:

- The Chief Executive of the Energy Market Company (EMC) (Chair of the RCP)
- One employee of the EMC not being the Chief Executive
- One representative of the Power System Operator (PSO)
- Three representatives of the generation licensee class of MPs
- One representative of the transmission licensee (TL) class of MPs
- Three representatives of the retail electricity licensee class of MPs
- One representative of market support services licensees (MSSLs)
- One representative of the wholesale trader class of MPs
- One person who is experienced in financial matters in Singapore
- Two persons to represent the interests of the consumers of electricity in Singapore generally

Desirable Characteristics of a RCP

To fulfil and promote the objectives of the Market Rules, it is desirable to create a RCP that:

- (a) Represents the correct set of stakeholders;
- (b) Has the required level and range of expertise;
- (c) Is of a size that is conducive to effective decision-making;
- (d) Does not result in decision-making that seeks to advantage or disadvantage any particular group of MPs, or individual MPs;
- (e) Does not result in decision-making that seeks to advantage incumbents or any other particular interest group;
- (f) Results in decision-making that is consistent with the overall goal of an efficient competitive and reliable marketplace; and
- (g) Protects the interest of consumers.

Governance Arrangement

In practice, it may be difficult to meet the conditions (d), (e), (f) and (g) of a desirable RCP. For instance, the following decisions would require subjective assessment:

1. What is the right number of votes to be given to sellers (gencos, wholesale traders) and buyers (retailers, wholesale traders)?
2. Is a generation affiliated retailer a seller or a buyer?

¹ Decisions are made by majority vote (where each members is entitled to one vote except for the Chair of the RCP who has no vote), subject to a quorum (majority of appointed members) being present.

3. What should be the balance of voting power between traders (gencos, retailers, wholesale traders) and service providers (EMC, MSSL, PSO, TL)?

To overcome this difficulty, the Market Rules have in place a governance arrangement which **vests the EMC Board and the Energy Market Authority (EMA) with the power, under defined circumstances, to reject recommendations of the RCP.** The governance arrangement is encapsulated in the flowchart below.

The RCP recommends changes to Market Rules

The RCP's role is to consider amendments to the rules, contributing the views of a wide variety of stakeholders to the process. It is the only stakeholder representative body and its composition reflects the stakeholders of the SWEM, with representation from generators, retailers, consumers and all service providers.

Section 5.11.1 of Chapter 3 requires the RCP to consider the functions of the EMA in subsection 3(3) of the Electricity Act where they relate to operation of the wholesale electricity market and reliable operation of the power system.



The EMC Board considers RCP's recommendations

The EMC Board's role is to consider recommendations of the RCP. It may override the RCP's recommendations for defined reasons. The rules effectively give the EMC Board the role of ensuring that the market continues to operate efficiently and effectively in an unbiased manner.

Section 5.11.1 of Chapter 3 requires the EMC Board to consider the functions of the EMA in subsection 3(3) of the Electricity Act where they relate to operation of the wholesale electricity market and reliable operation of the power system.



The EMA considers the EMC Board's recommendations

Finally, the existing governance arrangement relies on the EMA to ensure that no change to the market rules introduces biasness, or is inconsistent with the functions of the EMA.

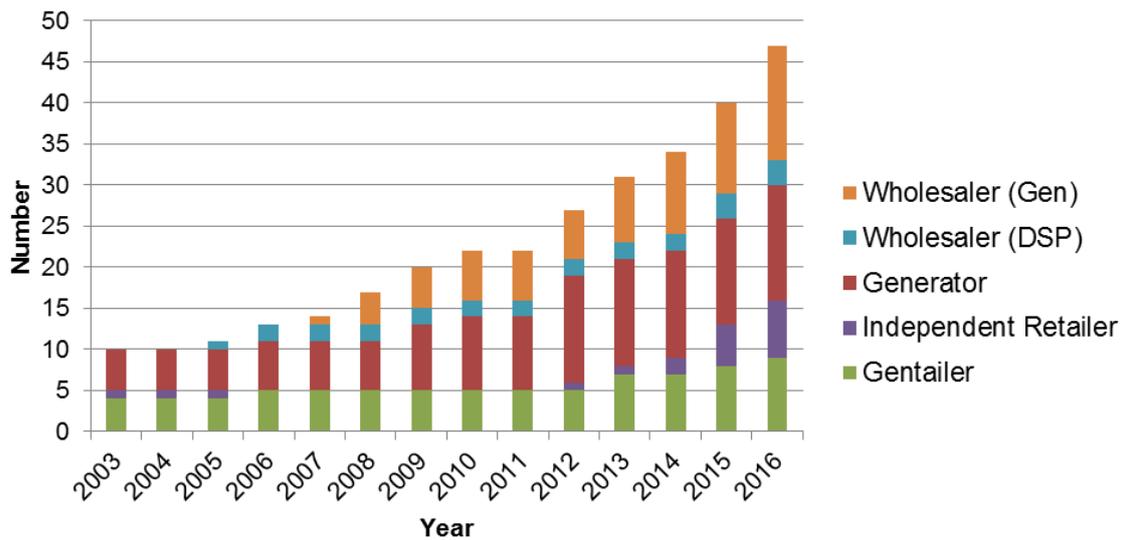
Representation Model

With the governance arrangement in place, the RCP's composition is hence designed to meet conditions (a), (b) and (c) of a desirable RCP. With all classes of MPs and service providers represented, the Panel, conducive for decision-making, is termed as the "representation model".

2.3 Composition of MPs in the SWEM

In recent years, there has been a surge in the number of wholesale traders and retailers registered in SWEM, driven by wholesale (generation) traders and independent retailers² respectively, as shown in Figure 1 below.

² MPs in the retail electricity licensee class are considered independent retailers in a particular year when none of their affiliated companies is an MP in the generation licensee class or an MP that hold the wholesale (generation) trader licence in the same year. Please refer to **Annex 2** for the list of retailers.

Figure 1: Number of MPs registered in the SWEM since market start (as of 1 Jan 2017)

3. Analysis

Review of MPs' Classification

MPs' classes defined in the Market Rules are aligned with licensee types, in line with legislations of higher hierarchy such as the Act, exemption orders and licences. Changing the MPs' classification in the Market Rules thus risks misalignment with the rest of the regulatory framework. Further, there are currently no Market Rules that apply specifically to any sub-type of the existing licensee types or MP classes

There is no impetus to modify the MPs' classification at this juncture. Only if EMA were to introduce new licensee types, would there be a need to consider changing the MPs' classification in the Market Rules to align with the new licensee types.

Therefore, EMC **recommends no change to the MPs' classification.**

Review of RCP's Composition

This section considers whether the representation model needs to be changed, studies the equivalents of the RCP in other jurisdictions, before examining the following issues:

- **Issue 1:** Should the RCP include a dedicated seat for an independent retailer representative?
- **Issue 2:** Should the RCP include a dedicated seat for a member experienced in electricity futures market trading and/or a forward sales contract (FSC) holder representative?
- **Issue 3:** Wholesale traders' representation on the RCP
- **Issue 4:** Consumers' representation on the RCP

3.1 Should the Representation Model be reconsidered?

Given the important role of the RCP in the SWEM, a change to its membership model could have profound impact on the evolution of the SWEM. Hence, there must be compelling reasons for any change to be proposed.

We consider that the following conditions qualify as compelling reasons for reconsidering the representation model:

1. The number of classes of stakeholders has increased such that full representation becomes infeasible;
2. The rules change process has proven to be inefficient;
3. The voting process in the RCP has proven to be compromised by collusion; or
4. A significant number of recommendations made by the RCP have been inconsistent with the objects of the Market Rules.

In our view, conditions 1 through 4 do not exist in the SWEM. On the contrary, the RCP has made notable achievements in enhancing the efficiency of the wholesale market from 2003 to 2017. In these years, out of 149 rule changes supported by the RCP, only 1 was not adopted by the EMC Board and 6 were not approved by the EMA. The achievement in this period reflects an efficient and unbiased rules change process that benefited the SWEM.

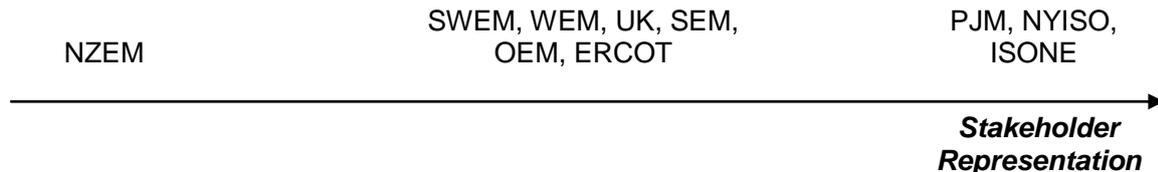
In addition, our study of the equivalents of the RCP in other jurisdictions reveals that almost all of them adopt the representation model.

Therefore, we do not find that there is any compelling reason to deviate from the existing model of the RCP.

3.2 RCP Equivalents in Other Jurisdictions

In the markets studied³, the RCP equivalents fall into three broad levels of stakeholder representation as illustrated by Figure 2.

Figure 2: Stakeholder representation in the RCP equivalent of each market



The RCP equivalents of all the markets, except for the NZEM⁴, adopt the representation model. In most of the US ISOs⁵ however, PJM, NYISO and ISONE in particular, they value stakeholder representation to the extent that each market participant can have a representative on the relevant committees. We recognise that the corresponding increase in the size of the committees could risk compromising on the effectiveness of the committees' performance. Hence, as established in Section 3.1, we will not deviate from the existing version of the representation model of the RCP.

The general observation is that some of the markets, namely UK, SEM and OEM, give their oversight entities the discretion to introduce the representation of future new classes of MPs on the panels or committees. However, we are of the view that it is not necessary to introduce seats

³ The markets studied include New Zealand Electricity Market (NZEM), Wholesale Electricity Market in Western Australia (WEM), Great Britain Electricity Wholesale Market in United Kingdom (UK), Single Electricity Market in Ireland & Northern Ireland (SEM), Ontario Electricity Market in Ontario, Canada (OEM), and the Independent System Operators in the United States (US ISOs). Please refer to **Annex 3** for details of the RCP equivalents in the markets studied, except for the US ISOs.

⁴ The RCP equivalent in the NZEM does not adopt the representation model as its members are not specifically appointed to represent any stakeholder classes, but are appointed against published membership criteria to collectively achieve a balanced membership across stakeholders and interest groups.

⁵ The US ISOs studied include Pennsylvania New-Jersey & Maryland (PJM), New York ISO (NYISO), ISO New England (ISONE) and Electric Reliability Council of Texas (ERCOT). Please refer to **Annex 4** for details of the RCP equivalents in the US ISOs studied.

on the RCP for ambiguous classes of MPs in advance. Should the need arise in future, a rule change can be made then.

For other observations of the RCP relevant to the four issues examined in the following section, they have been included in their respective analyses.

3.3 Issues Raised

In this section, we examine the four issues that have been raised in relation to this proposal.

3.3.1 Issue 1: Should the RCP include a dedicated seat for an independent retailer representative?

Currently, the three retailer representatives on the RCP, appointed by the EMC Board, were nominated by gentailers (generation affiliated retailers).

As per Section 2.3 of this paper, the number of independent retailers (non-generation affiliated retailers) registered as MPs increased from 1 in 2012 to 7 in 2016. It was hence proposed for the RCP to include a dedicated seat for an independent retailer representative, either within or in addition to the existing three seats for retailer representatives.

Table 2 summarises the arguments for and against including a dedicated seat for an independent retailer representative on the RCP.

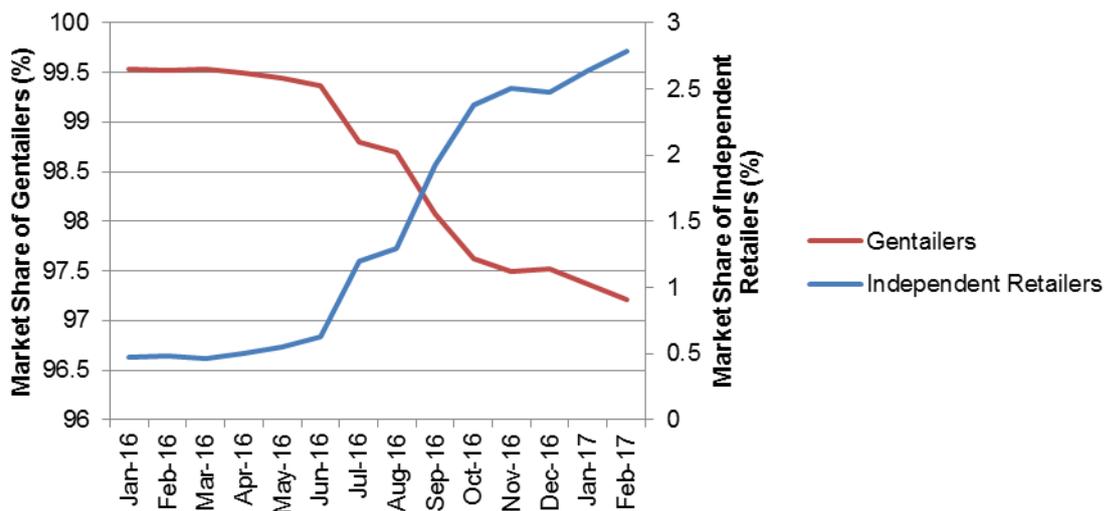
Table 2: Analysis of Issue 1

Arguments For	Arguments Against
<p>1. Increasing number of independent retailers registered as MPs justifies having an independent retailer representative on the RCP.</p> <p>An examination of the trend in the past year has shown that the increase in market share has been substantial as shown in Figure 3 below. With full retail contestability, independent retailers could rapidly gain traction in the retail market and the rising trend in the market share of independent retailers could be expected to continue.</p> <p>If appointment of nominees is based on the market share of the MPs who nominated them, despite the existing three seats for retailer representatives on the RCP, there could hardly be a chance for nominees of independent retailers to be appointed. Subsequent decision-making by the Panel could henceforth favour the incumbents and hinder competition in the market.</p>	<p>1. Representation on the RCP should not be based on the number of MPs in the category but based on the total market share of the category. The retail market share for independent retailers in 2016 remains low at 1.25%⁶. The impact of rule changes on independent retailers is hence less significant compared to gentailers.</p>

⁶ Source: EMC (Dec 2016). Private Monthly Trading Report, Figure 29: Retailers' Energy Market Share in Percentage for Year 2016 (Based on WEQ). Retrieved from: https://www.emcsg.com/f1526,119486/Private_Monthly_Trading_Report_-_Dec_2016.pdf

Arguments For	Arguments Against
<p>2. An independent retailer may have concerns and interests different from a gentailer.</p> <p>For instance, unlike a gentailer, an independent retailer does not have generation assets to serve as a natural hedge against spot price fluctuations and rely on other means for hedging, such as electricity futures or bilateral contracts with un-affiliated generators.</p>	<p>2. The difference between the concerns and interests of an independent retailer and that of a gentailer is not significant enough to warrant a seat on the RCP designated for an independent retailer representative.</p> <p>While their means for hedging may vary, their hedging tools are still largely dependent on the same underlying wholesale electricity price.</p>
	<p>3. The existing three seats for retailer representatives are sufficient to accommodate different business models and interests within the retailer class.</p> <p>Most of the other markets studied provide for multiple seats for retailer representatives on their panels and none of them makes the distinction between independent retailers and gentailers even though gentailers are prevalent in the markets as well.</p>

Figure 3: Retail Market Share (%) since Jan 2016⁷



EMC’s Assessment (Issue 1)

Regardless of the market share of independent retailers vis-à-vis gentailers, the existing arrangement already allows for the three most qualified candidates nominated by independent retailers and gentailers alike to be appointed on the Panel. Retailers should nominate highly qualified candidates to have higher chances of having their nominees appointed to the Panel.

⁷ Source: EMC (Jan 2016 – Feb 2017). Private Monthly Trading Reports, Figure 29: Retailers’ Energy Market Share in Percentage (Based on WEQ)

The existing three seats for retailer representatives are sufficient to accommodate varying business models and interests within the retailer class. Similarly, RCP equivalents of other jurisdictions provide for multiple retailer representatives, but make no such distinction between independent retailers and gentailers.

Therefore, we do not recommend prescribing the inclusion of an independent retailer representative within or in addition to the existing three seats on the RCP.

3.3.2 Issue 2: Should the RCP include a dedicated seat for a member experienced in electricity futures market trading and/or a forward sales contract (FSC) holder representative?

The electricity futures market was launched in April 2015. Electricity futures are a financial product that allows buyers and sellers to trade electricity into the future. Electricity futures are listed on SGX in standard lot sizes and tenure.

FSC (Forward Sales Contract) is a scheme implemented by the EMA to facilitate liquidity in the futures market. The market makers appointed by the EMA are allocated FSC. The FSC is a Contract-For-Difference between the market makers and SP Services, the MSSL.

Market makers are entities that put up both “buy” and “sell” prices within a pre-determined price spread. By doing so, they provide price signals and liquidity in the market. These entities bear risks for providing liquidity to the market. In the Singapore electricity futures market, the market makers are awarded FSCs to provide them with financial certainty in return for them bearing these risks in meeting their market making obligations and the corresponding costs incurred.

There were proposals to include a dedicated seat on the RCP for a member experienced in electricity futures market trading and/or a forward sales contract (FSC) holder.

EMC’s Assessment (Issue 2)

The wholesale electricity market is operated by EMC and caters for spot trading whereas the electricity futures market is operated by SGX, separate from the wholesale electricity market. Furthermore, the settlement of the FSC settlement credit via SWEM had ceased for trading days after 6 July 2015.

Since both electricity futures and FSC are derivatives that have no direct impact on how the wholesale electricity market should function or operate, there is no justification in catering a seat on the RCP for such traders or holders.

3.3.3 Issue 3: Wholesale traders’ representation on the RCP

The current representative of wholesale traders on the RCP, appointed by the EMC Board, is nominated by a wholesale (demand side participation (DSP)) trader.

Since the last review of wholesale traders’ representation on the RCP in CP34, the number of wholesale traders registered as MPs has more than doubled from 8 in 2011 to 17 in 2016, as shown in Section 2.3 of this paper. This was contributed largely by wholesale (generation) traders, whose number increased from 6 to 14. Therefore, there are concerns with wholesale traders’ representation on the RCP.

Table 3 summarises the arguments for and against changing the current wholesale traders’ representation on the RCP.

Table 3: Analysis of Issue 3

Arguments For	Arguments Against
<p>1. Increasing number of wholesale (generation) traders registered as MPs justifies including a wholesale (generation) trader representative on the RCP, in addition to the existing seat for a wholesale trader representative taken by a wholesale (DSP) trader.</p>	<p>1. Representation on the RCP should not be based on the number of MPs in the category but based on the total market share of the category.</p> <p>As of 1 Jan 2017, while the number of wholesale trader MPs has doubled, the market share remains low for wholesale (generation) traders and wholesale (DSP) traders in energy (0.65%) and reserve (0.9%) markets respectively, based on the registered capacities of their facilities.</p> <p>The overall impact of rule changes on wholesale traders is hence small and does not justify more seats on the RCP for wholesale traders.</p>
<p>2. The concerns and interests of a wholesale (generation) trader differs from that of a wholesale (DSP) trader. A single wholesale trader representative is not able to represent the entire class.</p> <p>A wholesale (generation) trader trades in the market only for selling electricity from generators of nameplate capacity below 10MW, while a wholesale (DSP) trader does so only for providing interruptible load or dispatchable load services.</p>	<p>2. The varying interests within the wholesale trader class, inherently a residual class whose authorised activities are a subset of that of generator and retailer classes, should already be represented on the panel as a whole, by the generator and retailer representatives.</p>

EMC's Assessment (Issue 3)

The wholesale trader class in the SWEM is inherently a residual class to comprise of all MPs that are not generation, retail or transmission licensees. As the subclasses within the wholesale trader class may increase arising from EMA's decision to introduce new licence types, it is not reasonable to increase the number of wholesale traders' seats on the RCP on the basis of accommodating the different business models and interests within the class.

Moreover, the authorised activities of the wholesale trader class are a subset of that of the generator and retailer classes. If we consider the RCP as a whole, the varying interests within the wholesale trader class should already be represented to a certain extent by the generator and retailer representatives on the RCP. This is reflected by the RCP equivalents of most jurisdictions⁸ where there are seats for generator and retailer representatives, but no dedicated seats for equivalents of the wholesale (generation) trader subclass and/or the wholesale (DSP) trader subclass on the panels or committees at all.

⁸ The SEM and OEM are exceptions. The SEM dedicates a seat on its Panel for "Demand Side Participants", the equivalent of wholesale (DSP) traders in SWEM, and the OEM dedicates 3 to 5 seats for 3 constituencies, 1 of which is energy related businesses and services (e.g. electricity traders/wholesalers, aggregators), approximately the equivalent of the wholesale trader class in SWEM.

Therefore, we do not recommend changing the wholesale traders' representation on the RCP.

3.3.4 Issue 4: Consumers' representation on the RCP

Consumers' representation on the RCP was introduced on 1 Nov 2006 by RC 245. The 2 RCP members to represent the interests of consumers of electricity in Singapore are ideally organised such that:

- 1 person shall represent the small consumers of electricity in Singapore (Nominated by Consumer Association of Singapore (CASE)); and
- 1 person shall represent the large consumers of electricity in Singapore (Nominated by Singapore International Chamber of Commerce (SICC) or Association of Small & Medium Entreprises (ASME)).

However, since the resignation of the representative for large consumers on the RCP in April 2016, neither SICC nor ASME submitted nominations for a replacement. The seat for the representative for large consumers is hence left vacant.

EMC's Assessment (Issue 4)

With no nominations received from the approved nominating organisations for the vacant consumer representative seat, we find it timely to review the eligible nominees and nominating organisations for consumer representatives on the RCP.

4. Consultation

The concept paper was published for industry consultation on 24 February 2017, and comments were received from 8 stakeholders, namely Buri Energy, Keppel, PacificLight, Red Dot Power, Tuas Power, Tuaspring, PSO and Senoko Energy. The comments are grouped by topic and provided verbatim together with EMC's responses in Table 4 below.

Table 4: Comments Received from Consultation

Comments from:	Comments	EMC's response
General Comments		
Buri Energy	Singapore's electricity market has evolved significantly since the last Rules Change Panel composition review in 2011 (where the Panel did not support making changes to the representation), with the introduction of demand response, electricity futures market, and increasing participation of solar players. As such, we feel there is a sufficient reason to revisit the current RCP structure that can effectively assess the impact of such developments in the Singapore Wholesale Electricity Market (SWEM). This runs contrary to the conclusion that the current representation model does not need to be reconsidered.	Other than the reasons provided in section 3.1 of the paper, our review of the RCP equivalents in other markets reveals that almost all of them adopt the representation model as well. Thus, we do not find any strong justification to deviate from the existing representation model.

Comments from:	Comments	EMC's response
	<p>We recognize efforts to examine other jurisdictions, but take the view that more analysis can be made in drawing best practices from these jurisdictions. The paper aptly points out that some markets have provided for channels to ensure that the expertise of new types of market participants are introduced to the Panels as these markets develop. The paper can delve further into examining the evolution of their Panel compositions, changes to the nomination processes, background of new expertise nominated, and evaluate whether these can be applied in Singapore's context.</p> <p>With the market evolving more rapidly, we believe that there is room for the Panel composition to take on a more forward-looking stance. This can be done in a few ways, such having more regular reviews of the RCP composition (e.g. every 3 years and aligned with the Panel term) or incorporating requirements that each member should have a wider range of expertise. Another approach could be to consider the NZEM model where members (regardless of Market Participant class) collectively have relevant experience to provide independent advice on the market, and are supported by a few advisory groups with different focus areas. We believe that this model not only best serves the current Singapore market, but is also primed for future market developments.</p> <p>In our opinion, the paper as it stands does not adequately address the 4 issues identified, both in terms of each issue itself and of the underlying spirit that these rule change suggestions were meant to address.</p>	<p>We note that some markets (UK, SEM & OEM) give their oversight entities the discretion to introduce the representation of future new classes of MPs on the panels or committees. Please refer to Annex 3 – Panel's Composition for more details.</p> <p>However, we are of the view that it is not necessary to introduce seats on the RCP for ambiguous classes of MPs in advance. Should the need arise in future, a rule change can be made then.</p> <p>The current Market Rules already allow the RCP to establish working groups should such a necessity for expertise arise.</p>
PacificLight	We agree with EMC's conclusion that there is no compelling reason to deviate from the existing composition of the RCP as the current framework is effective and works well.	PacificLight's support for the existing RCP's composition is noted.
PSO	As the market matures, it is timely that we review the composition of the RCP since the number of rule changes implemented has decreased over the years.	PSO's support for the review is noted.
MPs' Classification		

Comments from:	Comments	EMC's response
Tuaspring	Tuaspring supports EMC's recommendations and stance on the subjects of reviewing classifications of MPs, and issues 2 & 4 on the matter of RCP composition.	Tuaspring's support for EMC's recommendations is noted.
Issue 1: Independent Retailer		
Buri Energy	Issue 1 argues that as hedging tools are still dependent on the underlying wholesale electricity price, the independent retailer's interest do not differ significantly from that of a gentailer to warrant a separate seat on the RCP. On the contrary, the wholesale electricity price has implications beyond the SWEM, such as hedging on the futures market, and eventually, household electricity pricing with full retail contestability. This highlights the importance of including members with such expertise on the Panel to more effectively consider the impact of Market Rules changes on the wider market.	We note the support of Buri Energy and Tuaspring for including a dedicated seat for an independent retailer representative on the RCP as independent retailers have interests different from gentailers. However, none of the markets studied makes the distinction between independent retailers and gentailers in their RCP equivalents, even though gentailers are prevalent in the markets as well.
Tuaspring	With respect to issue 1, though there was a significant increase in number of independent retailers (IRs) in the last 5 years, and while noting that IRs' considerations may be different from incumbent gentailers, the overall retail market has not grown significantly over the same period and the combined retail market share of IRs remain low. This does not justify an increase in RCP size to accommodate representation of IRs. We would instead be supportive for 1 of the 3 seats meant for retailers to be given priority to nomination by IRs.	Our view is that the current provision for three retailer representatives is sufficient to accommodate representative(s) from independent retailers, provided that nominees nominated by independent retailers are within the three most qualified nominees in the retailer class.
PacificLight	PacificLight agrees with the arguments made by EMC against inclusion of an independent representative on the RCP and believe that these are valid justifications to maintain the current RCP composition. Any retailer representative who sits on the RCP is required to have the necessary range of expertise and understanding of the market and ensure that the needs of all retailers are met.	PacificLight's support for the arguments against including a dedicated seat for an independent retailer representative on the RCP is noted.
Red Dot Power	Over the past few years since the electricity retail sector is liberalised by EMA, there has been a significant activity in the retail sector with the many independent retailers registering as MPs. The natural benefit of this is the consumer in Singapore who are seeing a significant lowering of electricity tariffs offered by independent retailers in relation to	

Comments from:	Comments	EMC's response
	<p>the regulated tariff levels. The entry of independent retailers has unshackled the monopoly market power that was exercised by the gentailers before. With this background, Red Dot Power makes the following case for inclusion of independent retailer representative on the RCP:</p> <p>Currently 6 members on the RCP represent generators (3) and their gentailers (3) That is a significant market power out of the 14 votes at about 43%. Since the decisions at the RCP are made by majority vote (excluding the Chair of RCP who has no vote) and subject to a quorum which is majority of members, it is very obvious to see the dominating interest of generators and gentailers in this current composition of RCP.</p> <p>The market share of the independent retailers is almost touching 4% which is significant considering it was almost nil just two years back. To say that impact of rule changes on independent retailers is less significant compared to gentailers has no basis, as ultimately it is the service that independent retailers are providing to consumers in Singapore and that such service at a competitive pricing does gets impacted with any rule changes where the voice of independent retailers is not factored.</p> <p>Independent retailers, especially Red Dot Power, is able to bring to the market an integrated energy solutions approach that includes NOT just retail supply BUT demand management, solar and storage aspects. This approach is totally new to the market and has never been offered by incumbent gentailers to the consumers in Singapore. Thus representative of the independent retailers bring to the RCP a different perspective of market and business models which is not possible with traditional gentailers.</p> <p>The independent retailers do not have the luxury of bilateral hedging deals that gentailers enjoy with their generation parent potentially at a price that is much lower than what independent retailers can get from Electricity Futures. Effectively, there is no level playing field. To consider this in-house hedge arrangement between the gentailers and their generation counterpart as largely dependent on the same underlying wholesale</p>	<p>We will consider the substantial increase in the market share of independent retailers in the past year in our arguments for the inclusion of a dedicated seat for an independent retailer representative on the RCP.</p> <p>The broad expertise that can be provided from retailer representatives is not exclusive to independent retailer representatives.</p>

Comments from:	Comments	EMC's response
	<p>electricity price is a myth. The experience of Red Dot Power when approached to generators for a hedge instrument is not even worth mentioning and defies all pricing logic.</p> <p>Considering above, Red Dot Power who currently holds the #1 market share position amongst the independent retailers @1.6% strongly recommend to include the independent retailer representative on the RCP.</p>	
Keppel	<p>While it is true that the number of independent retailers have been increasing, their total retail market share remains fairly low at only 1.25%. Including an independent retailer representative on the RCP, either within or in addition to the existing 3 seats for retailer representatives, would effectively give independent retailers 25-33% of the retailer representative vote. Such allocation of seats is grossly disproportionate to the actual size of the market participants and would result in a misrepresentation of stakeholders in the RCP.</p>	<p>We acknowledge the arguments of Keppel, PSO, Tuas Power and Senoko Energy against dedicating a seat for independent retailer representatives on the RCP:</p> <ul style="list-style-type: none"> • Low market share (Keppel, PSO) • Different concerns and interests between sub-classes within the retailer class is not a justification (Tuas Power)
Tuas Power	<p>Given that there is no sub-category of the existing MP class in the market rules to differentiate retail electricity licensee between a gentailer or an independent retailer, there should not be a differentiation in retailer representation in the RCP as well.</p> <p>Independent retailers having different concerns and interests from gentailers should not be the justification to set up a seat specially for this group of retailers on the RCP.</p> <p>Otherwise, we would also have to consider different categories of consumers from the different industries, which is not practical.</p>	<ul style="list-style-type: none"> • Independent retailer rep can already be appointed within the three existing retailer reps seats (Senoko Energy)
PSO	<p>Agree that the market share of independent retailer does not warrant representation in the RCP.</p>	
Senoko Energy	<p>The rules relating to composition of the RCP enable up to three members to represent the retail electricity license class. There is currently no impediment for one or more of these members to originate from an unaffiliated retail licensee. As such, the rules do not need to be changed to accommodate representation from an "independent retailer".</p>	

Comments from:	Comments	EMC's response
Issue 2: FSC Holder / Futures		
Keppel	Keppel agrees with EMC's assessment that there is no justification in catering a seat on the RCP for electricity futures traders or FSC contract holders.	EMC notes the support of Keppel, PSO, Tuaspring and Senoko Energy for status quo i.e. <u>not</u> including a seat on the RCP for a member experienced in electricity futures market trading and a FSC holder.
PSO	Agree that the futures market is operated by the SGX and it should not be represented in the RCP.	
Senoko Energy	We agree with the analysis in the Concept Paper that concludes that there is no justification in catering a seat on the RCP for electricity futures traders or FSC holders. Incidentally, to the extent that electricity futures trading becomes widespread amongst the licensee community, we can expect that the RCP's understanding of electricity futures market will reflect this.	
Tuaspring	Tuaspring supports EMC's recommendations and stance on the subjects of reviewing classifications of MPs, and issues 2 & 4 on the matter of RCP composition.	
Issue 3: Wholesaler		
Tuaspring	On issue 3, similarly we do not agree with increasing RCP size to accommodate representation from wholesale (generation) traders while their overall contribution to the market supply is low.	EMC notes the consensus among Tuaspring, Keppel, PSO and Senoko Energy on maintaining the number of seats for wholesale traders at status quo i.e. 1.
Keppel	The current wholesale traders' representation on the RCP should not be changed. As the EMC has rightfully pointed out, the market share for wholesale trader MPs remain low despite the increase in numbers. It would be misguided to allocate more seats to wholesale traders as this would result in a more unfair distribution of seats in the RCP, in which the wholesale traders get a far greater say in decision-making processes at the expense of diluting the voting power of other stakeholders.	
PSO	Suggest to rotate the rep of the Wholesale Trader class so that the Rules Change Panel can better handle issues on DR and IGS.	
Senoko Energy	The rules relating to composition of the RCP enable a member to represent the wholesale trader class. There is currently no impediment for that member to originate from a wholesale (generation) trader. As such, the rules do not need to be changed to accommodate	

Comments from:	Comments	EMC's response
	representation from a wholesale (generation) trader.	
Issue 4: Consumer		
Tuaspring	Tuaspring supports EMC's recommendations and stance on the subjects of reviewing classifications of MPs, and issues 2 & 4 on the matter of RCP composition.	EMC notes the support of Tuaspring and PSO for reviewing who we can solicit consumer representative nominees from.
PSO	For EMC to solicit new representative of the large consumers.	

5. Conclusion

The paper reviews the current MPs' classification and the RCP's composition, in light of the growing diversity of MPs in the SWEM.

For the MPs' classification, we do not recommend for any changes at this juncture because the MPs' classification is aligned with the rest of the regulatory framework, and there are currently no Market Rules that specifically apply to any sub-type of the existing MP classes.

For the RCP's composition, observations from the RCP equivalents in other jurisdictions support our following recommendations. Firstly, we do not recommend for any deviation from the current version of the representation model of the RCP because conditions that qualify as compelling reasons for reconsidering the representation model do not exist in the SWEM. Next, in addressing the four issues raised by stakeholders, we find that there is no strong justification to change the current RCP's composition due to the following reasons:

- The existing three seats for retailer representatives are sufficient to accommodate varying business models and interests within the retailer category (Issue 1)
- Both electricity futures and FSC are derivatives that have no direct impact on how the wholesale electricity market should function or operate (Issue 2)
- The varying interests within the wholesale trader class, inherently a residual class whose authorised activities are a subset of that of generator and retailer classes, should already be represented on the panel as a whole (Issue 3)

Finally, for Issue 4, with no nominations received from the approved nominating organisations for the vacant consumer representative seat, we recommend for a review of the eligible nominees and nominating organisations for consumer representatives on the RCP.

6. Recommendation

EMC recommends that the RCP:

- a) **do not support** dedicating a seat on the RCP for an independent retailer representative (Issue 1);
- b) **do not support** dedicating a seat on the RCP for a person experienced in electricity futures market trading and/or a forward sales contract (FSC) holder representative (Issue 2);
- c) **do not support** changing the wholesale trader representation on the RCP (Issue 3); and
- d) **support** reviewing the eligible nominees and nominating organisations for consumer representatives on the RCP (Issue 4).

7. Deliberation at the 94th RCP Meeting

At its 94th meeting, the RCP unanimously:

- a) **do not support** dedicating a seat on the RCP for an independent retailer representative (Issue 1);
- b) **do not support** dedicating a seat on the RCP for a person experienced in electricity futures market trading and/or a forward sales contract (FSC) holder representative (Issue 2);
- c) **do not support** changing the wholesale trader representation on the RCP (Issue 3); and
- d) **support** reviewing the eligible nominees and nominating organisations for consumer representatives on the RCP (Issue 4).

The review of the eligible nominees and nominating organisations for consumer representatives on the RCP (Issue 4) will be conducted in a separate concept paper.

Annex 1: Activities that MPs can engage in based on their class and/or licence

Class	Licence	Activities								
		Generate from generators of nameplate rating			Transmission	Retail	Trade			
		≥10MW	1MW≤x<10 MW	<1MW			Sell electricity from generators	Provide IL/DR services	Buy electricity for self-consumption	Others
Generation	Generation	Yes	Yes	Yes			Yes	Yes	Yes	Yes
Retail	Retail		Yes ^a	Yes ^a		Yes	Yes	Yes	Yes	Yes
Wholesaler	Wholesaler (Generation)		Yes ^a	Yes ^a			Yes (of nameplate rating <10MW ^b)		Yes ^c	
	Wholesaler (Demand Side Participation (DSP))			Yes ^a			Yes (of nameplate rating <1MW ^b)	Yes	Yes ^c	
	Exempted			Yes ^a			Yes (of nameplate rating <1MW ^b)		Yes ^c	
Transmission	Transmission				Yes					

a: Exempted from Generation Licence by exemption order Electricity (Electricity Generation Licence) (Exemption) (No. 2) Order 2003

b: Exempted from Trading Licence by exemption order Electricity (Electricity Trading Licence) (Exemption) Order 2010

c: Exempted from Trading Licence by exemption order Electricity (Electricity Trading Licence) (Exemption) Order 2009

Annex 2: List of Registered Retailers in SWEM (as at 20 Feb 2017)

No.	Current Registered Retailer	Classification	Affiliated Genco (if any)	Year that MP registration took effect
1	Keppel Electric Pte Ltd	Gentailer	Keppel Merlimau Cogen Pte Ltd	2003 ⁹
2	Sembcorp Power Pte Ltd	Gentailer	Sembcorp Cogen Pte Ltd	2003
3	Senoko Energy Supply Pte Ltd	Gentailer	Senoko Energy Pte Ltd	2003
4	Seraya Energy Pte Ltd	Gentailer	YTL PowerSeraya Pte Ltd	2003
5	Tuas Power Supply Pte Ltd	Gentailer	Tuas Power Generation Pte Ltd	2003
6	Diamond Energy Merchants Pte Ltd	Independent Retailer		2012
7	PacificLight Energy Pte Ltd	Gentailer	PacificLight Power Pte Ltd	2013
8	Hyflux Energy Pte Ltd	Gentailer	Tuaspring Pte Ltd	2013
9	Red Dot Power Pte Ltd	Independent Retailer		2014
10	Buri Energy Pte Ltd	Independent Retailer		2015
11	Sun Electric Power Pte Ltd	Gentailer	Sun Electric Energy Assets	2015 ¹⁰
12	Sunseap Energy Pte Ltd	Gentailer	Sunseap Leasing	2015
13	Best Electricity Supply Pte Ltd	Independent Retailer		2015
14	I Switch Pte Ltd.	Independent Retailer		2016
15	Charis Electric Pte Ltd	Independent Retailer		2016
16	Environmental Solutions Asia Pte Ltd	Independent Retailer		2016
17	Union Power Pte Ltd	Independent Retailer		2017

⁹ Keppel Electric is considered an independent retailer between 2003 and 2005, until its affiliated generation company, Keppel Merlimau Cogen, registered in 2006.

¹⁰ Sun Electric Power is considered an independent retailer in 2015, until its affiliated generation company, Sun Electric Energy Assets, registered in 2016.

Annex 3: Rules Change Panel Equivalents in Other Jurisdictions

Country / Region	Singapore	New Zealand	Western Australia	UK	Ireland & Northern Ireland	Canada, Ontario
Market	Singapore Wholesale Electricity Market (SWEM)	New Zealand Electricity Market (NZEM) ¹¹	Wholesale Electricity Market (WEM) ¹²	Great Britain (GB) Electricity Wholesale Market ¹³	Single Electricity Market (SEM) ¹⁴	Ontario Electricity Market (OEM) ¹⁵
Market Operator	Energy Market Company (EMC)	NZX (Clearing/ Pricing/ Reconciliation Manager) Transpower (FTR Manager, System Operator) Jade Software Corporation (Registry Manager)	Australian Energy Market Operator (AEMO)	ELEXON	Single Electricity Market Operator (SEMO)	Independent Electricity System Operator (IESO) (also System Operator)
Regulatory Documents (Underlined - panel's ambit)	<ul style="list-style-type: none"> Electricity Act Electricity Licences Transmission Code <u>Market Rules</u> <u>Market Manuals</u> Other Codes 	<ul style="list-style-type: none"> Electricity Industry Act 2010 <u>Electricity Industry Participation Code</u> 	<ul style="list-style-type: none"> Electricity Industry Act 2004 Electricity Industry (Wholesale Electricity Market (WEM)) Regulations 2004 <u>WEM Rules</u> <u>Market Procedures</u> 	<ul style="list-style-type: none"> Electricity Act 1989 Industry Codes (including <u>Balancing & Settlement Code (BSC)</u>) Licences Standards 	<ul style="list-style-type: none"> Electricity Regulation Act 1999 (Ireland) Electricity Regulation (Amendment) (Single Electricity Market) Act 2007 <u>Market Rules</u> (including Trading) 	<ul style="list-style-type: none"> Electricity Act 1998 <u>Market Rules</u>

¹¹ EA (2013). Terms of Reference for the WAG. Retrieved from: <https://www.ea.govt.nz/dmsdocument/10323>. EA (2013). Terms of Reference for the RAG. Retrieved from: <https://www.ea.govt.nz/dmsdocument/10325>.

¹² IMO (2016). 2016 Market Advisory Committee Constitution and Appointment Guidelines: Final Report. Retrieved from: <https://www.aemo.com.au/media/docs/default-source/default-document-library/2016-final-reportf6a0.pdf?sfvrsn=0>

¹³ ELEXON (2016, 2017). BSC Section B: The Panel and Section F: Modification Procedures. Retrieved from: <https://www.elexon.co.uk/bsc-related-documents/balancing-settlement-code/bsc-sections/>

¹⁴ SEM (2015). TSC, Section 2.15. Retrieved from: <http://www.sem-o.com/MarketDevelopment/Pages/MarketRules.aspx>

¹⁵ IESO (2016). Technical Panel to the IESO Board of Directors, Terms of Reference. Retrieved from: <http://www.ieso.ca/Documents/tp/TP-Terms-of-Reference-New-FINAL-November-11-2016.pdf>

Country / Region	Singapore	New Zealand	Western Australia	UK	Ireland & Northern Ireland	Canada, Ontario
Market	Singapore Wholesale Electricity Market (SWEM)	New Zealand Electricity Market (NZEM) ¹¹	Wholesale Electricity Market (WEM) ¹²	Great Britain (GB) Electricity Wholesale Market ¹³	Single Electricity Market (SEM) ¹⁴	Ontario Electricity Market (OEM) ¹⁵
					& Settlement Code (TSC))	
Regulator(s)	Energy Market Authority (EMA)	Electricity Authority (EA)	Economic Regulation Authority (ERA)	Gas & Electricity Markets Authority (GEMA) ¹⁶	Commission for Energy Regulation (CER) in Ireland Utility Regulator for Northern Ireland (UREG, previously named NIAUR)	Ontario Energy Board (OEB)
Panel	Rules Change Panel (RCP) The RCP considers modification proposals and reports its recommendation to the Market Operator's Board which then recommends to the Regulator.	Wholesale Advisory Group (WAG) The WAG provides independent advice to the Regulator on the development of the Code.	Market Advisory Committee (MAC) The MAC advises the Rule Change Panel (RCP) within the Regulator on Rule / Procedure Change Proposals and matters concerning evolution of the Market Rules.	BSC Panel The BSC Panel considers Modification Proposals and, for Proposal considered to have material impacts, reports to the Regulator on its recommendation.	TSC Modifications Committee The TSC Modifications Committee makes recommendations on Modification Proposals to the Regulators.	Technical Panel (TP) The TP supports the Market / System Operator's Board in the development and consideration of amendments to the Market Rules.
Final Decision	Regulator	Regulator	RCP within the Regulator	Regulator or Panel ¹⁷	Regulators ¹⁸ (SEM Committee)	Market/ System Operator's Board (IESO Board), with

¹⁶ The Office of Gas and Electricity Markets (Ofgem) supports GEMA in its day to day work.

¹⁷ Where Modification Proposals are considered to have material impacts, the recommendation of the BSC Panel is considered by the Authority, who makes the ultimate determination if (and when) the change should be implemented. Modifications Proposals that will not have a material impact are considered only by the BSC Panel, who determines if (and when) the change should be implemented without reference to the Authority. Source: https://www.elexon.co.uk/wp-content/uploads/2016/09/bsc_self-governance_v1.0.pdf

¹⁸ For modifications to the Code (but not necessarily to the Agreed Procedures).

Country / Region	Singapore	New Zealand	Western Australia	UK	Ireland & Northern Ireland	Canada, Ontario
Market	Singapore Wholesale Electricity Market (SWEM)	New Zealand Electricity Market (NZEM) ¹¹	Wholesale Electricity Market (WEM) ¹²	Great Britain (GB) Electricity Wholesale Market ¹³	Single Electricity Market (SEM) ¹⁴	Ontario Electricity Market (OEM) ¹⁵
						Regulator (OEB) having veto power
Panel's Size (including Chairperson)	15 members	9 members	13 to 16 members	Up to 12 members	11 to 19 members	12 to 14 members
Panel's Chairperson	CEO of Market Operator	Independent ¹⁹ Chairperson	A person appointed by the chairperson of the RCP within the Regulator	A person nominated by the Panel, in consultation with Board, and approved by the Regulator	A voting member elected by the voting members of the Panel	CEO of the Market/ System Operator
Panel's Composition	<ul style="list-style-type: none"> • 3 representatives of the generation licensee class of MPs • 3 representatives of the retail electricity licensee class of MPs • 1 representative of the wholesale market trader class of MPs • 2 persons to represent the interests of the consumers of electricity in 	<p>The Regulator will appoint the members of each Advisory Group (AG) against published membership criteria.</p> <p>In making these appointments the Regulator will be seeking:</p> <p>(a) a balanced membership across stakeholders and interest groups</p> <p>(b) strategic,</p>	<ul style="list-style-type: none"> • 3 or 4 representatives of market generators (D)* • 3 or 4 representatives of market customers (D)* • 1 member representative of contestable consumers (D) • 1 representative of small-use consumers nominated by the Minister (D) 	<ul style="list-style-type: none"> • not more than 5 persons appointed by Trading Parties; (Industry) • not more than 2 persons appointed by Citizens Advice or Citizens Advice Scotland; (Consumers) • 1 person appointed by the Transmission Company; • not more than 2 persons appointed by the Panel 	<ul style="list-style-type: none"> • at least 3 members nominated by or elected in respect of Generation Participants* • at least 3 members nominated by or elected in respect of Supply Participants* • at least 1 member nominated by or elected in respect of Demand Side Participants; and 	<ul style="list-style-type: none"> • 7 core members representing MPs in the following categories: <ul style="list-style-type: none"> - Generators (2) - Retailers or wholesalers (1) - Consumers (1) - One other MP (1) (could be demand response or other future categories not yet defined) - Transmitters (1) - Distributors (1)

¹⁹ To qualify as an independent chairperson a nominee must, in the opinion of the Authority, be demonstrably free of conflicts of interest such as could arise from current involvement at a senior level in an industry participant organisation or with parties that act as advisors to such organisations.

Country / Region	Singapore	New Zealand	Western Australia	UK	Ireland & Northern Ireland	Canada, Ontario
Market	Singapore Wholesale Electricity Market (SWEM)	New Zealand Electricity Market (NZEM)¹¹	Wholesale Electricity Market (WEM)¹²	Great Britain (GB) Electricity Wholesale Market¹³	Single Electricity Market (SEM)¹⁴	Ontario Electricity Market (OEM)¹⁵
	<p>Singapore generally</p> <ul style="list-style-type: none"> • 1 representative of the transmission licensee (TL) class of MPs • 1 representative of the System Operator • 1 employee of the Market Operator, not being the CEO • 1 representative of market support services licensees (MSSLs) • 1 person who is experienced in financial matters in Singapore 	<p>commercial and regulatory expertise (c) knowledge and experience across the relevant component of the electricity supply chain (d) an ability to contribute effectively to the AG's tasks.</p>	<ul style="list-style-type: none"> • 1 or 2 representatives of network operators (D), one of whom must represent Western Power (C) • 1 representative of the System Operator (C) • 1 representative of the Market Operator (C) • 1 representative of Synergy (largest Genter) (C) 	<p>Chairman; (Independent)</p> <ul style="list-style-type: none"> • 1 person appointed by the Panel Chairman if he so decides²⁰ 	<ul style="list-style-type: none"> • 1 member appointed by each of the System Operators; • 1 member appointed by the Market Operator; • 1 member appointed by each of the Meter Data Providers (to the extent not already represented); • 1 member appointed by each of the Regulators • at least 1 member nominated by or elected in respect of Interconnector Participants • 1 member appointed by the 	<ul style="list-style-type: none"> • 1 Market / System Operator member • 3 – 5 other members appointed among the following 3 constituencies²² <ul style="list-style-type: none"> - generators of electricity (generation by gas, nuclear, wind, solar or hydro-electric) - consumers of electricity (residential, embedded retail/industrial) - energy related businesses and service (electricity traders/

²⁰ The Panel Chairman decides so when, in his opinion: (a) there is any class or category (by type of Plant or Apparatus or otherwise) of person generating or supplying electricity in Great Britain and/or Offshore, whose members (as such a class or category): (i) are exempt from the requirement to hold a Licence; and (ii) have interests in respect of the Code; and (b) those interests: (i) are not reflected in the composition of Panel Members for the time being appointed, but (ii) would be so reflected if a particular person were appointed as an additional Panel Member, or in his opinion: there are Trading Parties of a particular class and/or participation capacity, whose interests are not reflected in the composition of Panel Members for the time being appointed, but would be so reflected if a particular person were appointed as an additional Panel Member.

Country / Region	Singapore	New Zealand	Western Australia	UK	Ireland & Northern Ireland	Canada, Ontario
Market	Singapore Wholesale Electricity Market (SWEM)	New Zealand Electricity Market (NZEM) ¹¹	Wholesale Electricity Market (WEM) ¹²	Great Britain (GB) Electricity Wholesale Market ¹³	Single Electricity Market (SEM) ¹⁴	Ontario Electricity Market (OEM) ¹⁵
					<i>Regulators if they so determine²¹</i> (underlined – no vote)	wholesalers, aggregators, innovation, research, smart grid, gas utility, conservation-related services, financial) <ul style="list-style-type: none"> • 1 or more ad hoc members for specified terms, appointed by the Market/System Operator's Board if they so decide
Representation Model	Yes	No	Yes	Yes	Yes	Yes
Panel Appointed by	Market Operator's Board (EMC Board)	Regulator's Board	3-member Rule Change Panel (RCP) within the Regulator	Panel Chairperson, Trading Parties (via election), Citizens Advice or Citizens Advice Scotland, Transmission Company	Nominating Participants (via election), Regulators, SOs, MO, Metering Providers	Market/ System Operator's Board (IESO Board)

²² The representation within each constituency is subject to change by the IESO Board in order to accommodate the changing needs of Ontario's electricity sector and the impact these changes may have on the development of market rules. Each constituency represents a group of individuals who have a common/shared interest and stake in market rule amendments.

²¹ If the Regulators determine at any time that any particular type of party is not adequately represented on the MC, the Regulators may seek nominations from relevant persons and appoint a person from such nominations, or otherwise to represent that type of person (with voting rights).

Country / Region	Singapore	New Zealand	Western Australia	UK	Ireland & Northern Ireland	Canada, Ontario
Market	Singapore Wholesale Electricity Market (SWEM)	New Zealand Electricity Market (NZEM)¹¹	Wholesale Electricity Market (WEM)¹²	Great Britain (GB) Electricity Wholesale Market¹³	Single Electricity Market (SEM)¹⁴	Ontario Electricity Market (OEM)¹⁵
Panel's Term	Up to 3 years, not staggered	Up to 2 years, staggered	2 years, staggered	2 years, not staggered	Up to 2 years, staggered	3 years, staggered
Panel's Decision	By majority vote, subject to quorum. Chairperson has no vote. Report to contain record of RCP's members' votes and a summary of any member's objection to the recommendation.	By consensus, within agreed timeline. If no consensus is reached within agreed timeline, report to contain the differing views.	By consensus.	By majority vote, subject to quorum (50% of all Panel Members). Chairperson has no vote, unless votes are cast equally in favour of and against the motion.	By majority vote, subject to quorum (majority of appointed members). Chairperson casts deciding vote in the event of a tied vote. Report to contain record of members' votes and a summary of any member's objection to the recommendation, as well as MO & SOs' opinions.	By majority vote, subject to quorum. Chairperson has no vote. Report to contain record of TP's members' votes and a summary of any member's objection to the recommendation.
Working Groups	Yes	Yes	Yes	Yes	Yes	Yes

* Ensure equal representation of generators and retailers

Annex 4: Rules Change Panel Equivalents in US ISOs

Market	Panel Composition	Membership	Any Oversight by Other Bodies?	Participation in the Rules Change Process
<u>Electric Reliability Council of Texas (ERCOT)</u> Technical Advisory Committee (TAC) ²³	30 members, comprising of: <ul style="list-style-type: none"> • 4 representatives of each of the 6 segments as follows: <ul style="list-style-type: none"> • Cooperative; • Independent Generator; • Independent Power Marketer; • Independent Retail Electric Provider; • Investor-Owned Utility; and • Municipal. • 6 representatives of the Consumer segment as follows: <ul style="list-style-type: none"> • 2 representatives of Industrial Consumers; • 1 representative of Small Commercial Consumers; • 1 representative of Large Commercial Consumers; • 1 representative of Residential Consumers; and • The Public Counsel's designee as an ex officio voting member. 	Annual appointment or election by the Corporate Members of their respective Segments. Appointment by the Consumer Directors of their respective Consumer subsegments instead, if subsegment has no Corporate Members. Provision for proxies (vote and not contribute to establishing quorum).	Public Utility Commission (PUC) of Texas	Decisions made by affirmative votes of (i) two-thirds of the Eligible Voting Representatives of TAC; and (ii) at least 50% of the total Seated Representatives, subject to a quorum (51% of the Eligible Seated Representatives) being present.
<u>Pennsylvania-NewJersey-Maryland Interconnectio</u>	Each Senior Standing Committee is composed of the following 5 sectors: <ul style="list-style-type: none"> • Generation Owners; • Other Suppliers; 	Each Member may appoint one representative to serve on each of	Some changes to Manuals may be made by PJM directly, provided	The MRC provides advice and recommendations concerning the reliable and secure operation of

²³ ERCOT (2015). Amended and Restated Bylaws of ERCOT. Article 5: TAC. Retrieved from: [http://www.ercot.com/content/about/governance/legal/Amended_Restated_Bylaws\(ef08.17.2015\).pdf](http://www.ercot.com/content/about/governance/legal/Amended_Restated_Bylaws(ef08.17.2015).pdf)

Market	Panel Composition	Membership	Any Oversight by Other Bodies?	Participation in the Rules Change Process
<p><u>n (PJM)</u></p> <p>Senior Standing Committees (Markets & Reliability Committee (MRC) and Members Committee (MC))²⁴</p>	<ul style="list-style-type: none"> • Transmission Owners; • Electric Distributors; and • End-Use Customers, <p>provided that there are at least 5 Members in each Sector.</p>	<p>the Standing Committees, potentially a different person for each committee, with authority to act for that Member with respect to actions or decisions thereof.</p> <p>Provision of up to three alternate Representatives appointed by each Member to each such committee to act for that Member at meetings thereof in the absence of the representative.</p>	<p>they do not affect tariff rates or terms and conditions.</p> <p>FERC approval of regulatory filing.</p>	<p>the PJM Interchange Energy Market and Ancillary Services markets, mechanisms to provide an efficient marketplace for products needed for resource adequacy and operating security, and otherwise as directed by the MC.</p> <p>Please refer to Section 8 of the Operating Agreement of the PJM here for the quorum and voting methodology of the Senior Standing Committees.</p>

²⁴ PJM (2016). PJM Manual 34: PJM Stakeholder Process. Retrieved from: <http://www.pjm.com/~media/documents/manuals/m34.ashx>

Market	Panel Composition	Membership	Any Oversight by Other Bodies?	Participation in the Rules Change Process
<u>New York Independent System Operator (NYISO)</u> Management Committee (MC) ²⁵	Composed of the following 5 sectors: <ul style="list-style-type: none"> • Generation Owners • Other Suppliers • Transmission Owners • End-Use Consumer • Public Power/Environmental Parties 	All parties to the ISO Agreement. Provision of up to 7 alternate representatives designated by each Member.	NYISO FERC approval of regulatory filing.	The MC makes recommendations to the ISO Board proposing changes to the ISO OATT, the ISO Services Tariff, and the ISO Agreement. Please refer to Articles 7 and 8 of the NYISO's ByLaws of the MC here for the quorum and voting methodology of the MC.
<u>Independent System Operator New England (ISONE)</u> Participants Committee (PC) & Technical Committees ²⁶	The PC and the Technical Committees shall be composed of the following Sectors: <ul style="list-style-type: none"> • Generation Sector • Transmission Sector • Supplier Sector • Alternative Resources Sector • Publicly Owned Entity Sector • End User Sector. Separate Sectors may be created and the membership of existing Sectors modified by amendment of the NEPOOL Agreement and the Participants Agreement.	A Participant which meets the minimum requirements, if any, of the Sector or Sub-Sector it has elected to join shall designate an individual voting member to the PC. Provision for an alternate to each individual voting member.	ISO-NE FERC approval of regulatory filing	The PC considers and acts on matters including proposals to change the ISO Tariff and recommendations for changes to Operating Procedures, ISO Manuals, the NEPOOL GIS Rules, and other system rules and procedures. It also oversees three standing technical committees, the Markets Committee (MC),

²⁵ NYISO (2015). NYISO Management Committee ByLaws. Retrieved from:

http://www.nyiso.com/public/webdocs/markets_operations/committees/general_information/mc_by_laws.pdf

²⁶ ISONE (2009). New England Power Pool (NEPOOL) Technical Committee ByLaws. Retrieved from:

https://www.iso-ne.com/static-assets/documents/committees/techcomm_bylaws/technical_committee_bylaws.pdf

Market	Panel Composition	Membership	Any Oversight by Other Bodies?	Participation in the Rules Change Process
				<p>Reliability Committee (RC) and Transmission Committee (TC).</p> <p>Please refer to Sections 5.6 and 5.7 of the NEPOOL Participants Committee ByLaws here for the quorum and voting methodology of the PC.</p>