DEVELOPMENT OF THE ELECTRICITY FUTURES MARKET:

SECOND PHASE OF THE FUTURES INCENTIVE SCHEME

FINAL DETERMINATION PAPER

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ENERGY MARKET AUTHORITY
991G ALEXANDRA ROAD
#01-29
SINGAPORE 119975
www.ema.gov.sg

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1. Background

1.1. The Energy Market Authority ("EMA"), in partnership with the Singapore Exchange ("SGX") and the electricity industry, launched the electricity futures market ("EFM") in April 2015. The EFM complements both the existing wholesale and retail electricity markets by providing a platform for efficient trading to manage volatility and mitigate risks. A liquid futures market also provides a robust price discovery process for future supply of electricity, while enabling efficient transfer of risk between participants. In addition, the electricity futures market enabled the entry of independent electricity retailers and facilitated new business models. This benefitted consumers by putting downward pressure on prices and facilitated the development of new retail products.

1.2. As the EFM was a key enabler in developing vibrant electricity wholesale and retail markets, EMA launched the Futures Incentive Scheme ("FIS") in August 2018 to invest in and develop our nascent electricity futures market. The FIS consists of 2 different phases, each with a duration of 1.5 years. The first phase ("1st FIS") would end on 31 January 2020. The EMA would assess the market performance from the 1st FIS and reserves the right to revise the market making obligations for the second phase ("2nd FIS") from 1 February 2020 to 31 July 2021. Following the FIS, EMA would assess the market performance and review the need for further market support schemes. Meanwhile, market players were advised to assume that there would be no further market support schemes beyond July 2021 when making their commercial decisions.

1.3. On 13 June 2019, EMA launched a consultation paper to seek views on the proposed market making obligations and tender format for the 2nd FIS, as well as on the potential impact of the Forward Capacity Market ("FCM") on the EFM.

1.4. The consultation closed on 29 July 2019 and EMA received feedback from a total of 17 stakeholders, which consisted of a mix of financial traders, generation companies ("genco"), independent retailers ("IR"), and market operators. Table 1 shows the list of industry stakeholders who provided feedback to the consultation paper, classified into their stakeholder groups.

Table 1: List of industry stakeholders

Financial Traders	Generation Companies	Independent Retailers	Market Operators
1. DRW Singapore 2. Fenix One 3. Genk Capital 4. HNK Alpha 5. Liquid Capital 6. Engie Global Markets 7. Macquarie Bank	8. Sembcorp Industries 9. Keppel Infrastructure Holdings 10. PacificLight Power 11. Senoko Energy 12. YTL PowerSeraya	13. Best Electricity Supply 14. Ohm Energy 15. iSwitch/Jade Energy	16. SGX 17. Energy Market Company

2. Summary of Industry Feedback

2.1. Majority of the respondents did not favour the revised market making obligations for the 2nd FIS, and preferred to retain the current obligations under the 1st FIS for the 2nd FIS. They opined that the revised market making obligations would not significantly improve the performance and sustainability of the EFM, and that the cost of market making would increase. Most of the respondents also viewed the uniform price auction to be the most competitive and equitable tender format.

2.2. EMA had taken into consideration the feedback received before determining the finalised market making obligations and RFP parameters.

<u>Industry feedback on proposed market making obligations and tender format</u>

2.3. The key areas of feedback on the proposed market making obligations are summarised below:

2.3.1. **Two-way Price Making Spread** – Most of the respondents felt that the reduction in two-way price making spread would not significantly improve liquidity and hedging trades. They added that the market was already sufficiently liquid today, and that the requirement to hedge was more a function of business needs. In addition, some respondents felt that the current spread in the 1st FIS was sufficiently tight, and the further reduction of the spread would result in unnecessary risk on market makers, which would greatly inflate the cost of market making with no real benefits to the market. On the other hand, a few respondents felt that a tighter spread could improve liquidity, and that it would likely come at a higher cost.

2.3.2. **Refresh Requirements** – Most of the respondents felt that the introduction of Continuous Quoting ("CQ") would have little influence on liquidity, as current reload requirements in the 1st FIS was sufficient for current and expected future volumes in the market.

2.3.3. **Market Making Volume** – There was little feedback on market making volume. While there were a few opposing views on whether market making volume should be reduced, the general sense was that market making volume was largely immaterial in the context of CQ.

2.3.4. **Market Making Window** – Most of the respondents across the IR and financial trader groups felt that extending the market making window would not increase trading activity. A few added that for hedging trades, a longer window could make it more convenient to trade, but ultimately had little impact on the volume. There were mixed views in the genco group – while some felt a longer window could improve liquidity, others thought a shorter window would be more intense and encourage greater price discovery, resulting in greater trading activity. More than half of the respondents also added that a longer market making window would increase the cost of market making.

2.3.5. **Request-for-Quote (RFQ) –** There was little feedback on this. The few who responded felt that the RFQ process was cumbersome and agreed that it should be made optional for the 2nd FIS.

2.3.6. **Contract Size –** Most of the respondents felt that the current contract size of 0.5 MW under the 1st FIS was sufficient, and should not be made smaller. Specifically, most of the respondents in the IR group found that the contract size today was sufficiently granular for their hedging requirements, and were concerned with the possible increase in transaction costs as smaller lots would correspond to more trades.

2.3.7. **New Monthly Peak Load Product** – Most of the respondents did not support the introduction of the monthly peak load product. They felt that it would cannibalise the trading volumes and affect the liquidity in the market today, especially that of the monthly base load product. Such a product would also not be sustainable due to its low demand. A few added that a new product could complicate the market and deter potential entrants in this stage of the EFM, and could be launched when the market was more mature. On the other hand, a few respondents supported the monthly peak load product. Notably, there were mixed views in the IR group. While a few from the IR group added that the monthly peak load product provided an effective hedge, another felt that the product would affect the existing base load product and overall liquidity. Overall, most of the respondents felt that the introduction of the monthly peak load product would increase the cost of market making, which could affect the sustainability of the EFM.

2.3.8. **Tender Format –** Almost all respondents who provided feedback on the tender format felt that a uniform price auction would be more competitive and equitable compared to the pay-as-bid auction.

2.4. The industry also provided feedback on measures which could benefit the EFM. The key areas were to reduce trading cost and provide fee rebates to attract participants and more market making activity, to improve participation by physical market players e.g. gencos, and to educate prospective entrants on the benefits of the EFM. EMA would keep in view the feedback received and consider them as part of future efforts in enhancing the electricity futures market.

Industry feedback on the potential impact of the FCM on the EFM

2.5. The key areas of feedback on the potential impact of the FCM on the EFM are summarised below:

2.5.1. **Avoid overlapping the 2nd FIS with FCM –** Most of the respondents felt the lack of implementation details on the FCM meant that it would be difficult for EFM participants and prospective market makers to gauge the impact of the FCM on the EFM. They were concerned that the FCM could affect the Uniform Singapore Energy Price (USEP) and therefore the value of outstanding futures contracts. With uncertainty on how futures contracts in the 2nd FIS could be affected by the FCM, many respondents proposed for EMA to avoid overlapping the 2nd FIS with the EFM, such that the last 2nd FIS futures contract should expire before the start of the FCM.

2.5.2. **Sustainability of the EFM after FCM** – Many respondents were concerned that the FCM could impact the sustainability of the EFM. They suggested that the FCM would result in more stable pool pricing, and the lack of volatility would reduce the need to hedge and motivation to trade in the EFM. The FCM would therefore reduce liquidity in the EFM. Without a liquid EFM, many respondents were concerned about the loss of a critical and transparent benchmark for future electricity prices, as well as a vital avenue to hedge wholesale price risk. Some added that it would then be difficult for independent retailers to operate and survive, as they would be subjected to price risks and non-transparent bilateral contracts with generation companies.

2.6. EMA had taken into consideration the feedback received on the potential impact of the FCM on the EFM. Referring to the market making obligations in Section 3, EMA intends for the last futures contracts traded in 2nd FIS to expire before the start of the FCM.

3. Market Making Obligations

3.1. Noting the performance of the EFM under the 1st FIS and the industry feedback received, EMA has largely retained the current 1st FIS market making obligations for the 2nd FIS. Due to weak demand from the overall market, the monthly peak load product would not be introduced for the 2nd FIS.

Table 2: Market making obligations for the 2nd FIS

Parameters	Existing Obligations for 1st FIS		Final Obligations for 2nd FIS		Rationale for Proposed Changes
	Quarterly Base Load Electricity Futures	Monthly Base Load Electricity Futures	Quarterly Base Load Electricity Futures	Monthly Base Load Electricity Futures	
Market Making Volume	MMs are required to put up 6 lots of 0.5 MW contracts (totalling 3 MW) for each side, for each of the first 5 listed quarterly contracts; and 4 lots of 0.5 MW contracts (totalling 2 MW) for each side, for each of the next 4 listed quarterly contracts	MMs are required to put up 6 lots of 0.5 MW contracts (totalling 3 MW) for each side, for each of the 4 – 6 listed monthly contracts	No change.		N.A.

Parameters	Existing Obligations for 1st FIS		Final Obligations for 2nd FIS		Rationale for Proposed Changes
	Quarterly Base Load Electricity Futures	Monthly Base Load Electricity Futures	Quarterly Base Load Electricity Futures	Monthly Base Load Electricity Futures	
Two-way Price Making Spread	Aug to Dec 2018: $2/MWh Jan 2019 onwards: $1/MWh or 2% of bid price whichever is lower[1]	Prevailing quarterly contract two-way price making spread + $1/MWh	No change to current 1st FIS obligations. $1/MWh or 2% of bid price whichever is lower	No change.	N.A.
Refresh requirements	Aug 2018 to Jan 2019: Not less than 2 reloads Feb to Jul 2019: Not less than 3 reloads Aug 2019 to Jan 2020: Not less than 4 reloads No grace period for refreshing of quotes		No change to current 1st FIS obligations. Not less than 4 reloads No grace period for refreshing of quotes		N.A.

1 This will be determined quarterly based on the historical bid prices. For example, for Q1 2019, this will be based on the available historical bid prices for Q4 2018.

Parameters	Existing Obligations for 1st FIS		Final Obligations for 2nd FIS		Rationale for Proposed Changes
	Quarterly Base Load Electricity Futures	Monthly Base Load Electricity Futures	Quarterly Base Load Electricity Futures	Monthly Base Load Electricity Futures	
Cumulative Contract Duration	Not less than 2 years (8 full quarters, plus the balance of the current quarter)	4 – 6 consecutive contract months starting with the current contract month. A new quarter (3 months) will be listed upon expiry of the nearest quarter[2]	Feb 2020 to Mar 2021: 8 full quarters, plus the balance of the current quarter Apr to Jun 2021: 7 full quarters, plus the balance of the current quarter Jul 2021: 6 full quarters, plus the balance of the current quarter	No change.	From Apr to Jul 2021, the cumulative contract duration of the Quarterly Base Load Electricity Futures will be reduced accordingly so that last futures contracts traded (i.e. Mar 2023 contract) will expire before start of the FCM.
Market Making Window	The Market Making Window for each Singapore Business Day will be not less than ½ hour, as may be directed by the Exchange (currently set at 4.30pm-5.00pm).		No change.		N.A.

2 The number of contracts varies depending on the month, based on quarters ending on the last day of March, June, September and December. For example, MMs are required to put up 6 contracts in April 2019 (April to September 2019) but 5 contracts in May 2019 (May to September 2019).

Parameters	Existing Obligations for 1st FIS		Final Obligations for 2nd FIS		Rationale for Proposed Changes
	Quarterly Base Load Electricity Futures	Monthly Base Load Electricity Futures	Quarterly Base Load Electricity Futures	Monthly Base Load Electricity Futures	
Market Making Coverage and	The Market Making Coverage – the period within the Market Making Window where the Selected Applicant meet all its market making obligations – will be not less than 80% of the cumulative time of all Market Making Windows in a month (calculated separately for quarterly and monthly contracts).		No change. For avoidance of doubt, as per 1st FIS, market making coverage for each product is calculated separately. Whether each MM meets the MM coverage is based on the threshold for each individual product, not averaged together.		N.A.
Request-for-Quote (RFQ)	MMs will be required to respond to a Request-for-Quote (RFQ) when they are not quoting during the Market Making Window, with a Maximum Two-Way Price Making Spread of no more than 1.5 times the prevailing Maximum Two-Way Price Making Spread.		MMs will respond to a Request-for-Quote (RFQ) on a best effort basis when they are not quoting during the Market Making Window, with a Maximum Two-Way Price Making Spread of no more than 1.5 times the prevailing Maximum Two-Way Price Making Spread.		As RFQs are uncommon, a best effort basis requirement will provide more risk certainty for MMs.
Contract Size	Not larger than 0.5 MW over ½ hour per day (i.e. for each of the 48 half-hourly periods in a day) at the Uniform Singapore Energy Price (USEP) over the contract length.		No change.		N.A.

Parameters	Existing Obligations for 1st FIS		Final Obligations for 2nd FIS		Rationale for Proposed Changes
	Quarterly Base Load Electricity Futures	Monthly Base Load Electricity Futures	Quarterly Base Load Electricity Futures	Monthly Base Load Electricity Futures	
Contract Length	No longer than quarterly contracts with near term (prompt) quarter contract[3]	No longer than monthly contracts with near term (prompt) month contract	No change.		N.A.
Safeguards	Safeguards to ensure orderly trading, e.g. position, daily, price, volume and concentration limits. Phased net market making position limit shall be Clearing member's position limit for each MM.		No change.		N.A.
Compliance	Submission of compliance report to the Authority on a quarterly basis, and whenever reasonably requested by the Authority.		No change.		N.A.

[3] Trading of near term (prompt) quarter contract refers to the availability of the nearest quarter contract for trading within the quarter itself. For example, a trader should be able to trade an electricity futures contract for Q1 2019 (with maturity date 31 March 2019) within that quarter (e.g. on 2 March 2019).

4. Parameters for the 2nd Futures Incentive Scheme (FIS) Request for Proposal (RFP)

4.1. The RFP parameters for the 2nd FIS would be largely similar to that of the 1st FIS.

4.2. EMA reserves the right not to launch, or to revise the dates of the 2nd FIS.

4.3. **Uniform Price Auction**

4.3.1. The RFP for market making services for the quarterly and monthly base load electricity futures contracts would be done via a uniform price auction where the awarded price would be based on the highest marginal bid among the awarded Applicants.

4.3.2. EMA intends to select between three to seven Applicants to be awarded the contract to provide market making services. EMA reserves the right to determine the number of Applicants to be selected taking into account the bids by the respective Applicants.

4.4. **Contract Tenure**

4.4.1. Each awarded Applicant will provide market making services for the quarterly and monthly electricity futures contracts for a duration of 1.5 years from 1 February 2020 to 31 July 2021.

4.5. **Offers to be Submitted**

4.5.1. Each Applicant must submit a total of five bids (in $ per month) to provide market making services for the two products (i.e. quarterly and monthly base load electricity futures contracts) over the contract tenure.

4.5.2. EMA would take into account the bids submitted to determine the number of awarded Applicants.

4.5.3. An indicative form of submission of bids is as per Table 3.

Table 3: Indicative Form of Submission of Bids

Number of awarded Applicants	Offer Price in $ per month
	To 2 decimal places (S$)[4]
3	
4	
5	
6	
7	

4.6. **Eligibility to Participate in the RFP**

4.6.1. Applicants are not required to be holders of electricity licences issued by the EMA. This enables participation by a more diverse range of MMs, which would be useful in driving liquidity.

4.6.2. Applicants can only participate in a single bid in the RFP regardless if the participation is as a direct Applicant, as part of a consortium, as a subcontracter, or as an outsourcing partner.

4.7. **Selection Criteria**

4.7.1. Each selected Applicant would be required to meet the Exchange's[5] requirements for participation in the futures market to provide market making services. This includes, but is not limited to:

a) Track record – The Applicant must: (i) have at least 2 years of continuous experience in electricity futures trading/market making either locally or in overseas markets; or (ii) provide evidence prior to the commencement of market making that it will have the required personnel (in-house or outsourced) to perform market making in the electricity futures market adequately, as well as to manage the overall risk monitoring and controls.

b) Capital requirement – The Applicant must maintain a minimum base capital of S$1 million and must have at least S$4 million of "liquid" capital to meet the required margin requirements and potential trading losses.

4 Excluding Goods and Services Tax (GST).

5 The Exchange refers to the prevailing Exchange on which the quarterly and monthly contracts are listed (i.e. currently SGX).

c) Futures Trading Account – The awarded Applicant must have opened a futures trading account with one of the Exchange's clearing members and be given access to a futures trading platform prior to the commencement of market making. The Exchange would also require them to do a pre-market making trial to demonstrate their readiness.

4.7.2. In the evaluation of the Applicant, EMA would take into account factors which include, but not limited to, the price competitiveness of the Applicants' respective bid, the relevance and duration of track record and the impact on the overall diversity of MMs.

4.8. **Contractual Arrangements**

4.8.1. The Selected Applicants will be required to enter into a Market Making Agreement (MMA) with the Exchange to show that it is compliant with the associated market making obligations, and to enter into an agreement with the Market Support Services Licensee (MSSL) to facilitate administration of the scheme.

4.8.2. Any payment for the market making services would be based on fulfilment of the market making obligations for each monthly period. Failure to fulfil any of the associated market making obligations within the period will result in non-payment for that period. EMA reserves the right to terminate the contract after two months of non-performance (consecutive or otherwise) by the Selected Applicant in a six-month rolling period. In the event of such termination of the contract, the Selected Applicant will be required to pay EMA <u>an exit fee of 100% of the awarded price</u>.

4.8.3. In the event of unilateral early contract termination by any Selected Applicant, the Selected Applicant is required to inform EMA at least twenty Business Days prior to the termination date. In the event of such termination of the contract, the Selected Applicant will also be required to pay EMA <u>an exit fee of 100% of the awarded price</u>.

4.8.4. In the event of any termination, EMA reserves the right to find a replacement under the same set of contractual terms, for example, from the pool of non-selected Applicants.

4.8.5. The Selected Applicants would not be allowed to sub-contract, transfer or assign its market making obligations in whole or in any part to third parties without EMA's prior written approval.

5. Indicative Timeline for Next Steps

5.1 The indicative timeline is as follows.

Indicative Date	Key Milestone
Oct 2019	Launch of 2nd FIS RFP
Dec 2019	Award of 2nd FIS RFP to Selected Applicants
1 February 2020 – 31 July 2021	Tenure of 2nd FIS