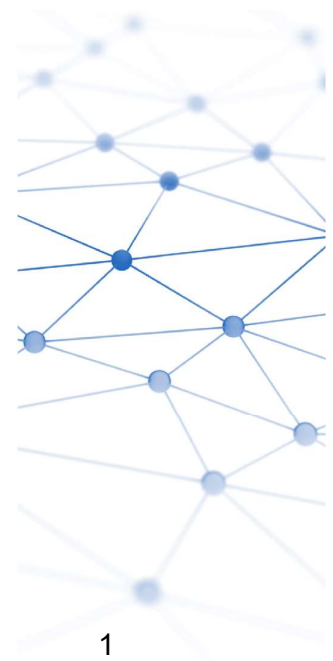


# Request for Proposal

## Fast Start Ancillary Service

EMC/ASCRFP/01/FY2023/24



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## SECTION 1: INTRODUCTION

- 1.1 Centrally procured power system resources needed to ensure the security, reliability and stability of the Singapore power system are referred to as ancillary services (“**AS**”). The Singapore Wholesale Electricity Market (“**SWEM**”) rules (“**Market Rules**”) provide for the Energy Market Company (“**EMC**”) (as the Market Operator Licensee) to, at the request and on behalf of the Energy Market Authority (“**EMA**”) as the Power System Operator (“**PSO**”), procure AS under an Ancillary Service Contract (“**ASC**”) to be entered into between EMC and the Ancillary Services Provider (“**ASP**”).
- 1.2 The Singapore power system requires Fast Start (“**FS**”) AS that can be activated by PSO to start delivering additional electricity supply within 10 minutes to balance the power system in the event of unexpected demand increase, forced or unplanned outages of generating units, and/or there is a projected shortfall in energy/reserve.
- 1.3 EMC invites you to participate in this Request for Proposal (“**RFP**”) to provide FS AS under the direction from EMA. This document sets out the RFP timeline, specifications/requirements, evaluation framework as well as key terms and conditions in the FS ASC. The successful RFP Participant(s) will be required to build, own and operate FS generating unit(s) to provide the required FS AS.

## SECTION 2: CONSIDERATIONS AND TIMELINE FOR PROCURING FAST START ANCILLARY SERVICE

2.1 Maintaining continuous balance between energy supply and demand in Singapore’s power system is crucial. Any imbalance in the power system may result in supply instability, disruption, or in the worst-case scenario a power system collapse. Such imbalances could be due to an unexpected increase in demand, and/or forced or unplanned outages of generating units. On the supply side, EMA will ensure sufficient generation capacity in the form of online reserves and offline FS generation capacity. Online reserves are currently mainly provided by the spare capacity of online/running combined cycle gas turbines (“**CCGTs**”). FS generation capacity is provided by offline generating units (e.g. open cycle gas turbines or “**OCGTs**”) that can be brought online within 10 minutes and reach full output within a further 15 minutes.

2.2 The existing OCGT units in our power system are due for replacement. To meet the FS capacity requirement of our power system, Meranti Power is building two units of OCGT (340 MW each) which are scheduled to be operational in 2025. However, the risk of new generating units tripping during commissioning and the initial years of operations are typically elevated. This risk in our power system will be especially heightened with the confluence of Meranti Power’s new OCGT generating units and two other new advanced CCGT generating units of Keppel and Sembcorp coming onstream in 2026 and 2027. EMA has assessed the need to procure FS AS to mitigate the heightened risk during this period until Meranti Power’s OCGT generating units are run in. Thereafter, the FS AS may be repurposed to provide contingency reserve and/or supply to backup electricity imports, in which case the FS AS costs would be recovered from the importers.

2.3 This RFP (called by EMA through EMC) is for the procurement of 100 MW of FS AS to be available by 31 December 2024 (i.e. the FS generation capacity should be commissioned and operational by this date), with an option to provide an additional 100 MW of FS AS to be available by 31 December 2025.

2.4 The successful RFP Participant(s) will be awarded a 25-year FS ASC, and in return build, own and operate the selected FS generating unit(s) to provide the FS AS for the duration of the ASC. Refer to **Table 1** for the RFP timeline.

**Table 1: RFP Timeline**

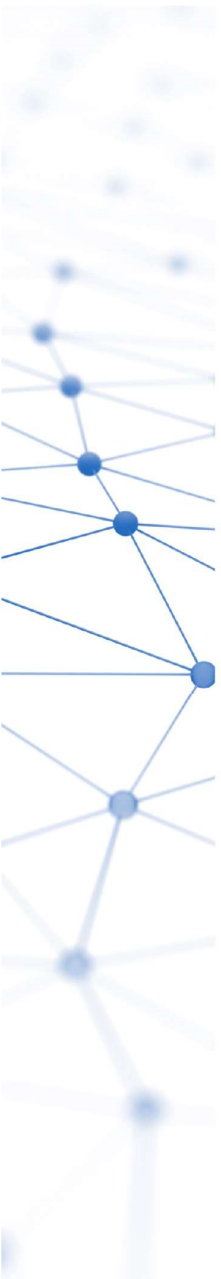

Milestone	Due Date
Deadline for submission of proposals by RFP participants	3.00pm (Singapore time) on 1 Mar 2024
Evaluation of proposals by EMA	Mar 2024 to mid-Apr 2024

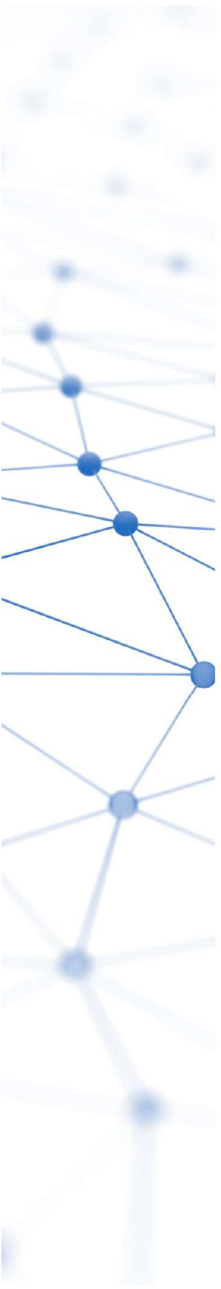
Notification of results to RFP participants by EMA	By mid-Apr 2024
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## SECTION 3: INTERPRETATION

3.1 In this RFP Document, the following words and expressions shall have the following meanings:

- (a) “Agent” means any agents, sub-contractors, suppliers and consultants of the Participant (as the case may be);
- (b) “Ancillary Services Contract” or “ASC” means the contract that will be executed between EMC and the ASP for the FS AS and forms part of the Contract;
- (c) “Business Days” means Mondays to Fridays, excluding Saturdays, Sundays and gazetted Singapore public holidays;
- (d) “Closing Time” means 1 March 2024 at 15:00 hours or any such other date and time as stipulated by EMC in the event of an extension;
- (e) “Contract” means the definitive agreement entered into between the selected Participant and EMC in relation to a Proposal accepted by EMA, and shall include the documents prescribed in **Section 5.1**;
- (f) “Contract Price” means the information provided in **Appendix 1.1 and 1.2**;
- (g) “Deadlines” means any deadlines in relation to the performance of the Works that is stipulated by EMC in this RFP Document, including the milestones table and/or dates stipulated in the project delivery schedule proposed by the Participant which are accepted and approved by EMC and EMA, including the Commercial Operating Date (“**COD**”);
- (h) “EMC” means Energy Market Company Pte Ltd;
- (i) “EMA” means the Energy Market Authority of Singapore;
- (j) “GST” means the goods and services tax under the Goods and Services Tax Act (Chapter 117A of Singapore);
- (k) “Legal Requirement” means any law or any present or future directive, request, requirement, regulation, instruction, rule, standard of performance or code of practice, and all regulations, directions and codes of practices issued thereunder;

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- 
- (l) “Letter of Award” means a letter of award issued by EMA to the Participant as acceptance of the Participant’s Proposal in accordance with the letter’s terms;
  - (m) “Loss” includes but is not limited to loss, damage, costs, actions, claims, liabilities, proceedings, demands, risks, charges and/or expenses of whatsoever nature and howsoever arising (inclusive of delays, loss of profits, cost of cover, loss of data, lost savings, loss of opportunities and inconveniences, special, incidental, punitive, exemplary or consequential damages (whether in tort, contract or otherwise)), whether direct, indirect, joint, several, actual, contingent or otherwise (including without limitation legal fees on a full indemnity basis), and the interest thereon, and includes without limitation claims made by third parties and claims for defamation, infringement of any intellectual property rights, death, bodily injury, wrongful use of computers, unauthorised or illegal access to computers (including hacking), property damage or pecuniary losses howsoever arising;
  - (n) “Market Rules” means the Singapore Electricity Market Rules, accessible at <https://www.home.emcsg.com/about-the-market/rules>;
  - (o) “NEMS” means the National Electricity Market of Singapore;
  - (p) “Participant” means the entity, as identified in the Proposal, submitting the Proposal to EMC;
  - (q) “Personnel” means the officers, representatives, employees and other personnel of the Participant (including the project managers), the Participant’s Agents and their respective officers, representatives, employees and other personnel;
  - (r) “Premises” means the premises that the infrastructure for the FS AS will be built or reside on;
  - (s) “Proposal” means the proposal for the Project submitted by the Participant to EMC in accordance with this RFP Document;
  - (t) “Project” means the procurement and delivery of the FS AS in accordance with the requirements set out in this RFP;
  - (u) “RFP” has the meaning ascribed at **Section 1.3**;
  - (v) “RFP Document” means this document, comprising the sections set out in the table of content;

- 
- (w) “PSO” means Power System Operator;
  - (x) “Public Authority” means any other governmental or regulatory authority having supervisory powers over EMC;
  - (y) “Technical Requirements” means the requirements as set out at **Section 6** of this RFP Document; and
  - (z) “Works” means all of the services and deliverables provided by the Participant in relation to and/or in connection with the FS AS, in accordance with the requirements set out in this RFP.



## SECTION 4: INSTRUCTIONS TO RFP PARTICIPANTS

### *Proposal Requirements*

4.1 The Participant's Proposal shall, at a minimum, contain the following information:

- (a) Business Profile comprised of the Participant's –
  - I. latest business registration profile or an equivalent document;
  - II. audited annual financial statements for the past 3 consecutive years;
  - III. key experience and comparative market standing relating to the RFP requirements;
- (b) Contract Price in the form set out in **Appendix 1.1 and 1.2**, which shall be an all-inclusive price quoted for the performance of the Works. The quote shall be in fixed sums that shall follow the proposal as set out in **Section 7**;
- (c) Technical Proposal outlining a description of Works to be provided in respect of the FS AS. The Technical Proposal should provide sufficient details to enable EMA to make an informed decision as to whether to accept the whole or any part of the Proposal. This must include the details as stated in **Section 6**;
- (d) RFP Compliance Checklist setting out the Participant's ability to meet the terms of this RFP Document in the form set out in **Appendix 2.1 and 2.2**; and
- (e) Project Implementation Plan detailing how the Participant will achieve the Deadlines and meet this RFP Document's requirements, which shall include key milestones, deliverables, allocated resources, and contingency plans for issues and delays, and technical implementation tasks.

### *Submission of Proposal*

4.2 The Participant shall submit one (1) bound printed set of its Proposal and one (1) PDF soft copy (with text copy and printing permitted) stored on three (3) separate discs, combined in an envelope, by the Closing Time.

4.3 The Proposal shall be ordered in the manner below:

- (a) Business Profile;
- (b) Contract Price, as set out in **Appendix 1.1 and 1.2**;

- (c) Technical Proposal;
- (d) RFP Compliance Checklist, as set out in **Appendix 2.1 and 2.2**;
- (e) Project Implementation Plan; and
- (f) remaining parts of the Proposal, including properly labelled attachments.

4.4 The envelope shall be labelled with the Participant’s company name and “RFP for Fast Start (EMC/ASCRFP/01/FY2023/24)” and deposited into the RFP box at the following address:

Energy Market Company Pte Ltd  
4 Shenton Way. #03-01 SGX Centre 2, Singapore 068807

4.5 Any Proposals deposited with or received by EMC after the Closing Time will be rejected and will not be evaluated by EMA.

4.6 All requests for clarification on this RFP shall be submitted to EMC and EMA via [FSAS1@emcsg.com](mailto:FSAS1@emcsg.com) and [AS\\_Procurement@ema.gov.sg](mailto:AS_Procurement@ema.gov.sg) respectively.

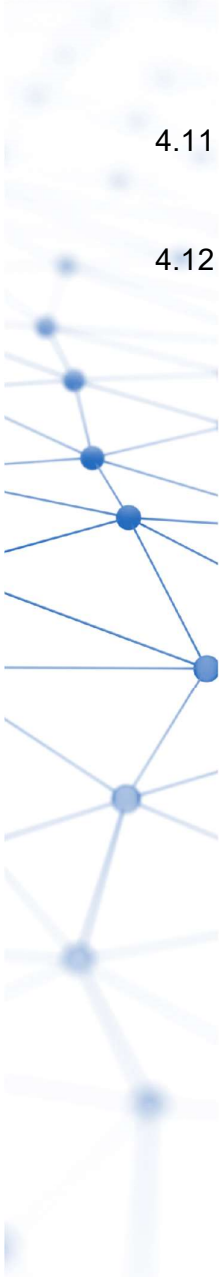
4.7 By submitting a Proposal to EMC, the Participant shall be deemed to have made an irrevocable offer valid for at least 120 calendar days commencing from the Closing Date (the “**Validity Period**”) to EMC in accordance with the terms of this RFP Document, and hereby agrees to be irrevocably bound by the terms of this RFP Document, the Proposal and the Contract, if the Proposal is not rejected in accordance with **Section 4.5**. The Validity Period may be extended by written agreement between the parties, subject to EMA’s approval.

4.8 A Participant shortlisted by EMA after the Closing Date may be invited to a presentation and clarification session. Any such session would typically consist of an hour-long segment allocated for the Participant to present its Proposal and a two (2) hour-long segment allocated for clarifications on the Proposal.

**Discretion to Award**

4.9 EMA reserves the right to award more than one Proposal or not to award at all. Where a Proposal is awarded by EMA, EMA will issue a Letter of Award to the Participant. A Contract is formed between the Participant and EMC upon issuance of the Letter of Award by EMA.

4.10 A binding Contract is formed between the parties from the Commencement Date on the terms of this RFP Document, the Letter of Award and the Proposal.



4.11 EMA, may accept or reject any Proposal, in whole or in part, at its sole discretion. EMA and EMC are not bound to furnish any reasons for the same.

4.12 In the event of EMA's partial acceptance of a Proposal, the relevant Contract Price shall be adjusted commensurately based on the initial price and breakdown specified in the Proposal.

## SECTION 5: CONTRACT TERMS

### *Precedence*

5.1 The following documents will collectively form the Contract between the EMC and the Participant for the FS AS, in descending order of precedence, the:

- (a) terms of the Ancillary Services Contract when entered into;
- (b) terms of this RFP Document, including any Appendices;
- (c) terms of any Letter of Award; and
- (d) Participant's Proposal, if accepted.

5.2 The Participant agrees to perform his obligations in accordance with the terms of the Contract and warrants that the FS AS, and all Works provided pursuant to the Contract shall conform to the Technical Requirements as well as any requirements that are reasonable and approved by EMA that EMC may prescribe in writing from time to time. The Participant further warrants that FS AS and the Works shall be fit and adequate for the purposes intended.

### *Participant's General Obligations*

5.3 The Participant represents, warrants and undertakes that it:

- (a) is able and ready to perform fully and shall be responsible for providing the FS AS and the Works in accordance with the Contract;
- (b) shall carry out such reasonable instructions and directions of EMC and/or EMA in relation to the Project and, in matters that require the Parties' agreement, to not unreasonably withhold consent to any proposal made by the EMC and/or EMA; and
- (c) has all necessary licences, permits and approvals to perform its obligations under the Contract and shall perform all its obligations with due care and skill, in compliance with all applicable laws and regulations and shall take all actions, execute and deliver all documents and otherwise do all things necessary to give full effect to the Contract and to comply with all laws and regulations applicable to it in connection with the provision of the FS AS and the performance of the Contract.

5.4 The Participant shall fully co-operate with EMC in complying with any requests from any Public Authority for the provision of all information and data (including

Documentation) relating to this Contract to such Public Authority, and nothing done in compliance with such requests shall be treated as being in breach of any contractual obligation under this Contract.

5.5 The Participant undertakes that the Personnel assigned to work on the Project are suitably qualified and possess the required skills to perform the work.

5.6 Personnel assigned by the Participant to perform work in relation to the Project may be required to clear security assessments by relevant Public Authorities. The Participant shall take this requirement into consideration when assigning any Personnel. The inability or failure to obtain the necessary security clearance for any Personnel in time or at all shall not be deemed a force majeure event or in any event excuse any non or late performance of the Participant's obligations under this Contract.

#### ***Variation(s) to RFP Document***

5.7 Between the launch of the RFP until the Closing Time, EMC may, at the direction or with approval from EMA, amend and/or expand the scope of FS AS, with the issuance of an addendum to this RFP Document.

5.8 The Participant shall ensure that any Proposal submitted by the Participant takes into account such addendum(s) that may be issued by EMC pursuant to **Section 5.7** above.

#### **Indemnity and Limitation of Liability**

5.9 The Participant shall indemnify and keep EMC fully harmless and indemnified against any and all Loss suffered or incurred by EMC directly or indirectly arising out of or in connection with:

- (a) any breach of the Contract terms by the Participant and/or its Personnel; and/or
- (b) the presence of the Personnel on the Premises, including any injury or death to any Personnel or any loss or damage to their personal effects occurring while such Personnel are on the Premises.

5.10 To the maximum extent permitted by applicable law, EMC shall not be liable, whether in contract, tort (including negligence) or otherwise, for any loss of profit or loss of savings (including anticipated profits and savings), or loss of goodwill, reputation, opportunity or business, or any indirect, punitive, incidental, exemplary, special or consequential losses or damages, arising from or in

connection with the Contract/RFP, even if it has been advised of the possibility of such losses or damages.

5.11 **Section 5.9 and 5.10** shall survive the expiry or termination of the Contract.

### **General**

5.12 The Contract (including the Ancillary Services Contract, RFP Document, and the Proposal, as accepted by EMC) constitutes the entire agreement and understanding between the parties in connection with the subject matter hereof, and supersedes all prior oral or written communications, representations or agreements.

5.13 The Contract may be amended upon written consent of both parties, subject to the approval of EMA. If any provision of the Contract is inconsistent with any Legal Requirement, EMC shall have the unilateral right to amend such provision, solely to the extent necessitated by such Legal Requirement, upon notifying the Participant.

5.14 A person who is not a party to the Contract shall have no rights under the Contracts (Rights of Third Parties) Act 2001 to enforce any term of the Contract.

5.15 The Contract shall be subject to, governed by and interpreted in accordance with the laws of Singapore.

5.16 Any and all disputes arising out of or in connection with the Contract (including without limitation any question regarding its existence, validity or termination), which are not resolved through amicable negotiation within 90 days after one party notifies the other party in writing of the existence of the said dispute, shall be referred to and finally resolved by arbitration in Singapore before one arbitrator in the English language in accordance with the Arbitration Rules of the Singapore International Arbitration Centre ("**SIAC**") for the time being in force, which rules are deemed to be incorporated into this RFP Document. There shall be 1 arbitrator appointed by the President of the SIAC. The seat of arbitration shall be Singapore.

5.17 Nothing in the Contract shall prevent either party from seeking urgent equitable relief before the courts of Singapore.

## SECTION 6: TECHNICAL PROPOSAL

- 6.1 Each Participant shall submit a detailed **Technical Proposal** setting out how the following technical requirements in this **Section 6** (“**Technical Requirements**”) will be met.
- 6.2 Each Participant should also submit a detailed **Value-Added Service Proposal** setting out the value-added services being proposed.

### ***FS Generation Capacity and Delivery Timeline***

- 6.3 The Participant shall propose to build, own and operate one or more modular FS generating units, with aggregate rated generation capacity (under Singapore ambient operating conditions) of 100 MW and COD on 31 December 2024 or earlier (“**Base Capacity**”). The Participant may also propose to build, own and operate another 100 MW of FS generating unit(s) with COD on 31 December 2025 or earlier as an option to be exercised at EMA’s discretion by no later than 31 December 2024 (“**Optional Capacity**”).
- 6.4 Proposals submitted by Participants must provide for either (a) the Base Capacity and the Optional Capacity; or (b) the Base Capacity. Proposals that are submitted solely for the provision of the Optional Capacity may be rejected by EMA.

### ***Planting Site***

- 6.5 Each Participant shall source and secure its own land and premises to plant the proposed FS generating unit(s), including any infrastructure/equipment needed (a) to connect to the power grid and, where applicable, gas supply network, and (b) to support and sustain operations to provide the required FS AS for the duration of the 25-year FS ASC.

### ***Technical Capability***

- 6.6 Each FS generating unit will be subject to the following **Performance Standards**:
- (a) No more than 10 minutes for the FS generating unit to synchronise to the power grid following receipt of activation notification from PSO;
  - (b) No more than 15 minutes for the FS generating unit to attain loading at its rated maximum capacity following synchronisation to the power grid;

- (c) The FS generating unit must be able to maintain loading at its rated maximum capacity for at least four (4) hours; and
- (d) The FS generating unit must be able to achieve 95% or higher Annual Availability Factor defined as:

$$\text{Annual Availability Factor} = \left[ 1 - \frac{\text{POH} + \text{FOH} + \text{UPO}}{\text{TH}} \right] \times 100\%$$

where:

*POH, FOH and UPOH mean respectively the number of Planned Outage Hours, Forced Outage Hours and Unplanned Outage Hours of the FS generating unit in the year of review (year 'T'); and*

*TH means the total number of hours in year 'T'.*

- 6.7 Where the proposed FS generating unit(s) is/are capable of using natural gas and/or diesel as primary fuel (such as aeroderivative, OCGT and/or gas turbine with battery storage hybrid), natural gas as the primary fuel with the capability to start up using diesel and/or hot-switch between diesel and natural gas would be more favourably considered.
- 6.8 Each proposed FS generating unit should have a technical lifespan of 25 years from the COD and comply with the applicable technical requirements stipulated in (a) the Transmission Code, and (b) the Market Rules.
- 6.9 The Participant may propose to adopt any type of FS generation technology as well as new and/or refurbished FS generating units, subject to meeting all the above requirements. Where refurbished FS generating units are proposed, they shall not be an existing registered Generation Registered Facility in the Singapore power system unless there is prior approval from EMA.
- 6.10 Each Participant shall provide the declared performance and capabilities of the proposed FS generating unit(s) in the format shown in **Table 2a** and **2b**, along with supporting documents (e.g. technical datasheets or undertaking letter from Original Equipment Manufacturer, assumptions, reference source) for the declared performance and capabilities. Where there are parameters in **Table 2a** and **2b** that are not applicable to the proposed FS generation technology, the Participant shall indicate "NA" in the box.



**Table 2a: Performance Parameters – Performance Conditions**

S/N	Type of Performance and Capability of the new generating unit	Declared Parameters
1	Efficiency at maximum capacity while firing using primary fuel (%)	
2	Efficiency at maximum capacity while firing using alternate fuel (%)	
3	Time taken to complete FCO operation (minutes)	
4	Permissible loading level(s) for FCO operation (%)	
5	Low Gas Pressure Trip Setting while firing on Primary Fuel (barg)	
6	Ramp-up rate (MW/min)	
7	Ramp-down rate (MW/min)	

**Table 2b: Other Performance Parameters**

S/N	Type of Performance and Capability of the new generating unit	Declared Parameters
1	Type of generation technology	
2	Maximum generation capacity at 32°C (MW)	
3	Gas consumption while firing at maximum capacity	
4	Grid connection point	
5	Voltage level (kV)	
6	Short-circuit currents at the switchhouse bus without grid connection (kA)	

### **Operating and Testing Regime**

- 6.11 Each FS generating unit is required to remain offline unless instructed otherwise by EMA/PSO to meet power system needs.
- 6.12 EMA may allow the ASP to use specific FS generating unit(s) to supply energy and/or reserves on a commercial basis in the NEMS during specific time periods which PSO determines the FS AS from the unit(s) is not required by the power system. Such arrangement, including the specific terms and conditions thereof, will be developed on a case-by-case basis after the award of the RFP.

6.13 In a given month 'M', each FS generating unit will be subject to one (1) surprise test (i.e. activation for testing purpose) by PSO if the generating unit was not activated (including for testing) to run up in the month 'M'. Before the surprise test is conducted by PSO in the month 'M', if there was an activation by PSO (not for a surprise test) successfully fulfilled by ASP, PSO will not conduct the surprise test in the month 'M'.

6.14 The ASP is required to schedule with PSO and conduct a self-test/retest for any of its FS generating unit within 14 days following any forced outage of the FS generating unit or unsuccessful surprise test. The FS generating unit will be deemed as unavailable (i.e. on forced or unplanned outage) from the half-hour period in which it tripped or failed the test, up to and including the half-hour period in which a self-test/retest is successfully completed. A surprise test or self-test/retest is considered successfully completed if the FS generating unit is able to (a) synchronise with the power grid and ramp-up to its rated maximum capacity within the prescribed response time as stated in **Section 6.6(a) and 6.6(b)**; (b) maintain loading at its rated capacity for 60 minutes; and (c) thereafter ramp down to desynchronise with the power grid without forced outage.

## SECTION 7: FINANCIAL PROPOSAL

- 7.1 A 25-year FS ASC will be awarded to the successful Participant for the Base Capacity, and a separate 25-year FS ASC for the Optional Capacity if duly exercised by EMA.
- 7.2 In addition to the Technical Proposal, each Participant shall submit a **Financial Proposal (see Appendix 1.1 and 1.2)** setting out the following three (3) (or if offering the Optional Capacity, five (5)) key financial parameters for the FS ASC:
- CAPEX for the Base Capacity and separately for the Optional Capacity;
  - A First-Year Fixed OPEX for the Base Capacity and separately for the Optional Capacity; and
  - Efficiency Factor (constant for the Base Capacity and Optional Capacity) which will be fixed for the entire duration of the ASC(s).

### **Capability Payment**

- 7.3 Under the 25-year FS ASC, in return for providing the FS AS, the ASP will receive an **Annual Capability Payment** calculated by the equation in **Section 7.4**, comprising two components:
- Capital Expenditure (“**CAPEX**”) in the form of a fixed annual payment (in **S\$ per year**), intended to cover the ASP’s capital investment and cost of capital; and
  - Fixed Operating Expenditure (“**OPEX**”) in the form of an annual payment (in **S\$ per year**) adjusted annually by the Monetary Authority of Singapore (“**MAS**”)’s Core Inflation rate and an Efficiency Factor.
- 7.4 For the 12-month period beginning from the first day of April of a given year ‘T’, the Annual Capability Payment (“**ACP<sub>T</sub>**”) to the ASP is calculated as follows:

$$ACP_T = CAPEX + [ \text{Fixed OPEX}_{T-1} \times ( 1 + MCI_{T-1} - \text{Efficiency Factor} ) ]$$

where:

*MCI<sub>T-1</sub> is the MAS Core Inflation rate published by MAS for the calendar year immediately preceding year ‘T’; and*

*Efficiency Factor is between 0 and 1 (inclusive), up to 2 decimal places.*

7.5 For Year 1, the ACP will simply be the sum of CAPEX and the First-Year Fixed OPEX proposed by the ASP.

7.6 The ASP will be paid the full ACP if the actual availability of its FS generating unit(s) is/are at or above the 95% Annual Availability Factor prescribed in **Section 6.6(d)**. Actual availability below the Annual Availability Factor will result in a proportional reduction in the ACP. Accordingly, for year ‘T’, the **Ex-post Capability Payment (“EPCP”)** that the ASP will be entitled to retain is calculated as follows:

$$EPCP_T = \text{MIN} \{ [ ACP_T ] ; [ (ACP_T / (0.95 \times TH_T)) \times AH_T ] \}$$

where:

*MIN is the lower of the two derived figures in square brackets;*

*ACP<sub>T</sub> is the Annual Capability Payment for year ‘T’;*

*TH<sub>T</sub> is the total number of hours in year ‘T’; and*

*AH<sub>T</sub> is the available hours achieved by the AS provider in year ‘T’. Where there are multiple FS generating units under the FS ASC, AH<sub>T</sub> will be the weighted-average availability across all the units (specifically, by each unit’s maximum rated capacity). AH<sub>T</sub> of a given unit will be administratively adjusted to include any long outage planned maintenance period approved by PSO in the Annual Generator Outage Programme (“AGOP”) as per Market Rules.*

### **Variable OPEX**

7.7 Any **Variable OPEX** prudently incurred by the ASP for carrying out surprise tests by PSO or to comply with PSO’s activation instructions, will be passed through and fully recovered by the ASP.

### **Payment Regime**

7.8 For a given year, the ACP amount will be determined ex-ante (i.e. before the start of April of a given year) in accordance with the equation in **Section 7.4**, and the ASP will receive the pro-rated amount on a monthly basis during the year<sup>1</sup>. Any

<sup>1</sup> For example, for a FS generating unit with COD on 1 December 2024, if its pro-rated CAPEX is \$250/hour and first-year Fixed OPEX is \$100/hour, and with an Efficiency Factor 0.01, then its ACP for:

(a) Up till March 2025 will be at a rate equal to \$350/hour; and

positive difference between (a) the ACP amount received by the ASP, and (b) the EPCP amount as calculated by the equation in **Section 7.6**, will have to be refunded by the ASP.

7.9 As for Variable OPEX (refer to **Section 7.7**), the ASP may submit a claim to EMC with supporting documents within three (3) months of incurring the costs (“**Reimbursement Claim**”). Any net revenue received by the ASP under the Market Rules from running up the relevant FS generating unit(s) due to PSO’s surprise testing or activation instructions, will be accounted for and fully used to reduce the Reimbursement Claim amount.

7.10 The ASP will be allowed to recover exogenous costs arising from changes in government directives or policies such as a change in taxation that cannot be reasonably accounted for adequately by the MAS Core Inflation rate, provided such costs were unavoidable and prudently incurred by the ASP.

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(b) From April 2025 to March 2026, assuming 2024 MCI is 2%, will be at a rate equal to \$351/hour.

## SECTION 8: OTHER INSTRUCTIONS

### *Early Engagement with Relevant Authorities*

8.1 Participants are strongly encouraged to commence engaging (a) the National Environment Agency on Energy Efficiency Opportunities Assessment, (b) the Singapore Civil Defence Force on Quantitative Risk Assessment, (c) the Urban Redevelopment Authority on Environmental Impact Assessment, as well as (d) PowerGas and SP PowerGrid on its gas and electricity connections respectively.

8.2 Where the proposed FS generating units are to be installed at an existing site that has been designated as a Special Infrastructure under the Infrastructure Protection Act (“**IPA**”), the proposed installation works may qualify as Major Renovation<sup>2</sup> under the IPA. Hence, Participants should also commence engaging with the Centre for Protective Security under the Singapore Police Force to ascertain whether a Security-by-Design review is required.

### *Performance Bond*

8.3 A Participant shortlisted by EMA to be awarded the 25-year FS ASC for the Base Capacity shall furnish a Performance Bond in favour of EMA for a sum of S\$10 million within seven (7) business days of being notified of being shortlisted, unless otherwise approved by EMA. Otherwise, EMA may disqualify the Participant. A Performance Bond in favour of EMA for the sum of S\$10 million may also be imposed if EMA decides to exercise an option for Optional Capacity.

8.4 EMA will draw down S\$200,000 per day (or part thereof) of delay in commencing COD beyond the agreed date.

8.5 The Performance Bond will be released by EMA upon COD.

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<sup>2</sup> Under the IPA, a Major Renovation means:

- (a) in the case of any part of a building that contains a critical asset, or is a public place or is otherwise accessible to vehicles or vessels, any alteration, extension, repair, dismantling or demolition works carried out to the structure or glazing of that part;
- (b) any installation or relocation of a critical asset in the premises; or
- (c) any alteration, extension, dismantling or demolition works affecting the perimeter of the premises.

## SECTION 9: EVALUATION FRAMEWORK

9.1 Proposals received will be grouped into two categories based on the proposed COD for the Base Capacity:

- (a) COD in 2024; and
- (b) COD post-2024.

9.2 Proposals with COD in 2024 will be evaluated first. Proposals with COD post-2024 will be evaluated only if there are no acceptable proposals with COD in 2024.

9.3 Each proposal will be evaluated based on the following criteria.

### ***Critical Criteria***

9.4 Proposals that do not meet the following critical criteria will be disqualified and will not be considered for further evaluation:

- (a) **Timely Submission of Required Documents:** The Participant must submit the required forms and documents for the RFP by no later than 3.00pm (Singapore time) on 1 March 2024.
- (b) **Legal and Regulatory Requirements:** The Participant must be a Singapore-incorporated company that will be (a) the electricity licensee authorised by EMA to generate electricity from the proposed FS generating units, and (b) the contractual party to the FS ASC to be entered into with EMC in accordance with the Market Rules.
- (c) **Financial Ability and Experience:** The Participant must demonstrate its ability to finance the proposed generation business and have the capability and experience to perform its duties under the Electricity Act and the electricity licence.
- (d) **Meeting Performance Standards:** The Participant must demonstrate that the technology proposed will be able to meet the performance standards stipulated in this document and the requirements in the Transmission Code.
- (e) **Track Record:** Proposals from Participants who are debarred in the RFP's time period will be rejected.

9.5 If Participants plan to submit multiple proposals, they shall consolidate all the proposals under a single application and clearly indicate the Technical Proposal

and Financial Proposal corresponding to its proposal package, and whether the proposals can be adopted collectively or otherwise.

### Evaluation Criteria

9.6 Proposals with COD of the Base Capacity in 2024 that meet the Critical Criteria will be evaluated based on the evaluation criteria in **Table 3a**.

**Table 3a: Evaluation Criteria for Base Capacity Proposals under Section 9.1(a)**

S/N	Criteria	Weightage	Description
1	Price Competitiveness	90%	Proposals will be assessed based on the total lifecycle cost of the Base Capacity in nominal terms based on the figures submitted by Participants under <b>Section 7.2</b> .
2	Proposal Quality	10%	Proposals with additional value-added service will score more favourably.

9.7 Proposals with COD of the Base Capacity post-2024 that meet the Critical Criteria will be evaluated based on the criteria in **Table 3b**.

**Table 3b: Evaluation Criteria for Base Capacity Proposals under Section 9.1(b)**

S/N	Criteria	Weightage	Description
1	Price Competitiveness	60%	Proposals will be assessed based on the total lifecycle cost of the Base Capacity in nominal terms based on the figures submitted by Participants under <b>Section 7.2</b> .
2	Proposal Quality	40%	(30%) Proposals with projected COD of the Base Capacity closer to the start of 2025 will score more favourably.  (10%) Proposals with additional value-added service will score more favourably.



## APPENDIX 1.1: CONTRACT PRICE FOR FAST START BASE CAPACITY

Date: [\_\_\_\_\_]

To: **Energy Market Company Pte Ltd ("EMC")**

4 Shenton Way  
#03-01 SGX Centre 2  
Singapore 068807

Dear Sirs,

1. The capitalised terms in this letter have the same meaning as defined in EMC's RFP Document.
2. Upon consideration of EMC's requirements for the Project, we hereby offer to carry out the Works in accordance with the terms set out under the RFP Document.
3. The total lifecycle CAPEX for Base Capacity is as follows:  
**SINGAPORE DOLLARS** \_\_\_\_\_  
(S\$ \_\_\_\_\_).
4. The first year OPEX for Base Capacity is as follows:  
**SINGAPORE DOLLARS** \_\_\_\_\_  
(S\$ \_\_\_\_\_).
5. The Efficiency Factor is as follows: \_\_\_\_\_.
6. We hereby agree to be bound by the terms of the Contract should our Proposal be accepted by EMC.
7. We confirm that the Contract Price includes all applicable taxes and duties, excluding GST. Upon completion of the Works, EMC will not be required to make any payments other than or in addition to the amounts set out above.

For and on behalf of  
**[Name of RFP Participant]**

\_\_\_\_\_  
Name:

Designation:

Date: [\_\_\_\_\_]

## APPENDIX 1.2: CONTRACT PRICE FOR FAST START OPTIONAL CAPACITY

Date: [ \_\_\_\_\_ ]

To: **Energy Market Company Pte Ltd ("EMC")**  
4 Shenton Way  
#03-01 SGX Centre 2  
Singapore 068807

Dear Sirs,

1. The capitalised terms in this letter have the same meaning as defined in EMC's RFP Document.
2. Upon consideration of EMC's requirements for the Project, we hereby offer to carry out the Works in accordance with the terms set out under the RFP Document.
3. The total lifecycle CAPEX for Optional Capacity is as follows:  
**SINGAPORE DOLLARS** \_\_\_\_\_  
(S\$ \_\_\_\_\_).
4. The first year OPEX for Optional Capacity is as follows:  
**SINGAPORE DOLLARS** \_\_\_\_\_  
(S\$ \_\_\_\_\_).
5. The Efficiency Factor is the same as that in **Appendix 1.1** (Contract Price for Fast Start Base Capacity).
6. We hereby agree to be bound by the terms of the Contract should our Proposal be accepted by EMC.
7. We confirm that the Contract Price includes all applicable taxes and duties, excluding GST. Upon completion of the Works, EMC will not be required to make any payments other than or in addition to the amounts set out above.

For and on behalf of  
**[Name of RFP Participant]**

\_\_\_\_\_  
Name:

Designation:

Date: [ \_\_\_\_\_ ]

## APPENDIX 2.1: COMPLIANCE CHECKLIST FOR FAST START BASE CAPACITY

Date: [ \_\_\_\_\_ ]

To: **Energy Market Company Pte Ltd (“EMC”)**  
 4 Shenton Way  
 #03-01 SGX Centre 2  
 Singapore 068807

Dear Sirs,

1. The following table describes:
  - (a) the Proposal’s compliance with the RFP Document, including the Technical Specifications and Requirements; and
  - (b) our understanding and agreement with the terms of the Contract, as it would be formed if its Proposal is accepted by EMC.
2. Where we understand and/or agree with the contents of the Clause and/or the Proposal complies with the Clause, we shall indicate an “X” marking in the corresponding “Comply” box.
3. Where we disagree with the contents of the Clause and/or our Proposal does not comply with the Clause, we shall indicate an “X” marking in the corresponding “Non-Comply” box. We have provided detailed explanations for all Clauses that have “X” markings in the “Non-Comply” box.

### RFP Document

Clause No.	Clause Description	Compliance		Remarks; Explanations & Counter Proposal
		Comply	Non-Comply	
1	INTRODUCTION			
2	CONSIDERATIONS AND TIMELINE FOR PROCURING FAST START ANCILLARY SERVICE			
3	INTERPRETATION			
4	INSTRUCTION TO RFP PARTICIPANTS			

4.1	Proposal Requirements			
4.2-4.8	Submission of Proposal			
4.9-4.12	Discretion to Award			
5	CONTRACT TERMS			
5.1-5.2	Precedence			
5.3-5.6	Participant's General Obligations			
5.7-5.8	Variation(s) to RFP Document			
5.9-5.11	Indemnity and Limitation of Liability			
5.12-5.17	General			
6	TECHNICAL PROPOSAL			
6.1-6.2	Technical Proposal			
6.3-6.4	FS Generation Capacity and Delivery Timeline			
6.5	Planting Site			
6.6-6.10	Technical Capability			
6.11-6.14	Operating and Testing Regime			
7	FINANCIAL PROPOSAL			
7.1-7.2	Financial Proposal			
7.3-7.6	Capability Payment			
7.7	Variable OPEX			
7.8-7.10	Payment Regime			
8	OTHER INSTRUCTIONS			
8.1-8.2	Early Engagement with Relevant Authorities			
8.3-8.5	Performance Bond			

For and on behalf of  
**[Name of Participant]**

\_\_\_\_\_  
 Name:  
 Designation:  
 Date: [ \_\_\_\_\_ ]

## APPENDIX 2.2: COMPLIANCE CHECKLIST FOR FAST START OPTIONAL CAPACITY

Date: [ \_\_\_\_\_ ]

To: **Energy Market Company Pte Ltd (“EMC”)**  
 4 Shenton Way  
 #03-01 SGX Centre 2  
 Singapore 068807

Dear Sirs,

1. The following table describes:
  - (a) the Proposal’s compliance with the RFP Document, including the Technical Specifications and Requirements; and
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8.3-8.5	Performance Bond			

For and on behalf of  
**[Name of Participant]**

\_\_\_\_\_  
 Name:  
 Designation:  
 Date: [ \_\_\_\_\_ ]