

# JURONG ISLAND RENEWABLE ENERGY REQUEST FOR PROPOSAL

## INFORMATION

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### 1. INFORMATION

#### 1.1. OBJECTIVE

Jurong Island Renewable Energy RFP is jointly called by the Energy Market Authority (“**EMA**”) and JTC Corporation (“**JTC**”) to: (i) identify innovative research, development and demonstration projects relevant to the energy sector (refer to the Challenge Statements below); and (ii) provide funding support in accordance with the terms of the applicable contract for awarded projects.

- a) Innovative renewable energy (RE) solutions. Potential solutions include but not limited to (i) innovative RE technologies suitable in Singapore’s context; (ii) innovative RE deployment options that tap on existing infrastructure and space on and around Jurong Island (e.g. pipe racks, storage tanks, sea space); (iii) mobile RE solutions; and (iv) energy conversion technologies (e.g. solar to steam and solar to hydrogen).
- b) Innovative energy storage systems (ESS). Potential solutions include but not limited to (i) innovative solutions to improve ESS’s energy density, performance, safety and/or land footprint; and (ii) innovative ways to utilise ESS in supporting the grid.
- c) Innovative low carbon solutions. Potential solutions include but not limited to (i) hydrogen; and (ii) carbon capture, storage and utilisation (CCSU) technologies, but such technologies are to demonstrate financial sustainability in commercial operations.

#### 1.2. ELIGIBILITY

The Applicant shall be led by a private sector company, preferably a **local<sup>1</sup> Small and Medium Enterprise<sup>2</sup> (SME)**, and can partner other private sector companies, Institutes of Higher Learning (IHLs), Research Institutes (RIs), public sector agencies and/or not-for-profit organisations. For non-local-SME-led Applicant, local SME(s) should be involved in a substantive and meaningful way (e.g. core technology must be from/or co-developed with local SME(s)).

#### 1.3. FUNDING

The requested funding from EMA and JTC should be reasonably justified. This covers manpower, equipment, software, consumables, testing and certification, consultancy by relevant experts, intellectual property and project related expenses. (Please refer to Annex A for the guide on supportable costs.) All significant expenses should be justified with supporting documentation e.g. quotes.

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<sup>1</sup> Local applicants should have ≥ 30% of its ordinary shares held directly or indirectly by Singaporeans/Singapore Permanent Residents. This is determined by the ultimate individual ownership of the applicant

<sup>2</sup> A SME is defined as having (i) Group Annual Sales Turnover of not more than S\$100 million; or (ii) Group Employment Size of not more than 200 workers.

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Proposals shall not be funded or be currently considered for funding by other agencies, as detailed in Clause 3.4.

SME-led awardees will qualify for up to 70% funding support of the approved supportable cost of the project, while non-SME-led awardees will qualify for up to 50% of the same.

Funding awarded shall not be used to support overseas R&D activities. The project team and R&D activities must be based in Singapore to ensure development of local capabilities.

The project may include research collaborations with local or overseas organisations. However, contracting out the whole or substantial part of the research work is not permitted.

All assets acquired using the funding must be located in Singapore and maintained within the control of the awardees during the duration of the project.

### 1.4. DURATION

The project duration, including test-bedding, completion of final report and all related project activities, shall be up to two (2) years, with a maximum extension of not exceeding six (6) months. The proposed project schedule must be realistic, allowing sufficient time for the preparation of final report and for the review of project results.

### 1.5. SELECTION PROCESS

Proposals will be evaluated against the following criteria:

- a) High-technical-merit research and innovation that is novel, internationally competitive and directly addresses the identified challenge(s);
- b) Economic benefits to Singapore in terms of capabilities and manpower development and system level benefits to Jurong Island ecosystem;
- c) Strong and clear demonstration of potential commercial viability and advantages of the proposed solution over existing technologies and practices; and
- d) Excellent execution by an experienced research team with a good track record and whose members have the relevant and complementary expertise.

Shortlisted Applicants will be required to present their proposal(s) to a Project Evaluation Panel (“PEP”) for further evaluation, in accordance with Clause 2.4.

### 1.6. INVOLVEMENT OF RELEVANT PUBLIC AGENCIES

EMA and JTC shall reserve the right to inform and involve relevant public agencies in the project if the proposal is supported. This is to: (i) facilitate regulatory acceptance; and (ii) steer development to better meet end-user requirements.

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### 1.7. AWARDING OF PROJECTS

For each Challenge Statement, EMA and JTC have the sole discretion to: (i) award to more than one Applicant; (ii) award the project(s) in parts; (iii) award funding separately under separate contracts for a given project; or (vi) not award if EMA and JTC decide that none of the received proposals attains the minimum required quality score. All awarded projects shall be announced on EMA's corporate website and GeBIZ through JTC.

Successful awardee(s) will be required to hold a valid account with GeBIZ. Those who do not hold a valid registration are advised to apply for the registration at the earliest possible opportunity.

### 1.8. FORMAL AGREEMENT

Applicants are required to submit only one (1) proposal. Following shortlisting, presentation to the PEP and amendment (if any) to the submitted proposal(s), EMA and JTC will issue contractual document(s) to the successful Applicant for the funding amount.

EMA/JTC (as the case may be) may at their respective discretion require the successful Applicant to sign a formal agreement in respect to the funding awarded and the successful Applicant shall do so without unnecessary delay.

### 1.9 INTENTION TO FUTHER DEVELOP AND COMMERCIALISE

In the event that the Applicant(s) decides not to pursue further development or commercialisation of the solution, EMA or JTC reserves the rights to further develop, scale-up and implement the developed solution.

## 2. INSTRUCTIONS

### 2.1 ELECTRONIC SUBMISSIONS

Proposals shall be submitted to the IPI Singapore's website ([jirfp.innovation-challenge.sg](http://jirfp.innovation-challenge.sg)) by 1600hrs (Singapore Time) of the Closing Date stipulated on the IPI Singapore's website or any extended date notified through Addendum/Corrigendum. All proposals shall use the provided proposal templates, failing which EMA and JTC reserve the right to disregard the submission.

### 2.2 DISCREPANCIES AND REQUESTS FOR CLARIFICATION

The documents forming the RFP and the contracts formed under the respective contractual documents are all to be taken as mutually explanatory of one another. The Applicant shall study all documents carefully and all discrepancies identified and requests for clarification shall be submitted in writing to EMA and JTC through the following link (<https://form.gov.sg/61711bd9a4b4e900123586ff>), stating the issue requiring clarification, with at least ten (10) working days before the Closing Date or

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any extended date ("Clarification Deadline"). EMA and JTC shall have the discretion to: (i) determine how any discrepancy identified shall be resolved; and (ii) disregard all requests for clarification received after the Clarification Deadline.

JTC and EMA will co-administer and monitor the progress of the project(s) after they have been awarded and the contractual documents have been issued. Unless prohibited by law, no rule of construction shall apply to the disadvantage of JTC and EMA.

### **2.3 RESPONDING TO EMA AND JTC**

Upon the Closing Date of the Jurong Island Renewable Energy RFP, if EMA and JTC identify discrepancies or have doubts about any part of the Applicant's Proposal, EMA and JTC will seek clarification in writing. Applicants' responses should be received within the stipulated deadline, failing which EMA and JTC shall have the discretion to disregard the Proposal.

### **2.4 PRESENTATION**

Shortlisted Applicants shall be required to present their submitted proposal(s) to the PEP at a date and time ("Presentation Date") arranged by EMA and JTC. More details will be provided to shortlisted Applicants. Following such presentation, EMA and JTC may require shortlisted Applicants to amend to their submitted proposal(s) for further evaluation.

## **3. ELIGIBILITY**

### **3.1 DEBARMENT STATUS**

Applicants who are debarred from participating in public sector tenders are not eligible to participate in the Jurong Island Renewable Energy RFP. When an Applicant is: (i) debarred on or after the Closing Date, the Applicant's Proposal shall be precluded for further evaluation; (ii) debarred during the term of the awarded project period, the project shall be terminated. If a proposal is submitted without explicitly mentioning that the Applicant is liable for debarment by the Standing Committee on Debarment (SCOD), EMA and JTC shall treat the submission as an express continuing declaration by the Applicant that the applicant is in fact eligible to participate in this Joint Innovation Call and, if such a declaration is discovered to be false, EMA and JTC will be entitled to, at any time, to reject the Applicant's Proposal or rescind/terminate any contracts entered without EMA and JTC being liable therefor in damages or compensation.

### **3.2 COMPLIANCE TO INSTRUCTIONS**

Any proposal not submitted according to the instructions contained in the form(s) prescribed in Jurong Island Renewable Energy RFP, or which attempts to vary any provision of or which fails to fully comply with this Innovation Call, is liable to be rejected.

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### 3.4 NO DOUBLE FUNDING

Applicants must declare in the proposal submission if: (i) they have received funding from other public agencies for the same or similar scope of work; or (ii) they have applied to other public agencies for funding using the same or similar scope of work. If any Applicant is found to be untruthful in its declaration, its proposal shall be rejected.

### 3.5 COMPANY SHAREHOLDING AND FINANCIAL SOLVENCY DECLARATION

Applicants are required to submit their latest ACRA details and a declaration of financial solvency as part of the proposal submission. This is **compulsory**.

## 4. OTHER INFORMATION

### 4.1 SUPPORTABLE PROJECT STAGES

This RFP is targeted to support the development of innovative, mid-to-high technological readiness level (TRL) technologies for onsite trial and deployment. Refer to **Annex A** for more details on TRL.

Applicants are required to indicate the developmental stage of their proposal (i.e. prototype or demonstration stage). The submission requirements for the various developmental stages are listed in the table below.

Applicants supported at the prototype stage may apply for further funding support following the completion of the project, subject to approval by the project review committee.

Developmental Stage	Submission Requirements
Prototype Stage	<ul style="list-style-type: none"><li>• <b><u>Scope</u></b>: Applicant has developed a Proof-of-Concept solution and seeks the development of prototype for industry demonstration.</li><li>• Target industry end-user(s) shall be indicated in the proposal. Proposals with letter of intent and/or contributions from industry partner(s) would be favourably assessed, but not mandatory.</li><li>• There should be an articulation of commercialisation plan. Applicants may update the commercialisation plan at the end of the prototype stage.</li></ul>

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	<ul style="list-style-type: none"><li>• Company should identify first trial partner upfront or within 12 months after the Letter of Award or upon completion of the prototype, whichever earlier.</li></ul>
Demonstration	<ul style="list-style-type: none"><li>• <b>Scope:</b> (i) Applicant has developed a prototype and seeks to demonstrate the solution, or (ii) demonstration of the solution has been conducted overseas and localisation of the solution is required. If latter, proposal shall clearly indicate the adaptations required for localisation.</li><li>• Industry end-user(s) to demonstrate the solution (preferably a Jurong Island company) must be identified. A letter of intent and contribution from the identified industry end-user(s) must be submitted as part of the proposal.</li><li>• Commercialisation plan and business model to be clearly articulated. Company should secure first commercial contract/deployment within 24 months after the completion of the demonstration project.</li></ul>

### 4.2 CLAIMS

A project milestone-based payment scheme will apply to all successful awardee(s), with payment due only upon the completion of each project milestone by successful awardees(s) in accordance with the agreed timeline and requirements, to the satisfaction of EMA and JTC who will confirm this in writing with the successful awardee(s) when applicable. Awardees are required to engage 3<sup>rd</sup> party auditors to validate their claim amounts for each claim submission.

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### Annex A

#### GUIDE ON SUPPORTABLE COSTS OF AWARDED PROJECT(S)

Eligible Expenses	Notes (e.g. criteria, examples)
Applicant's Staff Salary*	<ol style="list-style-type: none"> <li>Expense-specific criteria:                             <ul style="list-style-type: none"> <li>Staff has to be a permanent employee</li> <li>As a guide, salaries for top management and shareholders should not be supported as they are deemed to have vested interests in project success</li> <li>Qualifying costs include actual salary of employee, employer's CPF contribution and annual wage supplement (aka 13-month bonus)</li> <li>Should the personnel involved be part-timers, support will be pro-rated according to their involvement in the project</li> <li>Transport and telephone allowances, insurance and medical claims are not supportable</li> </ul> </li> <li>Approved fund per employee is capped at \$10,000/month (based on reimbursement mode)</li> </ol>
Hardware/ Software	<ol style="list-style-type: none"> <li>Expense-specific criteria:                             <ul style="list-style-type: none"> <li>Must not be used/ deployed overseas</li> </ul> </li> <li>Calculation Method: No pro-ration</li> <li>Examples:                             <ul style="list-style-type: none"> <li>Hardware: Purchase price, insurance, delivery, handling and installation charges, cost to lease the equipment for use during the project</li> <li>Software: Purchase price, software subscription cost, customised software (e.g. requirement gathering, development of software, data migration, UAT)</li> </ul> </li> <li>Not supportable:                             <ul style="list-style-type: none"> <li>Maintenance cost</li> </ul> </li> </ol>
Professional/ Consultancy Fee	<ol style="list-style-type: none"> <li>Best practice:                             <ul style="list-style-type: none"> <li>Consultancy man-day rate capped at \$1,000</li> <li>E.g. Qualifying Cost (QC) = Man-day Rate (capped at \$1,000) x No. of Supportable Man-day(s)</li> </ul> </li> <li>Examples:                             <ul style="list-style-type: none"> <li>Consultancy, prototyping</li> </ul> </li> </ol>
Audit Fee*	<ol style="list-style-type: none"> <li>Expenses made to third-party auditor for purpose of fund disbursement.</li> <li>Fund cap at \$1,800 per audit claim</li> </ol>
Training*	<ol style="list-style-type: none"> <li>Course fees payable to a third-party vendor.</li> <li>Supportable only if training is an intrinsic component of project.</li> </ol>
Intellectual Property Acquisition	<ol style="list-style-type: none"> <li>Calculation Method: Pro-rate based on useful life:                             <ul style="list-style-type: none"> <li>Example: QC = Supportable cost * Project duration in months /Useful life (i.e. 60 months)</li> </ul> </li> </ol>

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	<ul style="list-style-type: none"><li>• A shorter amortization period (i.e. 36 to 48 months) can be considered with good justification (i.e. technological advances)</li></ul> <p>2. Example:</p> <ul style="list-style-type: none"><li>• Acquisition of Intellectual Property Rights for new technology deployment</li></ul>
Intellectual Property Registration	<p>1. Only supportable for key markets.</p> <p>2. Examples:</p> <ul style="list-style-type: none"><li>• Patent search and application costs, registration and related costs for trademarks and registered designs</li></ul>
Materials & Consumable	<p>1. Examples:</p> <ul style="list-style-type: none"><li>• Physical components required for the project's development work and/or fabrication of prototypes, delivery, and handling charges</li></ul>
Testing & Certification	<p>1. Supportable only if testing &amp; certification is an intrinsic component of project.</p> <p>2. Examples:</p> <ul style="list-style-type: none"><li>• Testing and certification costs associated with ensuring that the delivery of products, processes and services meet the desired standards.</li></ul>

**Note:** Items marked with asterisk "\*" will be further reviewed on the applicability of the supportable fund for projects that are eventually funded by JTC solely.



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### Annex B

#### Technology Readiness Level (TRL)

TRL	Description	Definition
0	Idea	Unproven concept, no testing has been performed
1	Basic Research	Basic principles postulated and observed but no experimental proof available
2	Applied Research	Concept and application have been formulated
3	Critical Function	First Laboratory test completed; proof of concept
4	Concept Validation	Small Scale Prototype built in a laboratory environment; technology validated in laboratory
5	Validation of Integrated System	Component and/or validation in a relevant environment
6	Verification of Integrated System	System model or prototype tested in intended environment close to expected performance
7	Demonstration System	Operating in operational environment at pre-commercial scale
8	System Completed and Qualified	Manufacturing issues solved
9	Full commercial application	Technology available for consumers

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### Annex C

#### FREQUENTLY ASKED QUESTIONS

##### **Submission**

**Q1:** I am from academia and am hoping to use my earlier research outcomes to develop into a product/solution that can be used in the energy sector. Can I apply?

**A1:** The proposal should be led by a private sector company.

**Q2:** Can I include overseas conference travel expenses in the budget?

**A2:** No.

**Q3:** Who will own the Intellectual Property (IP) generated from the project?

**A3:** As the government will be contributing significant resources, this will jointly be owned by the Applicant and EMA/JTC (as the case may be) and be in any case subject to the terms of the contractual document(s). Notwithstanding the provisions governing IP in the contractual document(s) issued, the Government and public sector agencies shall reserve at minimum, a non-exclusive, non-transferable, perpetual, irrevocable, worldwide, royalty-free right and licence to use, modify, reproduce and distribute the Foreground IP (i.e. IP arising from the awarded projects) for non-commercial, R&D and/or educational purposes only.

**Q4:** Is there a maximum cap on proposal budget?

**A4:** No, there is no maximum cap on proposal budget. There is funding percentage for different applicants as per Clause 1.3. Applicants will need to provide justifications to the proposed budget and support with relevant documents/ quotations.

**Q5:** How can IHLs/RIs be involved in the project?

**A5:** IHLs and RIs can provide consultancy and engineering support to the project.

**Q6:** I intend to submit a proposal but would like to vary some of the terms in the issued RFP document(s). Is this possible?

**A6:** No. The terms in the issued RFP document(s) shall apply to all applicants across the board to ensure equal treatment.

**Q7:** Are any avenues available to me if I missed the deadline to submit my proposal?

**A7:** All proposals submitted after the stated deadline shall not be evaluated.

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### **Post Award**

**Q8:** Will I be paid if I cannot meet the timetable for the deliverables in the final award document(s)?

**A8:** EMA and JTC shall only be obliged to reimburse successful awardees: (i) in accordance with relevant schedule or provisions governing payment in the contractual document(s); and (ii) subject to EMA and JTC's satisfaction and acceptance of the completion of the relevant milestones and/or deliverables.

**Q9:** What is the next step if a solution is developed?

**A9:** Awardees should drive the commercialisation of the developed solution. EMA and JTC may help to facilitate regulatory process if necessary.

**Q10:** My project team consists of members from different organisations. How will disbursement of funds take place?

**A10:** EMA and JTC will disburse payments pursuant to the contractual document(s) only to the awardee (the party that signed the award document) and not to individual members of the team.