



## **JTC INNOVATION GRANT CALL ON SUSTAINABLE SOLUTIONS**

### **1. PROBLEM STATEMENT**

Develop and pilot innovative solutions that improve the productivity and reduce the reliance on manpower, including sustainable solutions for facility management and maintenance, and improve occupants' comfort level and experience within a building.

### **2. INTRODUCTION**

The Innovation Grant Call is an initiative under JTC's I<sup>3</sup> Partnership Programme<sup>1</sup> which has been set up to facilitate and fund technology owners to undertake proof-of-concept to test-bedding and pilot innovative solutions which aim to improve the performance of sustainability in JTC estates and developments.

The I<sup>3</sup> Partnership Programme focuses on three main sustainability themes. These are:

- Resource Efficiency

Develop green buildings solutions by reducing water and energy consumption, allow efficient waste treatment or harvest green energy to reduce power consumption from grid.

- Sustainable Urban Solutions

Develop solutions that can mitigate urban challenges and cultivate green practices.

- Building Efficiency

Develop sustainable facility management solution by reducing reliance on manpower, improve productivity and quality of service as well as improving the occupants' experiences.

### **3. OBJECTIVE OF GRANT CALL**

JTC aims to identify technology owners and research institutions with innovative concepts, and co-fund in applied research & development (R&D), test-bed and/or pilot demonstration in selected JTC developments. The intention is to crowdsource for effective solutions and deploys them in JTC's existing and new developments.

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<sup>1</sup> Press Released on 3 June 2014 on New Government Fund for companies to test-bed innovative green solutions.  
[http://www.jtc.gov.sg/news-and-publications/press-releases/Pages/20140603\(PR1\).aspx](http://www.jtc.gov.sg/news-and-publications/press-releases/Pages/20140603(PR1).aspx)

The table below lists some of the challenges and possible outcomes that could be considered.

Challenges	Possible Outcomes
Shortage of labour and high labour cost in areas of cleaning and security surveillance	Automation, intelligent analytics / integrated sensor technologies / robotic solutions, thereby reducing manpower and operational costs by 30%
High costs incurred for façade cleaning especially façade with irregular shape	Automation for building façade cleaning to reduce operational costs by 30%
High cost and laborious work for inspection in areas where materials or equipment are located in out of reach areas (e.g. building façade, obstructed corner, high ceiling, etc.)	Automation, robotic / drones with intelligent analytics solution for inspection to reduce manpower by 10%
Increasing needs to focus on consumers' comfort levels in buildings	Provision of timely feedback on occupants' comfort experience or platforms that enable occupants' to connect to the buildings ecosystem such as apps <sup>2</sup> that allow occupants to adjust/control/monitor building systems and shared facilities such as air-conditioning in seminar rooms
Challenge to monitor and control access and efficient use of energy and other utilities	Creation of information systems that connect and allow smart access control, monitoring of energy consumption and enable service log of shared amenities/utilities for data analysis on energy savings

*Table 1 - Challenges and Possible Outcomes of Problem Statement*

Applicants may provide alternative solutions with incremental achievement of results in reduction of manpower and building operational costs.

#### 4. ELIGIBILITY CRITERIA

- **Type of Companies**

Both local and foreign enterprises and research institutions, including start-ups and incubators registered with the local authorities in the respective countries are welcome to participate. Research institutions must declare if the proposal has received funding from other sources.

- **Project Team**

Principal investigator and project team shall be identified for each proposal. JTC reserves the right to appoint/nominate a co-project coordinator<sup>3</sup> to be part of the project team who will jointly oversee the project R&D and test-bedding phases during the project period.

<sup>2</sup> Apps created shall have the flexibility of integrating with any existing apps that are already in place for that building.

<sup>3</sup> Project co-ordinator appointed by JTC shall be from JTC or JTC-I<sup>3</sup> Research Centres.

- **Type of Solutions**

Proposed solutions shall adhere to the focus areas of this grant call. It shall be technologies that are at proof-of-concept stage and yet to be proven their effectiveness in Singapore's local tropical climate. It shall involve two phases and shall not be off-the-shelf type of technologies:

- ***Phase 1: R&D***

Involves laboratory scale testing on the feasibility of the technologies. Proposal shall move to Phase 2 only upon successful completion and testing at Phase 1.

- ***Phase 2: Test-bedding***

Involves test-bedding of the technologies and solutions at JTC's sites, for demonstration and verification. Test-bedding must take place within JTC's developments to demonstrate proof of feasibility in Singapore's tropical climate.

- **Timeline**

The entire project duration (Phase 1 + Phase 2) shall be completed within 24 months.

- Phase 1: R&D

To be completed within a maximum of 12 months.

- Phase 2: Test-bedding

To be completed within a maximum of 12 months, including the installation, demonstration and verification of the technologies/ systems.

## 5. EVALUATION CRITERIA

The following are criteria which the panel of evaluators will consider in the evaluation of proposal:

- **Innovativeness**

Solutions have to demonstrate innovativeness, demonstrating how adoption of this solution would push technology and sustainability.

- **Ease of Implementation**

Solutions shall be implemented in existing buildings relatively seamlessly, with limited disruption to the operation and existing tenants.

- **Scalability**

Proposals shall take into consideration that solution proposed is scalable and replicable in other buildings/ developments.

- **Cost Effectiveness**

Solutions shall be cost effective as compared to conventional products and alternatives. Feasibility of commercializing this technology on a large-scale basis shall be taken into consideration.

- **Economic Value-Add**

Where applicable, applicants shall provide a projection of additional skilled professional jobs created in Singapore for Professionals, Managers and Engineers (PMEs) or the prospect of setting up of high value operations or headquarters in Singapore, when the solution is commercialized.

- **Location of R&D and Test-Bedding (Required)**

For applicants who have no presence in Singapore, final R&D phase shall be conducted in Singapore. All anticipated expenses to conduct the final R&D phase locally could be factored in as part of the funding request for evaluation.

All projects in the test-bedding phase must be conducted in Singapore. JTC will co-assess with the grant awardee on the suitability of the facility/ location site for deployment of the technology.

## 6. OTHER DETAILS

- **Timeline of Grant Call**

The grant call is opened from **4 January 2016 to 31 March 2016**. The deadline for submission is on **31 March 2016 at 16:00 hours** (Singapore time, GMT+8)

- **Submission Procedure**

Completed proposal applied using the template provided and submit through the website [JTC Grant Call.innoget.com](http://www.jtc.gov.sg/innonet.com). Submitters will be required to register with Innoget.com to submit a proposal.

- **Test-Bed Sites**

Potential awardees are expected to test-bed their solutions within JTC's developments in Singapore, including single building test-bed or estate-level test-beds.

Possible test-bedding sites include, but are not limited to:

- CleanTech Park (including CleanTech One, CleanTech Two and/or future developments)
- one-north
- JTC Summit<sup>4</sup>

(To find out more about CleanTech Park and one-north, refer to [http://www.jtc.gov.sg/about-jtc/Documents/JTC\\_Developments\\_for\\_Test-beddings.pdf](http://www.jtc.gov.sg/about-jtc/Documents/JTC_Developments_for_Test-beddings.pdf))

JTC reserves the right to select the facilities within JTC's developments for test-bedding phase of the project.

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<sup>4</sup> Refer to <http://www.jtc.gov.sg/industrial-land-and-space/pages/the-jtc-summit> for more information on the building.

- **Funding of Proposal**

Qualifying costs will include:

- Manpower costs/ Professional services (e.g. new headcounts specifically for this proposal or specific capabilities from 3<sup>rd</sup> party service provider)
- Equipment/ Software
- Intellectual Property (IP)

For applicants who have no presence in Singapore and are conducting the final R&D phase in Singapore, JTC may consider offering monthly stipend to the project team during this period or substitute the required expenses with in-kind consideration, such as providing access to shared resources and/or rental of laboratory space for the purpose of the awardee to complete the final R&D phase.

- **Disbursement of funds**

Applicants may receive funding up to 100% of the eligible qualifying costs, subject to evaluation and qualification by JTC's appointed officer and capped at SGD500,000 per proposal.

Applicants should indicate clearly the amount in Singapore Dollar (SGD) of funds required for each phase of the project (Phase 1: R&D and Phase 2: Test-Bedding).

Grant will be disbursed at a maximum of three defined milestones based on reimbursement. First milestone is defined as completion of Phase 1. Second milestone will be the installation of the technology/ solution for test-bedding and actual demonstration. The total grant disbursed in the first two milestones shall be capped at 50% of the total approved grant. The final milestone is the completion of the final deliverables indicated in the proposal.

The total funds requested shall not exceed the approved grant quantum.

- **Contact Person**

For further enquiries on this grant call, please contact JTC at [JTC\\_Grant\\_Call@jtc.gov.sg](mailto:JTC_Grant_Call@jtc.gov.sg)

- **Rights of Awarding**

JTC reserves the right to select proposals to be awarded the grant and close the grant call before the stipulated end date if sufficient proposals have been shortlisted. For the avoidance of doubt, JTC reserves the right not to award the grant to any proposal.