

# INNOVATION CALL TO DEVELOP AN AUTOMATED SYSTEM TO COLLECT AND PROCESS CROCKERY TO FACILITATE DOWNSTREAM CENTRALISED DISHWASHING

## 1. INTRODUCTION

The National Environment Agency (NEA) and Enterprise Singapore (ESG) have jointly launched an Innovation Call under the Gov-PACT initiative, to encourage greater use of technology and automation to raise productivity of the current system for the collection and processing of crockery for both offsite and onsite centralised dishwashing at hawker centres.

Interested qualifying parties are invited to submit proposals to develop an automated tray return system that can separate, sort and stack different crockery and cutlery.

## 2. PROBLEM STATEMENTS

Problem Statement	Description of the problem statement
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<p>To develop an automated system to collect and process crockery to facilitate downstream centralised dishwashing</p>	<p>Currently, it is labour intensive for the hawker centre cleaners to manually:</p> <ul style="list-style-type: none"> <li>• clear food remnants from the soiled crockery,</li> <li>• sort and stack the crockery on the conveyance line of the dish washing machines.</li> </ul> <p>The project aims to increase productivity of the current system for the collection and processing of crockery to facilitate downstream centralised dishwashing. It should be able to:</p> <ol style="list-style-type: none"> <li>a. receive trays with crockery and cutlery from patrons,</li> <li>b. separate food remnants from crockery and cutlery,</li> <li>c. sort and stack the different crockery and cutlery to be ready for both on-site and off-site centralised dishwashing (CDW) machine, and</li> <li>d. to further automate the loading of sorted &amp; stacked crockery and cutlery into an onsite CDW machine.</li> </ol>
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Please refer to the attached problem statement for the full details.

## 3. FUNDING SUPPORT

3.1 The call is targeted at Singapore registered SMEs/start-ups with the following funding support for successful applicants:

Organisation Type	Funding Supported
Local <sup>1</sup> SMEs / start-ups	Up to 70% of qualifying project cost

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<sup>1</sup> For SMEs, the companies must fulfil the following criteria:

**Note:** Foreign companies are invited to submit proposals. However, to qualify for Government's funding, foreign technology providers should work with Singapore SMEs / start-ups.

3.2 Qualifying cost components include:

Components	Description
<b>Manpower costs</b>	This only applies to employees directly involved in the project. This does not include employees employed for other job functions and/or job scopes outside of the proposal.
<b>Equipment/ Software (supported at up to 50% of qualifying costs)</b>	Core equipment/tools required for developing front-end/backend application ( <i>e.g. software/mobile application</i> ) and/or prototyping. This includes purchase price, and costs related to R&D and test-bed phases ( <i>e.g. delivery, installation, handling, etc.</i> ). Only project related technical software and equipment that is non-existing within the organisation may be supported. Operational costs such as cost of capital works, general infrastructure, general purpose IT communication equipment, office software and equipment, and furniture and fittings, etc. will not be supported.
<b>Testing and Certification</b>	Third-party testing and certification services to ensure that proposed solutions comply with required standards and regulations.
<b>Consultancy (Professors/ Experts)</b>	Consultancy or advisory cost for Professors/Experts may be supported if specifically relevant to meeting the milestones and deliverables of the project.
<b>Intellectual Property (IP)</b>	Licensing/Technology/Acquisition/Patent related costs in direct relation to the technology must be stated in proposal. Supporting documents such as a copy of the original source must be provided.

3.3 Funds will be disbursed at three project milestones on a reimbursement basis:

- a) **First milestone:** Completion of the Research & Development (R&D) phase.
- b) **Second milestone:** Completion of installation of the technology/solution for test-bedding and actual demonstration.
- c) **Third milestone:** Completion of the final deliverables for the project.

3.4 The total funds requested shall not exceed the approved quantum. Total funds disbursed at completion of first two milestones shall be capped at 50% of the total approved funding.

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- a) Registered and operating in Singapore, and
  - b) Have minimum 30% local shareholding, and
  - c) Have group annual sales turnover of not more than S\$100 million, or group employment of not more than 200 employees

- 3.5 There should be no request for additional funds unless there are strong and valid justifications. Any additional funding will be subject to NEA and ESG's approval. Companies are advised to provide thorough and accurate breakdown costs of their proposal during the submission.

#### **4. ELIGIBILITY INFORMATION**

##### **4.1 Project Team**

Project lead(s) and members of the problem team must be identified for each proposal.

##### **4.2 Type of Solutions**

The proposed solutions must address the requirements of the problem statements in this Innovation Call. They should fulfil the following criteria:

- a) Solutions must not be readily or commercially available in the market.
- b) Development of the solutions must not have commenced at the point of proposal submission.
- c) Technologies should aim to:
  - Enhance safety of operations; and/or
  - Reduce reliance of manpower; and/or
  - Improve quality, consistency and service delivery; and/or
  - Achieve cost-savings; and/or
  - Improve efficiency/productivity.

##### **4.3 Development and test-bedding of the solutions**

The development and test-bedding of the solutions could be carried out in the following phases:

- a) **Research and Development (R&D) Phase:** Involves the development of the solution and prototyping. Proposal shall proceed to the Test-bedding Phase only upon successful completion of the R&D Phase.
- b) **Test-bedding Phase:** Involves test-bedding of the proposed within NEA or relevant premises/sites in Singapore.
- c) **Pilot Deployment Phase:** NEA reserves the right to scale up and implement the proposed solution at subsequent stages should the successful applicant fulfil the scope of works and meet the deliverables specified in the Project Agreement, provided always that the expected outcomes are deemed to be in compliance with the Deliverables, timely and appropriate for implementation.

#### **5. EVALUATION CRITERIA**

Proposals will be assessed based on the following areas:

<b>Evaluation Criterion</b>	<b>Weightage (%)</b>
<b>1. Technical feasibility of solution</b> <ul style="list-style-type: none"> <li>effectively addresses the challenges and objectives of the problem statement</li> <li>whether a <u>transformative, innovative or incremental improvement</u> approach was taken and its <u>relevance</u> to Singapore's context and NEA or industry's needs</li> <li><u>operationally feasible</u> for deployment in an actual working environment</li> <li>poses <u>minimal/ no nuisance and disruption</u> to existing operation</li> <li><u>minimal alterations</u> to install</li> <li><u>estimated recovery time</u> in the event of a breakdown</li> </ul>	<b>40</b>
<b>2. Economic feasibility of solution</b> <ul style="list-style-type: none"> <li>estimated <u>commercial price / leasing price</u></li> <li>estimated <u>operating, life cycle costs and return on investment</u> upon deployment</li> </ul>	<b>20</b>
<b>3. Productivity gains</b> upon deployment ( <i>e.g. Creation of better jobs, Better job conditions for workers, Reduction in manpower required for current jobs, etc</i> )	<b>20</b>
<b>4. Capacity and expertise to execute project</b> <ul style="list-style-type: none"> <li>requisite <u>capabilities and committed resources</u> to undertake the research/innovation project</li> </ul>	<b>20</b>
<b>Total score</b>	<b>100</b>

## 6. RIGHTS OF AWARDING

NEA and ESG reserve the right to select proposals to be awarded. For the avoidance of doubt, NEA and ESG also reserves the right not to award funding to any proposal.

## 7. TIMELINE OF INNOVATION CALL AND TECHNICAL BRIEFING

7.1 The Innovation Call will be opened between 17 May 2019 and 23 July 2019 (*both dates inclusive*). The deadline for submission is on **23 July 2019 at 12 noon** (*Singapore time, GMT+8*).

7.2 A technical briefing will be held to provide potential proposers with more information. The details for the briefing are as follows:

<b>Date :</b>	11 Jun 2019 ( <i>Tuesday</i> )
<b>Time:</b>	3.30pm to 5pm
<b>Location:</b>	1 Fusionopolis Walk, #01-02 South Tower, Solaris, Singapore 138628 - Room: Pinnacle

Please register your interest here (*Step 1: Create an account in the portal and you will receive an email reply for the confirmation of the account creation; Step 2: Log in to the*

portal; Step 3: Click 'REGISTER' for the technical briefing). Registration would close on **24 May (Fri)**.

## **8. SUBMISSION PROCEDURE**

8.1 Submit your proposal using the **Application Form**, together with all supporting documents in the IPI Govt Pact portal (*Step 1: Create an account in the portal (if yet to do so), and you will receive an email reply for the confirmation of the account creation; Step 2: Log in to the portal; Step 3: Click 'APPLY'*). Proposers are to state clearly how it addresses the requirements of the problem statement.

8.2 The deadline for submission is **23 July 2019 at 12 noon** (Singapore time, GMT+8).

## **9. CONTACT PERSON**

For further enquiries on this Innovation Call, please email:

- [ATRS\\_Innovation\\_Call@nea.gov.sg](mailto:ATRS_Innovation_Call@nea.gov.sg) – National Environmental Agency for matters pertaining to the problem statements
  
- [Gov-pact@ipi-singapore.org](mailto:Gov-pact@ipi-singapore.org) – IPI Singapore for assistance on:
  - *Using the IPI portal for registration of technical briefing registration, submission of proposal, etc.*
  - *Matching technology partners to collaborate for this innovation call*
  - *Funding enquiry*