

GRANT CALL TO AUTOMATE THE COLLECTION AND PRE-PROCESSING OF SOILED CROCKERY FOR CENTRALISED DISHWASHING

1. INTRODUCTION

The National Environment Agency (NEA) and Enterprise Singapore (ESG) have jointly launched a Grant Call under the Gov-PACT initiative, to encourage greater use of technology and automation, and raise productivity for the collection and pre-processing of soiled crockery for both offsite and onsite centralised dishwashing at hawker centres, food courts and F&B establishments.

Interested solvers are invited to submit proposals:

To automate the collection and pre-processing of soiled crockery for centralised dishwashing

2. PROBLEM STATEMENTS

Problem Statement	Description of the problem statement
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<p>To automate the collection and pre-processing of crockery to facilitate downstream centralised dishwashing</p>	<p>Currently, although some hawker centres, food courts and F&B establishments are equipped with Automated Tray Return Systems (ATRS), cleaners are still required to conduct the following labour-intensive tasks:-</p> <ul style="list-style-type: none"> • clear food remnants from the soiled crockery at the ATRS, • sort and stack the crockery on the conveyance line of the dish washing machines. <p>The project aims to raise productivity and improve the service quality of cleaning service providers of hawker centres, food courts and F&B establishments. The stationary system(s) should be able to:</p> <ol style="list-style-type: none"> a. receive trays with crockery and cutlery from patrons, b. separate food remnants from crockery and cutlery, c. sort and stack the different crockery and cutlery to be ready for both on-site and off-site centralised dishwashing (CDW) machine, and d. to further automate the loading of sorted & stacked crockery and cutlery into an onsite CDW machine.
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Please refer to the statement details tab for more information.

3. FUNDING SUPPORT

- 3.1 Project lead(s) and members of the problem solver teams must be identified and clearly indicated for each proposal. Public researcher(s) from Institutes of Higher Learning (IHLs) and Research Institutes (RIs) may collaborate with enterprise(s) on these projects. Project teams should be enterprise-led.
- 3.2 Singapore-based enterprises can qualify for up to 80% funding support if development activities are performed in Singapore. This includes local SMEs/start-up¹, and foreign SMEs/startups² based in Singapore.
- 3.3 Solutions should also not be readily or commercially available in the market.
- 3.4 Qualifying cost components include:

Components	Description
Manpower costs	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.
Equipment/ Software (supported at up to 50% of qualifying costs)	Core equipment/tools required for developing front-end/back-end 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. <i>Note: Equipment purchased prior the notification date of award cannot be claimed.</i>
Testing and Certification	Third-party testing and certification services to ensure that proposed solutions comply with required standards and regulations.
Consultancy (Professors/ Experts)	Consultancy or advisory cost for professors/experts may be supported if relevant, to meeting the milestones and deliverables of the project.
Intellectual Property (IP)	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.

¹ For local SMEs/start-ups, the companies must fulfil the following criteria:

- 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

² For foreign SMEs/start-ups based in Singapore, the company must be registered in Singapore

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

3.6 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.

3.7 Development and test-bedding of the solutions

The development and test-bedding of the solutions could be carried out in the following phases, up to a period of 15 months, from notification of award.

- a) Development Phase: Involves the development of the solution and prototyping. Proposal shall proceed to the Test-bedding Phase only upon successful completion of prototyping.
- b) Test-bedding Phase: Involves test-bedding and user acceptance test of the proposed solution at relevant premises/sites in Singapore.
- c) Pilot Deployment Phase: Involves deployment of solution in “live” operation at designated premises/sites, ensuring that the expected outcomes are always met, fulfilling the scope of works and meeting the deliverables specified in the Project Agreement.

4. EVALUATION CRITERIA

Proposals will be assessed based on the following areas:

Parameters	Objective / Details	Required Information
1. Technical feasibility of solution (35%)		
Effectiveness in addressing the problem	Whether and how the proposed solution can address the requirements stated in the problem statements	<ol style="list-style-type: none"> 1. Shows how each of the requirements can be met, with relevant examples 2. Scalability of the solution
Operational Feasibility	To demonstrate the user friendliness of the system and strategies to ease the users in transiting to the proposed solution	<ol style="list-style-type: none"> 1. Stakeholder onboarding plan 2. Clear identification of potential users of this solution 3. Training plans across different user groups 4. Demonstrate ease of use 5. Shows how there is minimal/no nuisance and disruptions to existing operations 6. Shows how there is minimal/no alterations to existing infrastructure
2. Business feasibility of solution (30%)		
Commercialisation strategy	To demonstrate clear business strategies in the scale up use of this solution	Comprehensiveness on the business plan to scale up the developed solution (<i>e.g. target audience, potential prospects, sales & marketing channels, etc</i>)

Estimated Commercial cost and return of investment (ROI) upon implementation	To demonstrate ROI of the solution	Proposed business model with the following information: 1. Estimated Commercial Price: CAPEX or Subscription-based (<i>to indicate minimum committed time period</i>) 2. Estimated Operational and Maintenance cost 3. ROI calculations and assumptions made
3. Capacity and Expertise to execute projects (20%)		
Expertise to executive projects	Credibility of project consortium	1. Relevant project references 2. Credentials (CV) of project team members especially project manager/technical leads
Capacity to execute projects	Demonstration of capacity to undertake this project	1. Current and upcoming projects (<i>6 months</i>) that consortium is/will be involved in 2. Current and upcoming projects (<i>6 months</i>) projects that the project team manager/technical leads are/will be involved in
4. Clarity & Comprehensiveness of proposal and test plans (15%)		
Overall clarity and comprehensiveness of proposal	Demonstrate clarity and comprehensiveness in the proposal	1. Project management plan (<i>timeline, personnel involved at each phase, etc</i>) 2. Risk identification and mitigation (<i>Covering design risk, operational risk</i>)
Detailed plans for development, Test-bedding and Pilot deployment	Detailed plans for development, Test-bedding & Pilot deployment tests stating the purpose, objectives, scope, deliverables and outcomes	1. Development plan 2. Test-bedding plan 3. Pilot Deployment plan

5. 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.

6. DATES OF THE CALL AND TECHNICAL BRIEFING

6.1 The Call will be opened between 18 Feb 2021 and 5 May 2021 (*both dates inclusive*). The deadline for submission is on **5 May 2021 at 12pm**. (*Singapore time, GMT+8*).

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

Date:	2 March 2021 (Tue)
Time:	10.30 am to 11.30 am
Location:	The technical briefing will be held online via ZOOM . Please register your interest on the challenge portal , by 26 Feb 2021 (Fri)

	Thereafter, the meeting details and links will be sent to the registrants' email addresses. If you have registered for the briefing, but did not receive any email on the meeting details and links by 26 Feb 2021, do email us at oi@ipi-singapore.org and ATRS Innovation Call@nea.gov.sg
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7. SUBMISSION PROCEDURE

7.1 Submit your proposal via the **challenge portal** using the **Application Form (Proposal)** which can be found in the portal, together with all supporting documents.

- Step 1: Create an **account** in the **challenge 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 **challenge portal**;
- Step 3: Click '**Submit Proposal**'.
 - **Note:** Please refer to the **Proposal Submission General Instruction** for more information

8. CONTACT DETAILS

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
- oi@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 grant call*
 - *Funding enquiry*