CLOSING THE WASTE LOOP (CTWL)
RESEARCH & DEVELOPMENT (R&D) INITIATIVE

REQUEST FOR PROPOSALS (RFP) ON
LANDFILL AVOIDANCE AND VALUE RECOVERY FROM NON-INCINERABLE
WASTE
Instructions and Templates for Applicants

Table of Content

Part 1 General Instructions

Part 2 Format for Application (For Research Performers and Companies)

Part 3 Application for Enterprise Development Grant (EDG)
(For Singapore-owned Companies Only)

Appendix A EDG Checklist (Supplementary Document for EDG application)
Part 1 General Instructions

1. The CTWL R&D Initiative is a research grant scheme administered by the National Environment Agency (NEA) to fund research and development to develop technologies and solutions to tackle challenges posed by increasing waste generation, scarcity of resources and land constraints for waste management.

2. Potential applicants are invited to complete the survey form at FormSG https://form.gov.sg/5e55dcc2f64a66001167f7fb to indicate your interest.

3. The Secretariat may be reached via:

   Mr Chong Zhi Qiang          Mr Dylan Tan
   DID: 6708 6066              DID: 6731 9201
   Email: chong_zhi_qiang@nea.gov.sg   Email: dylan_tan@nea.gov.sg

   Please contact the Secretariat for enquiries regarding your applications or if clarifications are required.

4. The project proposals shall be submitted by the grant closing deadline as follows:

   a. A completed application via the Integrated Grant Management System (IGMS)
   b. All applications must be endorsed online by the Director of Research (or equivalent) in the IGMS.

5. The proposal(s) submitted will be subjected to international peer review and sent to an evaluation panel comprising academia and experts from the industry. All information needed for a proper and complete evaluation should therefore be included in the application to facilitate a good understanding of the project. Privileged or confidential information shall be clearly marked as confidential.

6. The applicant(s) shall agree that:

   a. The NEA is under no obligation to award research grant in whole or in part to any proposal;
   b. The applicant(s) shall abide by the decisions of the NEA; and
   c. The applicant(s) shall not take legal action against the NEA, the Peer Reviewer, or any member of the evaluation panel in relation to their role in evaluating and deliberating the project proposal.
Part 2  Format for Project Application

Submissions must be completed via the IGMS. This set of instructions is to be used in conjunction with the training manuals found on IGMS https://researchgrant.gov.sg/Pages/TrainingGuides.aspx for potential applicants.

Outline of submission in IGMS – Refer to Training Guide “Help guide for Potential Applicants”

In addition to the onscreen instructions, guidance to specific sections of the application is provided below. The section numbering is aligned with the training guide “Help guide for Potential Applicants” to facilitate the application process:

1. Research Details

   For section 1.3 Research Details, the applicant(s) may provide other potential contribution when filling up “potential application/ exploitation of research” as follows:

   a. the contributions of the project in terms of science, technology, capability development, economic and other benefits to Singapore.

   b. other contributions of the project (e.g. building up research infrastructure, trained manpower in Singapore, etc.)

   c. state quantitatively and qualitatively how the project would potentially generate economic payoffs for Singapore (e.g. through the commercialisation of new products, solutions and create spinoffs/IP/ licensing, etc.).
For section 1.7 Research Proposal, the applicant(s) is required to download and complete the ‘CTWL Research Proposal Template’ found in IGMS.

2. Research team, collaborators, Referees

2.1. Research Team
2.2. Collaborators
2.3. Referees (not required)
2.4. Mentor (not required)

Applicant(s) shall include his/her CV and project members’ CV in the proposal, using the IGMS “CV template” found in this section. The assignment of role to the member, e.g. collaborator, Co-I, should best reflect their responsibility in this project and their obligations when the proposal is awarded. The detailed definitions of the various roles and responsibilities can be found in “Annex A - Guidelines for the Management of Research Grants (1 Jan 2020)” and the “Annex B - Terms and Conditions (1 Jan 2020).

3. Key Performance Indicator

During the proposal submission stage, Key Performance Indicator section will not be available. Applicant(s) shall provide the details using the “CTWL Research Proposal Template” in the Research Details section.

4. Research Milestone

Detailed activities to be undertaken in this project.

5. Technical Milestone

Key technical deliverables expected from the successful execution of the project, Input vis-à-vis research objectives and how they would be measured at mid-term and programme completion.

6. Budget

6.1. Summary
6.2. Expenditure on Manpower
6.3. Other operating expenses
6.4. Equipment
6.5. Oversea Travel
6.6. Research Scholarship (not required)
6.7. Supplemental Human capital (not required)
6.8. Attachments

Refer to “Annex A - Guidelines for the Management of Research Grants” for additional guidance on budgeting and Appendix 1 within “Annex A” for list of exclusions.

For joint applications between multiple organisations, the requesting institute should be clearly indicated in the “description” column.

<table>
<thead>
<tr>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Institute A - Equipment will be used for ….</td>
</tr>
<tr>
<td>Institute B - Equipment will be used for ….</td>
</tr>
</tbody>
</table>

7. **Funding support** [Refer to Training Manual]

8. **Reviewers**

Each application must include **at least three** recommendations of international peer reviewers who could potentially be contacted to evaluate the proposal in the submission through IGMS and the full proposal PDF document.

In providing the recommendations, the applicant(s) shall provide these additional details of the nomination (in the “Relationship to PI/Co-I/reasons” field) and certifies that the recommended reviewers:

a. are experts in the subject matter capable of offering unbiased opinions on the scientific merits of the proposed project;

b. have breadth and depth of knowledge of the field to evaluate the broader, multi-disciplinary, societal and educational impact of the proposed project;

c. have good knowledge of global developments in the field to evaluate the relevancy and competitiveness of the proposed project;

d. declare any relationship, direct or otherwise, with the applicant(s) (e.g. thesis advisor or advisee, current or recent (within the past 24 months) research
collaborator, past-colleagues, acquaintance, etc.); and have no financial interest in the proposed project.

9. Declaration of Ethics Approval [Refer to Training Manual]

10. Other Attachments

References and synopsis of papers

Applicant(s) shall upload in IGMS the references that are relevant to the project proposal. Applicant(s) may also include synopsis of papers up to four pages as part of this section.

To upload all attachments required and additional materials relevant to the proposal. Please use Arial Font size 12. All submissions shall be in English.

Checklist for Enterprise Development Grant (EDG) (For Singapore-owned companies only)

Enterprise Singapore (ESG) has launched an innovation call, which is open to Singapore Small and Medium sized Enterprises (SMEs) looking for opportunities to test-bed their solutions.

Applicant(s) which are Singapore business entities shall upload the checklist in Appendix A. Applicant(s) eligible for EDG will be contacted by Enterprise Singapore for further assessment.

11. Undertaking [Refer to Training Manual]
Part 3 Application for Enterprise Development Grant (EDG) – Innovation and Productivity (For Singapore-owned companies only)

Eligibility and Project Requirements

1. To be eligible, applicants must:
   1.1 Be registered and operating in Singapore;
   1.2 Have a minimum of 30% local shareholding;
   1.3 Be in a financially viable position to start and complete the project; and
   1.4 Carry out your project in Singapore.

2. Research and technology organisations and universities are not eligible. Research and technology organisations and universities are encouraged to apply to IGMS.

3. Projects must start by 1 September 2020 and be completed within 24 months.

Assessment Criteria

4. Proposals must address the requirements of the Problem Statements, and should fulfil the following criteria:
   4.1 Must not be readily or commercially available in the market.
   4.2 Development of the solutions must not have commenced at the point of proposal submission.
   4.3 Desired technology readiness of solutions should range from Technology Readiness Level (TRL) 5 to TRL 8.

5. Proposals will be evaluated against the following criteria:
   5.1 Applicability to the problem statement: Whether the described proposal does meet the problem statements in the ‘CTWL - RFP on Non incinerable waste_18Mar2020 Document – Point 5.’
   5.2 Productivity gain: Significance of innovation compared to existing technology in the market. Viability of the technology. Demonstration of productivity gains
   5.3 Technological innovation: High-technical-merit research and innovation that is novel, internationally competitive, directly addresses the identified challenge(s), can lead to breakthrough results, and feasible for deployment in real-world operational environment;
   5.4 Impact of project: Economic benefits to Singapore in terms of capabilities and manpower development, as well as commercialisation spin-offs, strong and clear demonstration of potential commercial viability, economic advantage of the proposed solution over existing technologies and practices, and potential to scale up and be implemented in the market;
5.5 **Project execution**: Execution by an experienced team with requisite capabilities and resources and whose members have relevant and complementary expertise.

5.6 **Product-market fit**: Evidence of interest from one or a few potential testbedding partners that are willing to co-develop solutions.

5.7 **Proposal clarity**: Concise and clear outline of the proposed innovation by formulating different stages / phases for implementation and improvement.

Applicant(s) is required to submit Appendix A under “Section 10 - Others Attachment” in IGMS, for the proposal to be also considered under EDG. ESG will contact the eligible applicant(s) for further assessment. Upon contact by Enterprise Singapore, companies should also prepare the following documents. **Please do not submit these documents on IGMS.**

<table>
<thead>
<tr>
<th>S/N</th>
<th>Preparation checklist</th>
</tr>
</thead>
</table>
| 1   | □ Documents for all application submissions  
     | o Latest audited group financial statements not more than 18 months old  
     |   (Companies exempted from audit requirement may submit their certified management accounts instead)  
     | o **Project Proposal** |
| 2   | □ [For technology vendors only] At least 1 Letter of Intent from Test-Bedding Partners and/or End-Users |
| 3   | □ Supporting documents for Hardware/Equipment and Software cost e.g. Quotation of item by number of units and unit cost |
| 4   | □ Supporting documents for Salary cost  
     | o Employment or Appointment letters of staff. If staff is not identified yet, provide the job description and designation |
| 5   | □ Supporting documents for other cost items e.g. Consultancy cost  
     | o Consultancy proposal with fee breakdown by phases, description of activity in each phase and number of man-days |

## Appendix A – EDG Checklist

<table>
<thead>
<tr>
<th>S/N</th>
<th>Eligibility criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The company is registered and operating in Singapore</td>
</tr>
<tr>
<td>2</td>
<td>The company have a minimum of 30% local shareholding</td>
</tr>
<tr>
<td>3</td>
<td>The company is in a financially viable position to start and complete the project</td>
</tr>
<tr>
<td>4</td>
<td>Project must not have commenced at the time of application.</td>
</tr>
</tbody>
</table>