****

**SINGAPORE FOOD STORY (SFS) R&D PROGRAMME 2.0**

**(“SFS 2.0”)**

**All information is treated in confidence. The information is furnished to the Singapore Food Agency with the understanding that it shall be used or disclosed for evaluation, reference and reporting purposes. Please complete ALL sections, and submit proposal in MS Word format, following instructions and prompts carefully.**

**Please be advised that failure to adhere to the provided instructions may lead to the rejection of your proposal.**

1. **PROJECT OVERVIEW & DESCRIPTIONS:**

|  |  |
| --- | --- |
| **A. General Information** | |
| **Proposal ID (as per IGMS)** | Click or tap here to enter text. |
| **Title of Research Project** | Click or tap here to enter text. |
| **Primary MSE Domain** | **Agri-Food** |
| **Secondary MSE Domain** | Choose an item. |
| **Main Research Area** | Choose an item. |
| **Start Technology Readiness Level (TRL[[1]](#footnote-1))** | Choose an item. |
| **Target TRL (at end of research project)** | Choose an item. |
| **Project Duration (months)** | Choose an item. |
| **Total Project Budget** | $Click or tap here to enter text. |
| **Host Institution** | Click or tap here to enter text. |
| **Funding Agency** | **SFA** |
| **Funding Initiative** | **SFS 2.0** |
| **Funding Tranche** | **RIE 2025** |

**B. Main Project Team**

*List all team members [Lead PI and/or Co-PI(s)] and industry and/or research collaborator(s) and fill in the fields in the table below. Please also list the CVs of all team members based on the template in Annex A.*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Role in Project | Name | Email | Organisation | Organisation UEN[[2]](#footnote-2) | % Time committed on the project[[3]](#footnote-3) | SSIC[[4]](#footnote-4) (for industry collaborator) |
| Choose an item. | Click or tap here to enter text. | Click or tap here to enter text. | Click or tap here to enter text. | Click or tap here to enter text. | Choose an item. | Click or tap here to enter text. |
| Choose an item. | Click or tap here to enter text. | Click or tap here to enter text. | Click or tap here to enter text. | Click or tap here to enter text. | Choose an item. | Click or tap here to enter text. |
| Choose an item. | Click or tap here to enter text. | Click or tap here to enter text. | Click or tap here to enter text. | Click or tap here to enter text. | Choose an item. | Click or tap here to enter text. |
| Choose an item. | Click or tap here to enter text. | Click or tap here to enter text. | Click or tap here to enter text. | Click or tap here to enter text. | Choose an item. | Click or tap here to enter text. |
| Choose an item. | Click or tap here to enter text. | Click or tap here to enter text. | Click or tap here to enter text. | Click or tap here to enter text. | Choose an item. | Click or tap here to enter text. |
| Choose an item. | Click or tap here to enter text. | Click or tap here to enter text. | Click or tap here to enter text. | Click or tap here to enter text. | Choose an item. | Click or tap here to enter text. |
| Choose an item. | Click or tap here to enter text. | Click or tap here to enter text. | Click or tap here to enter text. | Click or tap here to enter text. | Choose an item. | Click or tap here to enter text. |
| Choose an item. | Click or tap here to enter text. | Click or tap here to enter text. | Click or tap here to enter text. | Click or tap here to enter text. | Choose an item. | Click or tap here to enter text. |
| Choose an item. | Click or tap here to enter text. | Click or tap here to enter text. | Click or tap here to enter text. | Click or tap here to enter text. | Choose an item. | Click or tap here to enter text. |
| Choose an item. | Click or tap here to enter text. | Click or tap here to enter text. | Click or tap here to enter text. | Click or tap here to enter text. | Choose an item. | Click or tap here to enter text. |
| Choose an item. | Click or tap here to enter text. | Click or tap here to enter text. | Click or tap here to enter text. | Click or tap here to enter text. | Choose an item. | Click or tap here to enter text. |
| Choose an item. | Click or tap here to enter text. | Click or tap here to enter text. | Click or tap here to enter text. | Click or tap here to enter text. | Choose an item. | Click or tap here to enter text. |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **C. Overall Project Budget** (please also fill in Detailed Project Budget in Annex B) | | | | | |
| **Host Institution Cash Contribution** | $Click or tap here to enter text. | **Research Collaborator (1) Cash Contribution** | $ Click or tap here to enter text. | **Industry Collaborator (1) Cash Contribution** | $ Click or tap here to enter text. |
| **Host Institution in-kind Contribution** | $ Click or tap here to enter text. | **Research Collaborator (1) in-kind Contribution** | $ Click or tap here to enter text. | **Industry**  **Collaborator (1) in-kind Contribution** | $Click or tap here to enter text. |
| **Total Project**  **Budget** | $Click or tap here to enter text. | **Research Collaborator (2) Cash Contribution** | $ Click or tap here to enter text. | **Industry**  **Collaborator (2) Cash Contribution** | $ Click or tap here to enter text. |
|  |  | **Research Collaborator (2) in-kind Contribution** | $ Click or tap here to enter text. | **Industry**  **Collaborator (2) in-kind Contribution** | $ Click or tap here to enter text. |
|  |  | **Research Collaborator (3) Cash Contribution** | $ Click or tap here to enter text. | **Industry**  **Collaborator (3) Cash Contribution** | $ Click or tap here to enter text. |
|  |  | **Research Collaborator (3) in-kind Contribution** | $ Click or tap here to enter text. | **Industry**  **Collaborator (3) in-kind Contribution** | $ Click or tap here to enter text. |
|  |  | **Research Collaborator (4) Cash Contribution** | $ Click or tap here to enter text. | **Industry**  **Collaborator (4) Cash Contribution** | $ Click or tap here to enter text. |
|  |  | **Research Collaborator (4) in-kind Contribution** | $ Click or tap here to enter text. | **Industry**  **Collaborator (4) in-kind Contribution** | $ Click or tap here to enter text. |
|  |  | **Research Collaborator (5) Cash Contribution** | $ Click or tap here to enter text. | **Industry**  **Collaborator (5) Cash Contribution** | $ Click or tap here to enter text. |
|  |  | **Research Collaborator (5) in-kind Contribution** | $ Click or tap here to enter text. | **Industry**  **Collaborator (5) in-kind Contribution** | $ Click or tap here to enter text. |

1. **KEY DETAILS OF RESEARCH PROJECT:**

***Content for the Proposal (i.e. Section 2, excluding up to 4 pages for Detailed Methodology in Annex C) must not exceed 10 pages and must be written in Arial font size 12-point with single line spacing.***

|  |
| --- |
| * 1. **Scientific Abstract** (not more than 1500 characters; around 300 words)   *A scientific description of the project proposal including objectives, specific challenges, hypotheses, methodology and approach of the research proposal.* |
| Click or tap here to enter text. |
|  |
| * 1. **Lay Abstract** (not more than 1500 characters; around 300 words)   *An abstract written in simple and non-technical language. This information may be used by the SFA for public communication purposes.* |
| Click or tap here to enter text. |
|  |
| * 1. **Problem Statement** (not more than 1500 characters; around 300 words)   *Include Background and Motivation for this research.* |
| Click or tap here to enter text. |
|  |
| * 1. **Research Objectives**   *Include the significance of the project, a summary of the research approach as well as the scientific excellence, innovation, and novelty of the research.* |
| Click or tap here to enter text. |
|  |
| * 1. **Deliverables and Technical KPIs**   *List the specific desired outcomes, specified targets set for each work package/scope, and how these relate to the SFA's overall targets set for relevant research areas.* |
| Click or tap here to enter text. |
|  |
| * 1. **Alignment to National Policies**   *Show how the project is aligned with national policies e.g., Singapore Green Plan 2030.* |
| Click or tap here to enter text. |
|  |
| * 1. **Strategic Advantage**   *Show how the project advances our national interests in either national security or resiliency and/or maintains/develops Singapore’s position as a global leader.* |
| Click or tap here to enter text. |
|  |
| * 1. **Landscape Scan and Innovativeness**   *Explain how the project exemplifies technological excellence, providing information on:*  *- the current best available technology/state-of-the-art through a landscape scan.*  *- innovative content and how this project attempts to exceed the Best Available Technology [Build vs Buy: why research in this area is necessary].* |
| * + 1. **Landscape Scan** |
| Click or tap here to enter text. |
|  |
| * + 1. **Innovativeness** |
| Click or tap here to enter text. |
|  |
| * 1. **Commercialisation Pathway**   *State how the project will be translated i.e.:*  *- analyse the relevance, importance, and feasibility of the project if implemented in the larger market/ecosystem.*  *- identify collaboration partners for test-bedding, manufacturing, or scaling up of the technologies; describe the industry collaborators involved in the project, their roles, and the plan to translate upstream research to downstream implementation (to submit Letters of Support from industry partners in Annex D).* |
| Click or tap here to enter text. |
|  |
| * 1. **Quantitative/Qualitative Impact**   *To provide the quantitative impact of the technology if implemented, following the success of the project. Calculate the project's projected Return on Investment (ROI) taking into account total cost savings (e.g., increase in energy efficiency and other tangible benefits) and revenue generated (e.g., sales of product/services) vs the total project budget using the following formula:*  *Where impact cannot be quantified, provide qualitative impact (intangible outcomes, new capabilities/competencies) which will be developed including transfer of technical expertise into Singapore if an overseas institute is involved, contribution to industry and society etc.* |
| * + 1. **Quantitative Impact** |
| Click or tap here to enter text. |
|  |
| * + 1. **Qualitative Impact** |
| Click or tap here to enter text. |
|  |
| * 1. **Carbon Mitigation (optional)**   *To provide impact of net carbon emission and highlight whether the project mitigates/contributes to environmental footprint.* |
| * + 1. **Net Carbon Emission Impact** |
| Click or tap here to enter text. |
|  |
| * + 1. **Environmental Footprint** |
| Click or tap here to enter text. |
|  |
| * 1. **Socio-Behavioural Science elements (optional)**   *To highlight if there are any social-behavioural science elements (i.e., incorporation of human factors into technology/experimental design to maximise adoption outcomes) in the project.* |
| Click or tap here to enter text. |

1. **PERFORMANCE INDICATORS:**

|  |  |  |
| --- | --- | --- |
| **Performance Indicators (Target)** | | |
| Research Excellence | No. of publications in the top 10% of journals.  *This measures the number of publications in the top 10% of S&T journals in the field as tracked in the Thomson Reuters Journal Citation Report.* | Choose an item. |
| [Tracking[[5]](#footnote-5)] No. of publications not in the top 10% of journals.  *This measures the number of publications not in the top 10% of S&T journals in the field as tracked in the Thomson Reuters Journal Citation Report.* | Choose an item. |
| Manpower | No. of industry R&D jobs created.  *This measures the number of innovation positions induced in the ecosystem by public R&D investments. This includes all persons employed for R&D and R&D-related activities, such as researchers, project managers, product designers, technicians, and other supporting staff. To be tracked based on RSE and non-RSE.* | Choose an item. |
| No. of Research Scientists and Engineers (RSE) including post-graduates, professionals trained.  *Comprise researchers who hold formal qualifications at the university degree level and excludes full-time postgraduate research students.* | Choose an item. |
| [Tracking] No. of Singapore Citizens (SCs) in no. of industry R&D jobs created.  *This contributes to the measurement of the % of SC in total no. of industry R&D jobs created.* | Choose an item. |
| [Tracking] No. of Permanent Residents (PRs) in no. of industry R&D jobs created.  *This contributes to the measurement of the % of PR in total no. of industry R&D jobs created.* | Choose an item. |
| [Tracking] No. of Researchers trained.  *‘Researcher’ is defined internationally by OECD* *to refer to the total number of researchers in a country/economy, which include researchers who do not possess degree qualifications, as well as postgraduate students.* | Choose an item. |
| Innovation & Enterprise | No. of industry projects.  *The number of R&D projects (in the form of research collaboration agreements or contract research agreements) undertaken with the industry. This should be tracked by the following parameters:*  *i) Public sector performer (A\*STAR / IHL) ii) Enterprise type (MNC/LLE/SME/public agencies/VWOs) iii) Engagement type (New or renewal, depending on whether it is a new engagement or a follow-on engagement with additional funding)*. | Choose an item. |
| Industry R&D Spending.  *This refers to the R&D investment that a company commits to spend in Singapore as a result of collaborations with a public research performer. The R&D investment can comprise cash and/or in-kind.*  *The investment by the company, whether in cash or in qualifying in-kind contributions should, where possible, be reflected in the agreements signed between the company and the relevant performer(s).* | $Click or tap here to enter text. |
| No. of technologies deployed, including licenses.  *This measures the number of research findings or technologies developed that are deployed (e.g., through a license or at least at pilot scale) that will contribute to at least one of the following outcomes:*    *i) Introduction of new product in the market.*  *ii) Introduction of new service in the market.*  *iii) Product or process improvement.*  *This should be tracked by type of company (MNCs, LLEs, SMEs, start-ups and public sector/VWOs).* | Choose an item. |
| [Tracking] Revenue generated from licenses, royalties, and equities. | $Click or tap here to enter text. |
| [Tracking] No. of enterprises innovating in-house. | Choose an item. |
| Long-term outcome indicators | No. of instances of policy influence.  *A policy influence refers to an instance whereby:*  *- Outputs of a funded project (e.g. research findings or published technology roadmap) informed policy, regardless of the outcomes of the eventual policy e.g. changes in guidelines, informing of target setting, informing of strategy/ops planning etc., or  - Expertise developed through funded activities (e.g. technical experts hosted by a core-funded entity) participated in policymaking or were consulted by policymakers in their expert capacity.* | Choose an item. |
| No. of instances of standard industry practice influences.  *A standard industry practice influence refers to an instance whereby: - outputs of a funded project (e.g. research findings) informed industry decision-making or practice beyond the level of single companies (e.g. contributing to the setting of industry managed standards). - expertise developed through funded activities (e.g. technical experts hosted by a core funded entity) participated in decision-making by industry bodies or were consulted by industry bodies in their expert capacity.* | Choose an item. |
| [Tracking] Savings generated from R&D investment.  *Potential savings based on the potential effect if the project is successful and deployed.* | $Click or tap here to enter text. |

1. **OTHER PROJECT DETAILS:**

|  |
| --- |
| * 1. **Project Implementation Timeline**   *Propose research milestones, production-type metrics (for projects with target TRL >6) and deliverables to be achieved for the project in this section. Research milestones refer to detailed activity milestones to be undertaken in this project. Deliverables are technical deliverables and should be quantitative (e.g. % of improvement in productivity or cost-saving, or target to achieve certain yields.). Production-type metrics refer to indicators that assess the efficiency, effectiveness and overall performance of production process. Examples include, but are not limited to, yield, growth rate, cycle time, cost per unit, energy efficiency, scalability potential and product quality metrics. You may wish to use the Gantt chart below to shade time periods occupied by work on specific project milestones and deliverables according to your project duration.* |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **Research**  **Milestones/**  **Deliverables** | **Year 1** | | | | **Year 2** | | | | **Year 3** | | | | **Year 4** | | | | **Year 5** | | | | | | **1Q** | **2Q** | **3Q** | **4Q** | **1Q** | **2Q** | **3Q** | **4Q** | **1Q** | **2Q** | **3Q** | **4Q** | **1Q** | **2Q** | **3Q** | **4Q** | **1Q** | **2Q** | **3Q** | **4Q** | | **e.g. Milestone 1** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | **e.g. Deliverable 1** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | **e.g. Milestone 2** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | **e.g. Milestone 3** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | **e.g. Deliverable 2** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | Click or tap here to enter text. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | Click or tap here to enter text. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | Click or tap here to enter text. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | Click or tap here to enter text. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | Click or tap here to enter text. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | Click or tap here to enter text. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | Click or tap here to enter text. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | Click or tap here to enter text. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | Click or tap here to enter text. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | Click or tap here to enter text. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | Click or tap here to enter text. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | Click or tap here to enter text. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | Click or tap here to enter text. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | Click or tap here to enter text. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | Click or tap here to enter text. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | Click or tap here to enter text. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | Click or tap here to enter text. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | Click or tap here to enter text. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | Click or tap here to enter text. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
|  |

|  |  |  |
| --- | --- | --- |
| * 1. **Data Requirements**   *Highlight all the data to be collected/generated within this project. Include a description of the data and details on data parameters to be measured and how the data is to be collected.* | | |
| **Description of data** | **Parameters to be measured** | **Data collection method** |
| Click or tap here to enter text. | Click or tap here to enter text. | Click or tap here to enter text. |
| Click or tap here to enter text. | Click or tap here to enter text. | Click or tap here to enter text. |
| Click or tap here to enter text. | Click or tap here to enter text. | Click or tap here to enter text. |
| Click or tap here to enter text. | Click or tap here to enter text. | Click or tap here to enter text. |
| Click or tap here to enter text. | Click or tap here to enter text. | Click or tap here to enter text. |
| Click or tap here to enter text. | Click or tap here to enter text. | Click or tap here to enter text. |
| Click or tap here to enter text. | Click or tap here to enter text. | Click or tap here to enter text. |
| Click or tap here to enter text. | Click or tap here to enter text. | Click or tap here to enter text. |
| Click or tap here to enter text. | Click or tap here to enter text. | Click or tap here to enter text. |
| Click or tap here to enter text. | Click or tap here to enter text. | Click or tap here to enter text. |
| Click or tap here to enter text. | Click or tap here to enter text. | Click or tap here to enter text. |
| Click or tap here to enter text. | Click or tap here to enter text. | Click or tap here to enter text. |
| Click or tap here to enter text. | Click or tap here to enter text. | Click or tap here to enter text. |
| Click or tap here to enter text. | Click or tap here to enter text. | Click or tap here to enter text. |
| Click or tap here to enter text. | Click or tap here to enter text. | Click or tap here to enter text. |
| Click or tap here to enter text. | Click or tap here to enter text. | Click or tap here to enter text. |
| Click or tap here to enter text. | Click or tap here to enter text. | Click or tap here to enter text. |
| Click or tap here to enter text. | Click or tap here to enter text. | Click or tap here to enter text. |
| Click or tap here to enter text. | Click or tap here to enter text. | Click or tap here to enter text. |
| Click or tap here to enter text. | Click or tap here to enter text. | Click or tap here to enter text. |
| Click or tap here to enter text. | Click or tap here to enter text. | Click or tap here to enter text. |
| Click or tap here to enter text. | Click or tap here to enter text. | Click or tap here to enter text. |
| Click or tap here to enter text. | Click or tap here to enter text. | Click or tap here to enter text. |
| Click or tap here to enter text. | Click or tap here to enter text. | Click or tap here to enter text. |
|  |  |  |
| *The Urban Solutions and Sustainability (USS) domain agencies are compiling a metadata catalogue to improve data discoverability for researchers. It seeks to encourage early (i.e. pre-award) data-related discussions between Lead agencies and Investigators and will serve as a central reference for datasets available within agencies for request, to be used exclusively for the Research.*  *Interested Investigators from*   * *Public Institutions (i.e. AUs, polys, A\*STAR Research Entities, and Temasek Life Sci Lab) may approach your respective Research Offices, who will assist to write in to request for the metadata catalogue.* * *Local Entities (that are not part of the list of public institutions) may write in to request for the metadata catalogue directly. If approved, an authorised signatory from the organisation must agree to a non-disclosure undertaking before the metadata catalogue is shared.*   *Agencies will assess the requests based on the grant call topic (e.g. if sharing of agencies’ data is indeed useful given the nature of the topic) and may request for further substantiations. Please note that agencies reserve the right to approve/deny any requests for the metadata catalogue, and that any data subsequently requested from the Government and/or public agencies will require the signing of separate non-disclosure agreements (NDA).* | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| * 1. **ANNEXES**   *The following documents are required for the submission. It is advised to restrict the total attachment size to be less than 25MB. Please follow the naming convention and format for labelling of soft copy attachments:* | | | | |
| **Document** | **Description** | **Template/Guideline** | **Naming Convention** | **Submission Format** |
| Research Proposal | N.A. | N.A. | RP\_ *Project title* | MS Word |
| Annex A – Curriculum Vitae | To list the CVs of all team members [Lead PI and/or Co-PI(s)] and collaborator(s) including academic qualification, professional experience, and accomplishment etc. |  | CV\_ *Project title* | PDF |
| Annex B – Detailed Project Budget | Follow the instructions on Sheet 1. Fill in the details according to the project duration. |  | Budget\_ *Project title* | MS Excel |
| Annex C – Detailed Methodology | Key fields to include:  - Previous Preliminary Work / State of Current Research  - Approach and Methodology  - Research Component to be done overseas (if applicable) | N.A. | Methodology\_ *Project title* | PDF |
| Annex D – Letters of Support | To provide Letters of Support from Industry Partners, stating the intent of collaboration, and highlighting intended cash or in-kind (e.g., labour, materials, loan of facilities and space) contributions or a combination of the two towards the project  Key fields to include:  - Name of Organisation, Cash Contribution ($), in-kind Contribution ($), in-kind Contribution (type), letters of support (to attach) | N.A. | LOS\_ *Project title* | PDF |
| Annex E – Suggested Peer Reviewers | To propose peer reviewers who are suitable to review the proposal, and have no relationship, direct or otherwise, with any of the team members that would create a real or apparent COI. |  | SPR\_ *Project title* | PDF |
| One-Slide Summary  (NABC model) | One slide summary to define problem statements, what your research idea does and how this research idea is valuable to the industry.  *- Key fields to include:* Need, Approach, Benefit, Competition | N.A. | Summary\_ *Project title* | PDF |

|  |  |
| --- | --- |
| * 1. **Definition of Technology Readiness Levels (TRL)** | |
| TRL 1 | **Basic principles observed and reported.**  Lowest level of technology readiness. Scientific research begins to be translated into applied research and development. Formulation of basic theories / principles which have the potential to be further developed into applied research. The project may be limited to literature review and fundamental investigations and paper studies. |
| TRL 2 | **Technology concept and/or application formulated.**  Once basic principles are observed, practical applications can be formulated. Conceptual development of application and technology. The project may involve analytic studies such as numerical simulations and experimentation to support the basic theories. |
| TRL 3 | **Analytical and experimental critical function and/or characteristic proof of concept.**  Active research and development initiated. Proof of concept established through laboratory studies which aim to validate analytical predictions of separate components of the technology. Examples include components that are not yet integrated or representative. |
| TRL 4 | **Laboratory testing of prototype component or process.**  Design, development and lab testing of technological components are performed. Lab-scale tests on the prototype where separate components of the technology have been integrated to establish that they will work together. This is a relatively “low fidelity” prototype in comparison with the eventual system. |
| TRL 5 | **Laboratory testing of integrated system.**  The basic technology components are integrated together with realistic supporting elements to be tested in a simulated environment. Bench-scale tests in a simulated environment (e.g., laboratories or other environment under controlled conditions) for optimisation/performance enhancement of the technology/prototype. This is a “high fidelity” prototype system verified. |
| TRL 6 | **System/subsystem model or prototype demonstration in a relevant environment.**  The prototype, which is well beyond that of level 5, is tested in a relevant environment. Pilot-scale tests of the system or process demonstration in a relevant operational environment and the prototype system verified. |
| TRL 7 | **System prototype demonstration in an operational environment.**  Prototype is near, or at, planned operational system level. Demo-scale tests in the actual operational environment. The final design is virtually complete. The goal of this stage is to remove engineering and manufacturing risk. |
| TRL 8 | **Actual system completed and qualified through test and demonstration.**  Technology has been proven to work in its final form under the expected conditions. Successful implementation of demo-scale tests where true system development is achieved. In most of the cases, this level represents the end of true system development. |
| TRL 9 | **System ready for full-scale deployment.**  The technology in its final form is ready for commercial deployment. |

1. Refer to the definition of TRL in Section 4. [↑](#footnote-ref-1)
2. Unique Entity Number [↑](#footnote-ref-2)
3. % Time committed on the Project” by team members [Lead PI and/or Co-PI(s)] and collaborator(s)] must add up to 100% [↑](#footnote-ref-3)
4. Singapore Standard Industrial Classification [↑](#footnote-ref-4)
5. Tracking Indicators are used for monitoring purposes. [↑](#footnote-ref-5)