



SMART CHALLENGE FUND GUIDELINE FOR APPLICANTS (13 MAC 2017)

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SMART CHALLENGE FUND GUIDELINE FOR APPLICANTS

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1. INTRODUCTION

The Smart Challenge Fund (SMART Fund) is the government's initiatives which is open to businesses and researchers interested in competing for funding opportunities for which the Government has identified the strategic and prioritised needs (new technologies, processes, products) with the expectation that the deliverables will solve national problems and identify long term solutions.

Through this scheme, the Government will be investing in pre-commercialisation of technologies, processes, products that are highly innovative which can be translated into marketable output to spur the economy as well as for societal benefit.

Proposed projects must be specific, measurable, achievable, realistic and timely (SMART). The proposed projects must be well-designed, scientifically valid, and competitive with current technologies and research works.

2. OBJECTIVES

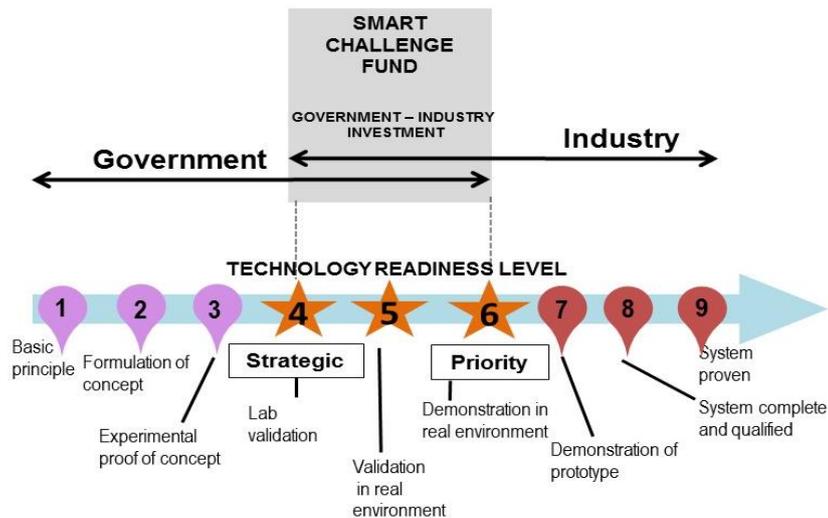
2.1 The objectives of this fund are divided into two categories:

2.1.1 to tackle **strategic** issues that will provide long term solutions, thus, ensuring commercialization of new R&D products to spur economic returns for the country. This fund covers pre-commercialisation stage with the technology readiness level (TRL) 4.

2.1.2 to tackle **prioritised** issues that need immediate solution leading to improvement of societal wellbeing. This fund covers pre-commercialisation stage with the technology readiness level (TRL) 6.

2.2 Technology Readiness Levels is a method of characterising technological maturity from the most basic research (TRL 1) through to full-scale-real-world operation (TRL 9). The SMART Fund covers from TRL4 to TRL6 as shown in **Figure 1**. The description for every level of TRL can be seen in **Appendix 1**.

Figure 1: Scope of SMART Fund based on TRL



3. PRIORITY AREAS

3.1 The proposed projects must be within the framework of the priority areas as follows:

3.1.1 Water, Food, and Energy Nexus;

3.1.2 Green Growth for Sustainable Development; and

3.1.3 Medical and Healthcare.

3.2 For each priority area, there will be thematic problem statements that require solution. Please refer to the thematic areas in **Appendix 2**.

3.3 Key enablers such as Internet of Things (IoT), nanotechnology, biotechnology and Industry 4.0 should be embedded in the priority areas.

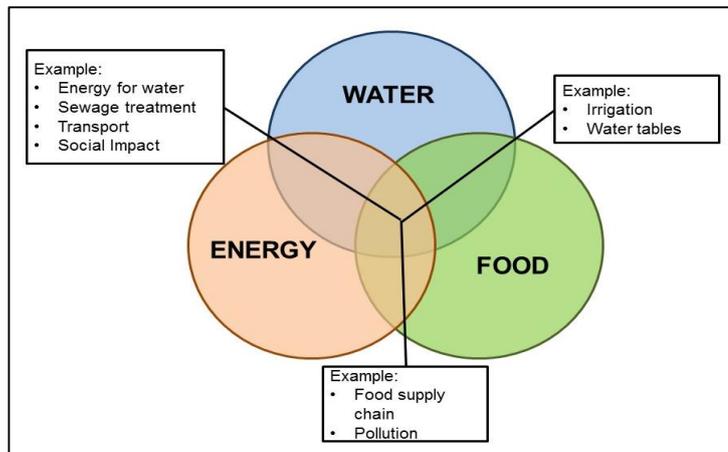
3.4 **The Water, Food, and Energy Nexus** focuses on the interdependence of water, food and energy resources by understanding the challenges and opportunities involved. Applicants are required to propose projects which include at least two resources as stated in **Figure 2**. The outcome of the project must:

3.4.1 Improve energy, water and food securities;

3.4.2 Address externality across sectors and decision-making at the nexus; and

3.4.3 Support transition to sustainability.

Figure 2: Water, Food, and Energy Nexus Resources



4. ELIGIBLE APPLICANT

4.1 The fund is open to **Small and Medium Enterprises (SME), Government Research Institutes (GRI), Science, Technology and Innovation Agencies (STI Agencies) and Public and Private Institutes of Higher Learning (IHL).**

4.2 Definition of small and medium enterprises is as shown in Table 1.

Table 1: Definition of SME

| Category | Small Enterprise | Medium Enterprise |
|----------------------------|---|--|
| Manufacturing | <ul style="list-style-type: none"> Sales turnover from RM300,000 to less than RM15 mil; or employees from 5 to less than 75 | <ul style="list-style-type: none"> Sales turnover from RM15 mil to not exceeding RM50 mil; or employees from 75 to not exceeding 200 |
| Services and Other Sectors | <ul style="list-style-type: none"> Sales turnover from RM300,000 to less than RM3 mil; or employees from 5 to less than 30 | <ul style="list-style-type: none"> Sales turnover from RM3 mil to not exceeding RM20 mil ; or employees from 30 to not exceeding 75 |

Source: SME Corporation Malaysia

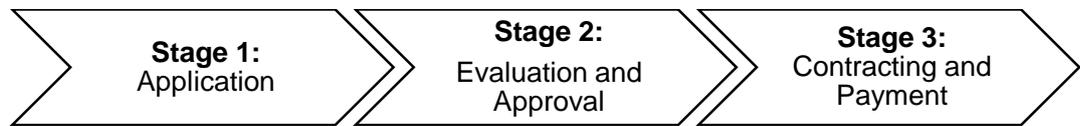
4.3 Multi-disciplinary organisations including industry, academic and research are encouraged to work together.

5. ELIGIBILITY CRITERIA

- 5.1 All categories of SME must have a minimum of **51% equity held by Malaysians**.
- 5.2 The small and medium enterprise, whether as an applicant or a collaborator, must have a **minimum paid-up capital of RM10,000.00**.
- 5.3 Companies must have at least **10% cash** of the applied grant amount or **RM150,000.00 cash** whichever is lower for the implementation of project.
- 5.4 None of the **company directors or project team members** have been convicted of any fraudulent activities or the company has been declared bankrupt, under liquidation or placed under receivership.
- 5.5 Only **Malaysian citizens can apply and lead the project** but can include international organisations or expatriates working in any of the organisations mentioned above as part of their project team.
- 5.6 **Researchers** working under **contract** with IHLs, GRIs and STI Agencies must ensure that their **employment contract is still valid during the project duration**.
- 5.7 The project team should consist of members who are qualified and competent on the technical aspects of the whole project. Each team member must provide a curriculum vitae clearly stating their previous research and highlighting their experience and achievements.
- 5.8 Applicants are allowed to **lead only one project at any time**.
- 5.9 Projects must be **conducted in Malaysia**.
- 5.10 The proposed project must contain elements of **technological innovation leading to commercialisation**.
- 5.11 The following are **not eligible** for funding under the SMART Fund:
 - 5.11.1 Works already undertaken or under the responsibility/portfolio of certain Ministries, Departments or Agencies other than MOSTI; and
 - 5.11.2 Application from Research Institutes that have their own internal research funding such as CESS Fund.

6. APPLICATION PROCESS

6.1 There are three (3) stages to the SMART Fund application as shown below:



6.2 **Stage 1: Application** process are as follows:

- 6.2.1 The application starts with a call for **submission of the full paper proposal**.
- 6.2.2 Full proposal must be submitted through the online system at <https://edana.mosti.gov.my>. Apart from that, the applicants and collaborators must provide a set of document (hardcopy) as listed in **Appendix 3**.
- 6.2.3 All applications must be reviewed and approved by the Head of the applicant's organisation or the Research Management Centre (RMC) of the institution. They should also declare that the proposed research has not been funded or submitted for funding to any other source. Failure to do so would cause the application to be rejected.
- 6.2.4 In the online application, applicant needs to provide a concise **summary of their project** which shall answer the following questions:
 - 6.2.4.1 What are the problems you are solving?
 - 6.2.4.2 How to solve the problem?
 - 6.2.4.3 Who will benefit from your solution?
 - 6.2.4.4 What are the anticipated outcomes?
 - 6.2.4.5 What are the potential impacts?
- 6.2.5 In the application form, applicant needs to provide **proof of concept** as the evidence that verifies the concept/theories/ideas that can be applied successfully in the real-world operation.
- 6.2.6 The applicants also need to describe the **SMART Business Model** in the application form as listed in **Appendix 4**.

6.2.7 The proposal submitted will then be vetted by the Secretariat to ascertain whether the application and documents submitted fulfil the basic requirement. Incomplete or non-eligible proposal will be returned to the applicant.

6.3 **Stage 2: Evaluation** process are as follows:

6.3.1 The complete paper will be **reviewed** by the Fund Expert Committee (**FEC**) for elements of their commercial potential and technical aspect.

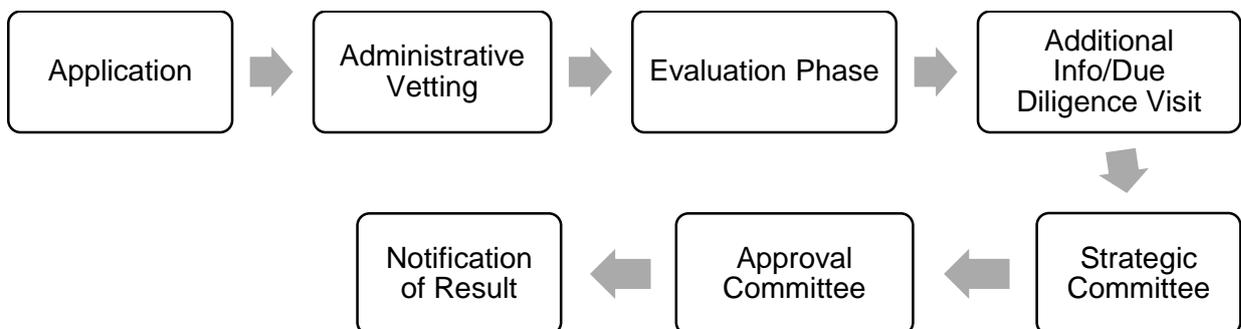
6.3.2 **Applicants** will be invited to **present (pitch)** their full paper proposal to the FEC. The applicant may be required to amend or revise the full paper to improve the proposal. In some instances, a **due diligence may be required** to be conducted after the evaluation process for verification purposes.

6.3.3 Once the due diligence has been carried out, **results** will be **assessed** by the Strategic Committee before presenting to the **Approval Committee**.

6.3.4 All applicants shall be notified officially via eDANA system or email. The successful applicants shall accept or decline the offer via eDANA system or email. Decisions made by the Approval Committee is **FINAL** and **any appeal on the results will not be entertained**.

6.3.5 The overall application and evaluation process including notification of the results will take **60 days** after all responses and information have been received from the applicant. The application process work flow is shown in Figure 3.

Figure 3: Application process work flow



6.4 Stage 3: Contracting and Payment Process are as follows:

- 6.4.1 Fund recipients are required to submit letter of acceptance upon receiving the offer letter from MOSTI. Heads of the fund recipient companies or the Research Management Centres (RMC) of the institutions are required to sign the Project Agreement and submit bank information (companies are required to open a designated bank account solely for the purpose of the project) to MOSTI.
- 6.4.2 The signed agreement will then be signed by MOSTI's top management and the agreement will be sent back to the fund recipient for stamping. The activities of 6.4.1 and 6.4.2 are expected to be completed within **30 days**.
- 6.4.3 Once the Secretariat has received the stamped agreement, the first payment to the fund recipient will be processed.
- 6.4.4** Memorandum of Understanding / Letter of Intent between collaborating Institutions must accompany the application. However, should the grant be approved, an **agreement between the collaborating parties** stating the respective scope of work, ownership of IP and all equipment purchased during the tenure of the project must be submitted to the Secretariat **within 30 days** from the date of the offer letter, failing which MOSTI has the right to revoke the approval.

7. QUANTUM AND DURATION OF FUNDING

The quantum and duration of funding approved will be based on the merits of each application, not exceeding the limits as stated in Table 2:

Table 2: Quantum and Duration of Funding

| FUND CATEGORY | DURATION (maximum months) | QUANTUM (RM) |
|----------------------|--------------------------------------|---------------------|
| Strategic | 24 | 1,000,000 |
| Prioritised | 24 | 3,000,000 |

8. SCOPE OF FUNDING

8.1 The scope of funding for SMART Fund are as stated in the Table 3:

Table 3: Scope of Funding for SMART Fund

| SCOPE | ITEM FUNDED | ITEM NOT FUNDED | NOTES |
|--|---|---|---|
| Pilot plant / prototype | <ul style="list-style-type: none"> Only equipment directly related to the pilot plan/prototype | <ul style="list-style-type: none"> Capital asset such as land, building, vehicle and furniture Lab apparatus Equipment maintenance | Not more than 40% of total approved project cost |
| Pre-clinical testing/clinical testing/field trials/stress test/user acceptance test | <ul style="list-style-type: none"> Screening test Payment for volunteers Data analysis | | |
| Intellectual Properties (IP) | <ul style="list-style-type: none"> For registration in Malaysia only IP resulting from the project <ol style="list-style-type: none"> Patent Industrial Design | <ul style="list-style-type: none"> Maintenance Patent Cooperation Treaty (PCT) | |
| Market testing and evaluation | <ul style="list-style-type: none"> Survey development Data analysis Sample size should follow the statistical standard | <ul style="list-style-type: none"> Incentive for respondents Facility rental and exhibition fee | <ul style="list-style-type: none"> Not more than 10% of fund approved |
| Regulatory and standards compliance | <ul style="list-style-type: none"> Registration of certification Product testing and standard compliance | | |

| SCOPE | ITEM FUNDED | ITEM NOT FUNDED | NOTES |
|-------------------------|--|---|--|
| Special Services | <ul style="list-style-type: none"> • Consultancy (agreement / letter of intent must be submitted together with the project proposal, details of the consultancy to be stated) • Consultant for market testing and evaluation • Sample testing and analysis • Data processing • IP incentive | <ul style="list-style-type: none"> • Production outsourcing • Travelling and transportation • Organizing meeting • Stationery such as paper, books, etc • Personal computer, laptop, printer, scanners, toner, etc • Subscription to journals • Conference fee • Exhibition fee | Not more than 20% of total fund project cost |
| Administration | <ul style="list-style-type: none"> • Up to two Research Assistant (RA) allowed and only for wages and allowances. (Applicable for IHL & GRI only) | <ul style="list-style-type: none"> • Management fees • Allowance / bonus for management and technical staff • Office rental • Utilities such as telephone, broadband, water and electricity bill | RM 2,500 per month/per RA inclusive of SOCCSO / EPF |

| SCOPE | ITEM FUNDED | ITEM NOT FUNDED | NOTE |
|---|--|--|---|
| Raw materials /consumables directly related to the project | <ul style="list-style-type: none"> • Raw material • Consumable | <ul style="list-style-type: none"> • Product and packaging design • Brochure • Advertisement • Web design and development • Product launching | |
| Technology/ IP Acquisition | <ul style="list-style-type: none"> • Local and foreign • Must be further enhanced • Must provide acquisition agreement / details of the technology & IP acquired • Training related to technology transfer conducted locally | | Not more than 50% of total approved project cost |

8.2 Items not listed under the scope of funding may be given consideration based on special approval.

8.3 Procedures for purchasing of equipment and services:

8.3.1 Grant recipients shall **submit quotations** or substantial proof of any purchase or acquisition of services such as Consultancy;

8.3.2 Purchase of equipment or acquisition of services which costs **more than RM100,000.00 shall be accompanied by 3 or more quotations** or substantial proof. Breaking down the purchase of equipment or acquisition of services is prohibited;

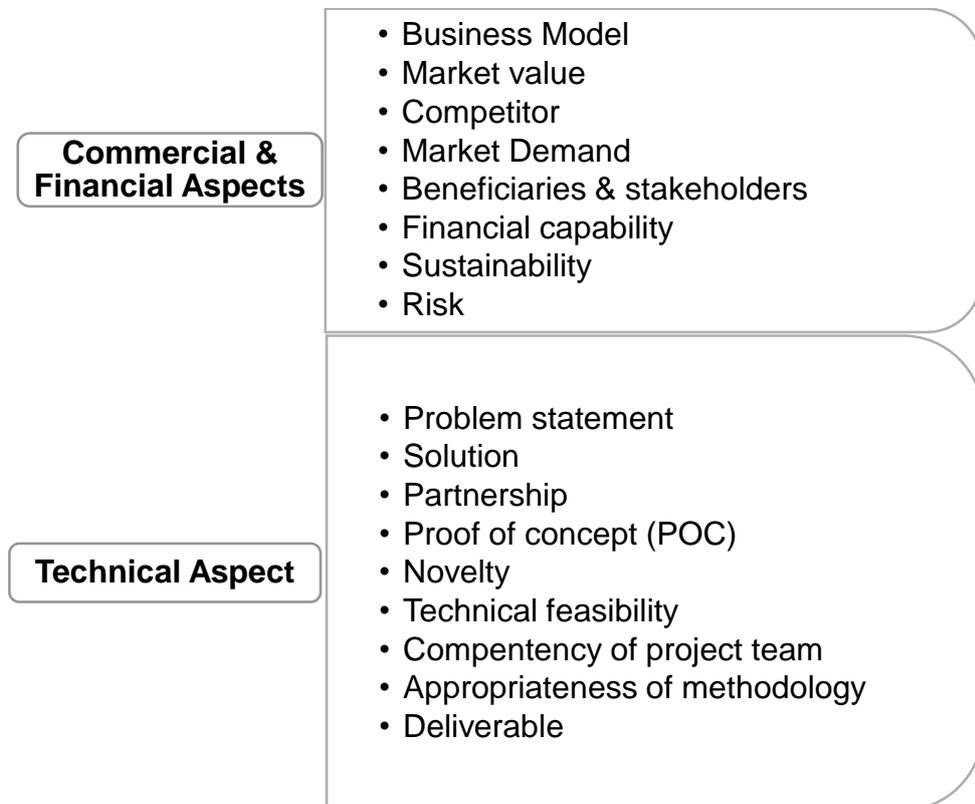
8.3.3 Any financial transaction of more than RM10,000.00 and above must be done properly with all the necessary documentation provided (invoice, purchase order (PO), delivery order (DO), receipts, etc);

- 8.3.4 Purchase of equipment or acquisition of services **should not be from the same vendor** (fairness in dealings and benefit to various vendors);
- 8.3.5 Purchase of equipment or acquisition of services from within the recipient's **company / institution, subsidiaries or associated companies** is not permitted;
- 8.3.6 Purchase order/quotation submitted must be based on current market prices. **Mark-up from the original price is not allowed**; and
- 8.3.7 The supplier of research materials, equipment and services for the project **shall not have any conflict of interest** with the recipient.

9. EVALUATION CRITERIA

- 9.1 The criteria used for the evaluation right from the beginning will consider the following aspects as in Figure 4 below.

Figure 4: SMART Fund's Evaluation Criteria



10. PAYMENT

10.1 The payment mode of approved application will be based on applicant category as shown in Table 4:

Table 4: Payment Mode

| Applicant Category | Payment Mode |
|------------------------|---------------|
| SME | Reimbursement |
| GRI | Disbursement |
| STI Agency | Disbursement |
| IHL (Public & Private) | Disbursement |

10.2 The payment schedule is as shown in Table 5:

Table 5: Payment Schedule

| Tranche | Requirement | Percentage |
|--------------------|--|------------|
| Initial Payment | Upon execution of the Agreement | 20% |
| Subsequent Payment | Upon MOSTI's verification and satisfaction of the successful completion of milestone | 75% |
| Final Payment | After MOSTI is satisfied with the End of Project Report Submitted. | 5% |

10.3 The due diligence will be carried out after the achievement of the first milestone to evaluate the viability of the project.

10.4 The Government has the absolute discretion for the review of the grant approval or the aggregate amount to be paid to the project.

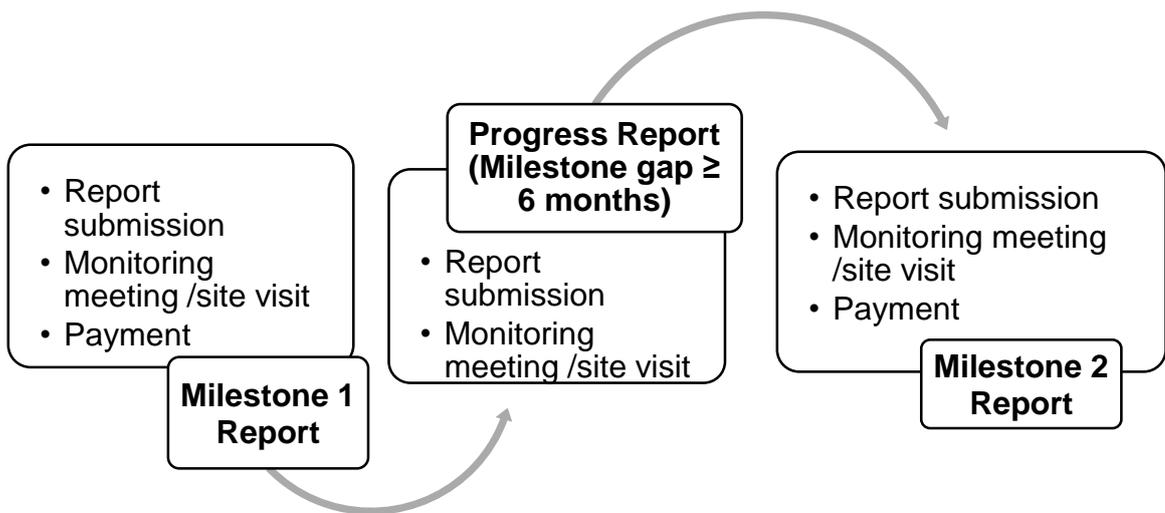
11. PROJECT MONITORING

11.1 The fund recipient is required to **submit periodic reports** (including milestones and financial reports) and documents as specified in the SMART Fund Agreement. **In between milestones for which the duration is 6 months or more**, the fund recipient shall also **submit a progress report**. If the project shows non-compliance to the agreement and non-adherence to timelines, MOSTI reserves the right to suspend or withdraw the funding.

11.2 The monitoring activities shall include **site visits** and meetings to assess progress of the project.

11.3 **Payment** will be made based on satisfactory performance of appropriate milestones in accordance with the terms and conditions as set out in the project agreement. The monitoring process work flow is shown in Figure 5.

Figure 5: Monitoring Process Work Flow



11.4 Project shall not begin until the project agreement has been signed by both parties and document stamped. Cost incurred for all activities prior to signing of the agreement is not claimable and not considered as part of project costs.

11.5 **End of Project Report (EPR) and audited financial report** shall be **submitted within three (3) months** after project completion. All output of the project must acknowledge MOSTI's contribution as a fund provider. The End of Project Report shall have the following information:

11.5.1 Deliverables and direct outputs of the project;

11.5.2 Achievement of the original project objectives;

11.5.3 Commercialisation/ technology transfer plan;

11.5.4 Benefits of the project;

11.5.5 Sectoral /national impacts of the project; and

11.5.6 List of equipment/facilities purchased.

11.6 MOSTI reserves the right to request for periodic information on the progress or to invite for seminar presentation and exhibition or to conduct site visits even after the project has been completed.

11.7 All variation is subjected to MOSTI's approval. The fund recipient needs to submit an application in writing (via institutional coordinator for the IHL and GRI) to MOSTI for approval 3 months before the variations are made.

12. OWNERSHIP AND USE OF R&D EQUIPMENT

All R&D equipment purchased under the grant must be recorded and tagged with the project number for monitoring and verification purposes. The equipment belongs to the fund recipient and the maintenance of the equipment is under the responsibility of the fund recipient once the project has been completed. However, such equipment are not for the sole use of the fund recipient, and must be made available to other research organisations as and when the need arises.

13. INTELLECTUAL PROPERTY RIGHTS

13.1 The end products developed under the SMART Fund are **encouraged to be patented and registered for IP Rights**. The fund recipient has to notify the Secretariat in writing upon the successful registration of the IP.

13.2 The IP rights of the project shall **be wholly owned by the recipient** as specified in the SMART Fund Agreement.

13.3 Any provisional activities using the output of the project should acknowledge MOSTI as the fund provider.

14. INCENTIVE FOR INTELLECTUAL PROPERTIES

14.1 The applicant may apply for the following incentives after the project completion, provided the **allocation for the incentive is stated during grant application**:

14.1.1 Incentive for **disclosure** of the Project Intellectual Property: **RM500.00**;

14.1.2 Incentive for **filing** of patent of the Project Intellectual Property: **RM5,000.00**; and

14.1.3 Incentive for **granting** of patent Project Intellectual Property:
RM10,000.00.

Payment of this incentive shall be on a one-off basis.

14.2 The organisation shall set aside and pay:

14.2.1 The incentive for disclosure of the Project Intellectual Property upon disclosure of the Project Intellectual Property;

14.2.2 The incentive for filing of patent of the Project Intellectual Property upon receipt of the proof of patent filing of the Project Intellectual Property; and

14.2.3 The incentive for granting of patent Project Intellectual Property upon receipt of the proof of patent granted of the Project Intellectual Property.

14.3 The grant recipient must disclose to the Government (MOSTI) in writing, of the existence of the Project Intellectual Property not later than 60 days from the Project Completion Date;

15. TERMINATION

15.1 MOSTI reserves the right to withdraw the grant in the event of the following:

15.1.1 Any false information provided by the recipient.

15.1.2 Changes in scope of the project without the prior written consent of MOSTI;

15.1.3 Change of project leader without the prior written consent of MOSTI;

15.1.4 Any misuse of grants;

15.1.5 Achievement / progress are not as specified in the Agreement of the Fund; and

15.1.6 Any breach of the agreement.

15.2 MOSTI reserves the right, at any time, to review, suspend or withdraw approval of any grant or payment if such measures are deemed necessary; and

15.3 MOSTI reserves the right to make a claim against the recipient for any losses incurred as a result of any default by the recipient as specified in the agreement.

16. EXPENDITURE STATEMENTS AND UNEXPENDED GRANT

16.1 MOSTI reserves the right to request the grant recipient to submit a statement of expenditure at any time during the course of a grant, or to provide supplementary information in support of an interim or final expenditure statement.

16.2 The fund recipient must return the unexpended grant (disbursement mode) to MOSTI **within three (3) months after the completion of the project. For terminated projects, fund recipient shall return the amount disbursed to MOSTI within one (1) month from date of termination notice.**

17. MALAYSIAN CODE OF RESPONSIBLE CONDUCT IN RESEARCH

Everyone involved in the project shall comply with the principles and practices as stated in the Malaysian Code of Responsible Conduct in Research.

18. ETHICAL CLEARANCE AND COMPLIANCE TO OTHER RELATED REGULATIONS

18.1 If a project involves conducting **tests on human beings or animals**, then the Project Leader must obtain and furnish a copy of **ethical clearance, or clearance by the appropriate/ relevant Institutional Biosafety Committee** and also a submission of notification or submission of application for approval to the National Biosafety Board, and other related approvals of regulations by the relevant authorities when necessary.

18.2 Information on the use of biological resources and associated traditional knowledge must also be furnished by filling in the form as in **Appendix 5**. This is a requirement under the 'Rang Undang-Undang Akses Kepada Sumber Biologi dan Perkongsian Faedah' (RUU ABS).

Technology Readiness Level (TRL)

| TRL | Description | Characterisation |
|------------|-----------------------------------|---|
| 1 | Basic Principle | <ul style="list-style-type: none"> • Technology research • Pure science begins translation to R&D |
| 2 | Formulation of Concept | <ul style="list-style-type: none"> • Early studies for application formulation. • Invention & Practical Application Begins. |
| 3 | Experimental Proof of Concept | <ul style="list-style-type: none"> • Analytical validation & proof of concept • Start active research & development |
| 4 | Lab validation | <ul style="list-style-type: none"> • Validation in laboratory environment • Ready to begin bridge for technology transition |
| 5 | Validation in real environment | <ul style="list-style-type: none"> • Validation in relevant environment • Ready to enter technology development |
| 6 | Demonstration in real environment | <ul style="list-style-type: none"> • Demonstrated in relevant environment • Ready to enter system development |
| 7 | Demonstration of prototype | <ul style="list-style-type: none"> • Demonstrated in operational environment • Ready for limited production decision |
| 8 | System complete and qualified | <ul style="list-style-type: none"> • Compliant, qualified & test/demo complete • Ready for operational evaluation |
| 9 | System proven | <ul style="list-style-type: none"> • Completed operational evaluation • Ready for full-rate |

Source: Adapted from NASA TRL

SMART Fund’s Priority Areas

| Priority Area | Thematic Area | Gaps |
|--|--|--|
| Water, Food & Energy (WFE) Nexus | Food Supply, Security and Traceability | <ul style="list-style-type: none"> • Develop and enhance local food production, healthy alternatives, food traceability through smart, new and cross cutting technology - utilising robotics, sensors, real-time data systems. • Develop/Innovate tools to achieve the Sustainable Development Goals' target and to manage local resources. • Create and advance knowledge/technologies that foster more efficient, safe, and secure use of resources within the food-energy-water nexus. |
| Green Growth for Sustainable Development | <p>Construction Material Usage and Waste Management</p> <p>New Technology Commercialisation in Agriculture</p> <p>Waste Management</p> | <ul style="list-style-type: none"> • Moving towards a circular economy solutions which aims to eradicate waste generation - developing a low carbon, resource efficient, sustainable and competitive economy. Reduction of the use of virgin materials, number of items going to the landfills, environmental risk, gas emission and pollution. • Supports the development of green industries and technologies which utilises fewer resources and generates fewer emissions during production of food, transport, construction, housing, energy, lighting, etc. |
| Medical and Healthcare | <p>Increase of Obesity Rate (related to hypertension and diabetes)</p> <p>Increase of Senior Citizen</p> | <ul style="list-style-type: none"> • Develop affordable assistive technologies and early detection devices. • Improve healthcare technologies application by developing future therapies, frontiers of physical intervention and optimising treatment. • Restoring function and/or enabling independence for older people, the disabled and those with long-term conditions through the application of engineering, ICT and physical sciences. • Effective technologies for individuals to manage their own healthcare, for example, using mobile apps, remote monitoring and online access to therapies |

| INDUSTRY (Required to Submit One Copy of the Following Documents) | |
|--|--|
| 1 | SMART Fund Form (1 hard copy) |
| 2 | Soft copy of SMART Fund Form (1 CD) |
| 3 | Memorandum and Article of Association (Certified Copy by Commissioner of Oath) |
| 4 | Form 9 Company Act, 1965 (Certified Copy by Commissioner of Oath) |
| 5 | Form 24 Company Act, 1965 (Certified Copy by Commissioner of Oath) |
| 6 | Form 49 Company Act, 1965 (Certified Copy by Commissioner of Oath) |
| 7 | EPF statement for local project team members |
| 8 | Work permit for foreign team members / appointment letter |
| 9 | Latest audited Financial Report (annual turnover, profit and loss statement, balance sheet, cash flow, etc) |
| 10 | Contract Agreement/ Letter of Acceptance between Entity and Collaborator |
| 11 | Contract Agreement/ Letter of Acceptance between Entity and Consultants |
| 12 | Detailed Curriculum Vitae of project team |
| 13 | IP/ Technology Acquisition Agreement (if applicable) |
| 14 | Insolvency Search (of company and all members in project team) |
| 15 | Declaration Witnessed by Commissioner of Oath |
| 16 | Bank Statement for the last 3 months |
| IHL / GRI / STI Agencies (Required to Submit One Copy of the Following Documents) | |
| 1 | SMART Fund Form (1 hard copy) |
| 2 | Soft copy of SMART Fund Form (1 CD) |
| 3 | Detailed Curriculum Vitae of project team |
| 4 | Contract Agreement/ Letter Of Acceptance between Entity and Collaborator |
| 5 | Contract Agreement/ Letter Of Acceptance between Entity and Consultants |
| 6 | IP/ Technology Acquisition Agreement (if applicable) |
| 7 | Insolvency Search (all members in project team) (if applicable) |
| 8 | Declaration Witnessed by Commissioner of Oath |

List of requirement under the SMART business model

| Step | Component | Description |
|------|------------------------|---|
| 1 | Technology analysis | <p>Step to investigate technical validity of product</p> <ul style="list-style-type: none"> • Search technology database/ patents/ copyrights/ journals • Determine the current state of the competitive technology • Select the technology for application • Determine the technology advantages, risk and benefit over the existing solution |
| 2 | Market Needs Analysis | <p>Step to investigate the marketing concept of the product</p> <ul style="list-style-type: none"> • Identify product uniqueness • Identify product competition • Identify customer requirements • Identify distribution channel • Identify market entry barriers • Identify market growth • Identify product competition and competitors |
| 3 | Venture Assessment | <p>Step to determine whether the business opportunity demonstrates profit potential</p> <ul style="list-style-type: none"> • Identify financial, physical, and human resources required for commercialization; • Identify the status of intellectual property requirements; • Establish a positive profit potential/ return of investment |
| 4 | Technology Feasibility | <p>Step to determine the technical viability of the technology</p> <ul style="list-style-type: none"> • Identify the technical critical specification • Study production methodology, process configuration, materials, and resource requirements |
| 5 | Market Study | <p>Step to study the data relating to customer preferences for product</p> <ul style="list-style-type: none"> • Potential customers/beneficiaries; • Identify the important customers |

| | | |
|---|-----------------------------------|--|
| | | <ul style="list-style-type: none"> the identification, interest and availability of suppliers, contractor or services providers, their technical capability and financial capacity, and price trends |
| 6 | Economic Feasibility | <p>Step to measure the cost-effectiveness of the solution</p> <ul style="list-style-type: none"> Develop a financial model of the business venture; Develop financial analysis; Determine whether the business opportunity presents sufficient profit margin. |
| 7 | Engineering prototype/pilot plant | <p>Step to engineer small scale production system that employs new production technology which is operated to find out about the behavior of a process before using it on a large industrial scale</p> <ul style="list-style-type: none"> Pilot plants - allows the collection of real data, streamline the process to ensure full-scale production plant runs properly, can be used to produce useable products, start building a market, and convince investors of long-term viability. Design of the prototype/pilot plant and new production technology is important. |
| 8 | Strategic marketing plan | <p>Step to profiled and finalised the target market</p> <ul style="list-style-type: none"> Define competitiveness advantage of product; Identify target/niche markets and size; Select product features; Determine competitive price; Select distribution channel/ strategies and alliances; Identify/Develop appropriate marketing team. |

INFORMATION ON USE OF BIOLOGICAL RESOURCES AND ASSOCIATED TRADITIONAL KNOWLEDGE

1. Were biological resources or traditional knowledge associated with biological resources or information relating thereto utilised in the invention applied for.

Yes No

2. If yes, provide details:

- i. Country :
- ii. State :
- iii. Permit date :
- iv. Benefit sharing agreement date:

A certified copy of the permit accompanies this form.

3. Date of notification of this application for a patent to the National Competent Authority under the Access to Biological Resources and Benefit Sharing Act 2016.

A certified true copy of the receipt of the notification accompanies this form