



## RAPID Technology Transfer Grant

### Call for Proposals Guidance

**Deadline for Full Proposal Submission: Thursday, June 08, 2023 (11:59 PM)  
Pakistan Time**

#### General Information

#### Program Description:

The RAPID Technology Transfer Grant (RTTG) programme is anticipated to facilitate the transfer of new academic knowledge and research to accelerate commercialization by supporting promising partnerships between academia and industry. Specifically, the RTTG programme is a strategic investment by HEC so that public investment in research yields benefit for the people.

In this regard, the Higher Education Commission (HEC) of Pakistan invites researchers at Higher Education Institutes (HEIs) in Pakistan to respond to this RAPID Research and Technology Grant (RTTG) Call for Proposals. The RTTG programme is supported by the World Bank and implemented by HEC.

This RTTG Call for Proposals focuses on import replacement solutions.

The RTTG is a fast-track funding mechanism developed to support time-sensitive technology transfer projects at an advanced stage that can make an impact on a short, six-month, timeline. This RTTG Call is focused on addressing Pakistan's current financial distress by encouraging industry-academia collaborations to enable import substitutions by promoting home-grown technologies. Successful proposals will support short-term applied research, product innovation, and commercialization of developed technological research and solutions.

The RTTG programme will award grants based upon a competitive, yet swift, peer-review of proposals. Proposals must include academic and industry partners. The industry partners must commit to a financial cash contribution to the project.

For this RTTG Call for Proposals, proposals must align with one of the Priority Thematic Areas for import substitutions indicated below:

1. Health & Pharma
  - a. Medicines and active pharmaceutical ingredients (low cost and indigenous production)

- b. Surgical Instruments (low cost, indigenous production, and digitization)
      - i. Hand Antiseptics & Surgical Scrubs
      - ii. Surgical Supplies
    - c. Bandages & Dressings for Health Care
    - d. Medical Securement Tapes & Wraps
    - e. Sterilization & Monitoring Devices
    - f. Optical Lens Materials
    - g. Testing instrumentation
    - h. Other topics under Health & Pharma leading to Import Substitution
- 2. Agriculture & Food Security
  - a. Food Production and Crop Yield
    - i. Genetically modified seeds (improved quality of indigenous Seeds)
      - o Grains & Cereals
      - o Cotton
      - o Fruits
    - ii. Field Productivity
      - o Crop Monitoring Systems
      - o Fertilizers (Smart application & local production)
      - o Crop Protection, Weed and Pest Management
      - o Plant Disease Prevention and Management
      - o Soil Testing & Its Quality
      - o Crop Yield Forecasting systems
  - b. Edible Palm Oil (local production or local substitutes)
  - c. Olive Oil (local production)
  - d. Value added items derived from fruits & crops (Fruit essence etc).
  - e. Other topics under Agriculture & Food Security leading to Import Substitution
- 3. Textile
  - a. We are looking for new indigenous technologies to reduce costs and imports dependence in;
    - i. Fiber and Polymer Technology
    - ii. Material and Process Modelling
    - iii. Functional Textiles and Applications
    - iv. Sustainability and Society Impact in Textiles (Textile waste reduction)
    - v. Testing and Evaluation of Textiles
    - vi. Other topics under Textile leading to Import Substitution
- 4. Material Sciences
  - a. Construction/Man-Made Materials (low cost & indigenous production of products/items for import substitution)
  - b. Other topics under Material Sciences leading to Import Substitution
- 5. Household Cosmetics and Body-care Goods
  - a. Strengthening local cosmetics industry leading to import substitution
  - b. Other topics under Household Cosmetics and Body-care Goods leading to Import Substitution

## 6. Environment

- a. Fog and Smog Mitigation
- b. Pollution
- c. Other topics under Environment leading to Import Substitution

## 7. Information Technology

### a. Cyber Security

- i. Digital Forensics Solutions
- ii. Cyber Threat Intelligence
- iii. Social Media Analytics & Open Source Intelligence
- iv. Automated Security Auditing & Vulnerability Assessment Solutions
- v. Industrial Cyber Security/ OT Security solutions
- vi. IoT Security Solutions
- vii. SIEM solutions
- viii. Public Key Infrastructure Solutions
- ix. End to end encryption solution
- x. Next Generation Firewalls
- xi. Intrusion Detection and Prevention Systems
- xii. Mobile phones/smart Devices Management solutions
- xiii. Malware Analysis, Sandboxing, Reverse Engineering solutions
- xiv. Endpoint detection& protection solutions
- xv. Network Traffic Analysis, Data Monitoring solutions

### b. Artificial Intelligence (AI)

- i. AI for Healthcare
  - Medical diagnosis/ screening
  - Health monitoring and prediction
  - Drug discovery and development
  - Clinical decision-making support systems
- ii. AI for Agriculture
  - Smart and Precision Agriculture
  - Soil quality analysis
  - Disease and pest detection and control
  - Autonomous farming equipment
- iii. AI for Smart Cities
  - Smart Traffic Management and Control
  - Mobile Augmented Vision and Virtual Reality for Smart Cities
  - Smart energy management and optimization
  - Safe City Management
  - Waste Management
  - Civil Safety AI Enabled Security Cameras/Drones
  - Security Surveillance
- iv. AI for Education
  - Personalized learning
  - Intelligent tutoring systems
  - Adaptive learning platforms
- v. Customer service and chatbots
- vi. Media Monitoring and Analytics
- vii. Disaster Prediction and Management

- viii. Natural Language Processing
- ix. Text and Data Mining
- x. Digitization
- xi. Planning and Optimization Algorithms
- xii. Autonomous Systems
- c. Robotics and Automation
  - i. Energy Generation and Management
  - ii. Security/ Crime Prevention
  - iii. Disaster Management
- d. Other topics under Information Technology leading to Import Substitution

Each applicant seeking funding in response to this Call for Proposals can propose ideas based on the above-mentioned Priority Thematic Areas.

This Call for Proposals is focused on technology transfer in an academic-industry collaboration. The proposed project scope must be achievable in the six-month grant period. Proposals must address possible regulatory, certification and other challenges that may affect the timeline for import substitution.

Successful proposals will include milestones and key performance indicators that ideally begin delivering an impact from the start of the project and continue through the proposed project timeline. Those projects that have a steady stream of high value immediate outputs and outcomes will be preferred.

#### **Anticipated Funding Amount:**

1. Budgets for RTTG awards may range between **Rs. 5 – 20 million**. HEC funding may not be used to support the costs of the industrial, sectoral or government collaborators.

All RTTG proposals must include industrial, sectoral and/or sectoral collaborators. Collaborators must provide in-cash contributions of at least 15% of the requested HEC grant amount to support the project. Additional in-kind contributions are expected and should be documented in the proposal.

RTTG funding may be used for the following, subject to HEC Financial Rules for Grants:

- **Honorarium** for PI and co-PIs
- **Stipends** for bachelors, masters, doctoral students, and post-doctoral scholars to support taking the prototype or proposed product to market
- **Limited prototype development costs**
- **Patent filing**
- **Costs associated with producing licensing agreements**
- **Legal and financial investment advice**
- **Marketing of the prototype** or proposed product to appropriate investors or stakeholders.

HEC funding may not be used to support the costs of the industrial/private sector partner(s).

## **Applicant Eligibility**

Lead Principal Investigators (PIs) must:

- A. be a regular faculty member of a Higher Education Institution (public and private) in Pakistan, or hold a contract equivalent to the length of project duration.
- Industry, sectoral and/or government collaborators are expected to have demonstrated experience in the priority thematic area and in delivering on the activities that will lead to import substitution as described in the proposal.

## **Deadline for submission of proposal**

Full Proposals must be submitted to HEC by **June 08, 2023 (11:59 PM)** Pakistan Time.

### **I. Proposal Preparation Instructions**

#### **A. Basic Guidance**

All RTTG proposals must be submitted through the HEC online portal by the higher education institution at which the Principal Investigator is a faculty member.

Any deviation from the proposal preparation instructions will lead to the proposal being returned without review

#### **B. Proposal Formatting**

- All Proposals should use the .docx Proposal Template Document as the basis for the submission. The section guidance (in light grey) should be deleted prior to proposal submission.
- Proposals must be submitted in English.
- Proposals should include a Table of Contents.
- All sections of the application must be completed prior to submission.
- The page limit for each section must not be exceeded.
- All pages of the proposal should have a page number.
- Proposals should be submitted in 11-point, Calibri font.
- Tables should be completed in the format and length indicated in the relevant Proposal Template Document.

- Proposal sections should not include URLs for additional information. Information or documentation beyond that included in the written proposal will not be used in the evaluation process.
- Proposals should follow accepted academic practice in citing references throughout the proposal. References should be numbered sequentially and listed separately as a required attachment to the proposal. References should be reported in a standard form and include: the names of all authors; the article and journal title; book title; volume and page numbers; and year of publication. If available, a Digital Object Identifier (DOI) may be provided.

## **C. Full Proposal Submissions**

Principal Investigators must complete each section of the proposal as described in the attached link to the Full Proposal Template .docx Document. The section guidance (in light grey) should be deleted prior to proposal submission.

- **[Web Link for Full Proposal Application Form](#)**

## **II. Evaluation and Selection Process**

The selection of RTTG awards will be made through an open, rigorous, transparent, competitive and merit-based process consistent with international standards for funding academic technology transfer projects. All Proposals submitted in response to this Call for Proposals will be evaluated by independent experts.

The Evaluation process consists of two sequential steps: Administrative Screening and Desk/Panel Evaluation of all eligible Proposals.

### **II(a). Administrative Screening**

For the administrative screening, the Higher Education Commission ensures that the Principal Investigator and the lead institution submitting each Proposal is eligible to submit, the project aligns with a Priority Thematic Area identified in the Call for Proposals, and that the necessary collaborators are identified.

If the Proposal is deemed to be eligible, it will undergo the Desk/Panel evaluation described below. For those Proposals that are deemed ineligible for the RTTG, the Principal Investigator will receive an email identifying the reasons why the Proposal will not be considered for further evaluation from HEC.

### **II(b). Proposal Desk/Panel Evaluation**

For the Desk/Panel Evaluation, Proposals will be grouped by thematic areas and assigned to a Panel for evaluation. The Panel will be composed of a Panel Chair, Panel Members & Subject Experts. All personnel assigned to the Panel will be experts – including national and international research leaders, sectoral representatives, and subject matter experts.

Each Proposal will be independently evaluated by at least two independent reviewers. These reviewers can be from the Panel or external experts, as suggested by the Panel members and

endorsed by the Panel Chair. Additional reviews may be obtained by appropriate sectoral industrial representatives and/or subject matter experts if the Panel Chair deems it appropriate.

The reviewers will assess each proposal according to the criteria identified on the Evaluation Rubric.

### **II(c). Selection**

Following the Desk/Panel Evaluation of Proposals, each Panel will consolidate its results and make recommendations for RTTG awards to the HEC. HEC will build a portfolio of awards across the Priority Thematic Areas based upon the recommendations of the Panels.

Proposals recommended for award should meet the following criteria: the proposal must be linked to a Priority Thematic Area as described in the Call for Proposals; based upon the written proposal, there is a strong likelihood of successful implementation of the proposed project in the available time period; the project team, the host institution, and the industrial/sectoral partners should be capable of implementing the project; and the proposal must achieve a scoring threshold as determined by the evaluators in the Desk/Panel Evaluation to ensure quality.

At the conclusion of the Selection process, the evaluations of each proposal submitted will be shared with the proposing institution. Both the scoring rubric(s) and the written comments will be made available. The identities of the expert evaluators will be redacted.

**Grievance procedure:** In exceptional circumstances, institutions submitting a RTTG Proposal that was not selected for funding may submit a written Notice of Grievance to the Ethical Appeal Review Board at the Higher Education Commission within 7 working days of selection results being announced. A Notice of Grievance is permitted only when the institution believes that the proposal was not evaluated fairly or in a reasonable manner.

### **III. Negotiation and Implementation**

Following the Evaluation and Selection process, the Higher Education Commission – through the RTTG Program Manager - will enter negotiations with the PI and the host institution on the following topics.

**Principal Investigators of those proposals selected for funding will be required to provide a complete logical framework and results-based chain with defined KPIs at each stage of the project (input-output-outcomes-impact). Projects which do not provide a plan to continue the projects after the grant lifecycle for achievement of tangible outcomes with a clear road to impact will not proceed to sign the grant contract.**



The final budget for each selected RTTG project will be negotiated following the evaluation and selection process. The budget will depend upon the proposed research and development activities, the size of the research team, the costs associated with the proposed workplan, the resources required, the capacity of the research team to achieve the results, and the feedback to the PI provided through the Evaluation and Selection process. The negotiation on anticipated results will occur concurrently with the budget negotiation.

Prior to the formal signing of contracts and launch of the selected projects, several critical elements must be completed: (1) a revision and strengthening of the proposal in response to the comments and feedback provided in the evaluation process; (2) a fiduciary assessment and procurement plan; (3) an environmental and social safeguards screening and management plan. In addition, a detailed implementation plan for the project must be prepared and approved.

#### **IV. Project Websites**

Full details of the RAPID Technology Transfer Grant are available on the Higher Education Commission website: <http://www.hec.gov.pk/RTTG>

Questions regarding the RAPID Research and Technology Fund may be directed to: [info-r&D@hec.gov.pk](mailto:info-r&D@hec.gov.pk)