Philippine Council for Industry, Energy and Emerging Technology Research and Development
Department of Science and Technology
(PCIEERD-DOST)

CALL FOR PROPOSALS 2018

I. R&D FUNDING OPPORTUNITY

The Department of Science and Technology (DOST) prepared the Harmonized National Research and Development Agenda (HNRDA) 2017-2022 to ensure that results of science and technology endeavors are geared towards maximum economic and social benefits for the people. A new program called Science for Change (S4CP) was also created to accelerate Science Technology and Innovation (STI) in the country in order to keep up with the developments in our time wherein technology and innovation are game changers. S4CP focuses on four categories, namely:

1. Program Expansion in 10 areas
2. New Programs in 5 areas
3. S&T Human Resource Development
4. Accelerated R&D Program for Capacity Building of R&D Institutions and Industrial Competitiveness.

For the next five years, the DOST will be guided by the tagline "Science for the People" in its pursuit of R&D and S&T initiatives in 12 priority areas. The Science for Change Program (S4CP) and Utilization Policy Framework is therefore anchored on “Science for the People.”

With the HNRDA in place, the Philippine Council for Industry, Energy and Emerging Technology Research and Development (PCIEERD) of the Department of Science and Technology (DOST) is ready to accept research and development (R&D) proposals for 2018 on areas considered as priority under the Science for Change Program (S4CP) of the DOST.

The R&D proposals should be directed towards harnessing the potential of emerging technologies, expand technology development and innovation for the industry, energy and transportation sectors, and develop S&T interventions and solutions for climate change adaptation and mitigation and disaster risk reduction.

This funding opportunity encourages S&T collaboration and applied research among State Colleges and Universities (SUCs), government Research and Development Institutes (RDIs), non-profit S&T networks and organizations, private sector and other proponents seeking funding for their R&D initiatives.

A. Scope of R&D Work

Proposals must be aligned with the HNRDA and the PCIEERD Priority Thrust, under the following Thematic Areas:

1. **Appropriate Technologies for Industry Competitiveness**

The S&T support for industry competitiveness has a diverse coverage including electronics industry, manufacturing, mining and minerals and food security. The research topics for this thematic area aim to address the needs of the industry in producing new and innovative products and opportunities to increase production that would meet product standards in the local and global markets.

Specific areas for research are:

a) Electronics, Semiconductor and ICT Industry

- Artificial Intelligence for Industry, Transport and Education Application
- Big Data Analytics (Government Data Integration)
- R&D for Creative Industries

b) Mining and Minerals Industry

- Development of Value-Adding Technologies for Copper, Iron, Chromite, Nickel, Chromium and Gold Minerals for Industrial Application
- Geological Assessment of Untapped/Undiscovered Minerals (i.e. Black Sand and Trace and Rare Earth Elements)
- Green Mining Technologies
- Clean Metallurgical Processes
  - Hydrometallurgical
  - Pyrometallurgical
  - Electrometallurgical

c) Metals & Fabrication Industry

- Cost Efficient Manufacturing Processes and Equipment to Increase Local Content of Aerospace, Automotive and/or Train Parts and Components
- Design, Development and Prototyping of Food Processing Equipment for Micro, Small and Medium Enterprises (MSMEs)

d) Food Industry

- Baseline Studies on Microbiological and Chemical Hazards on Food
- Science-Based Quality Assurance System for Priority Products (e.g. fresh and processed banana)
- Value-adding of Fishery By-Products (e.g. fish oil, chitin, collagen)

2. **Sustainable Energy**

The S&T thrust for the Energy sector is to continue the development and deployment of cost-efficient smart technologies and increase the adoption of renewable energy systems in the country. Research proposals are welcome that will contribute to the challenges in developing technology solutions for renewable and alternative energy systems.

Specific areas for research are:

a) Smart Energy Efficient Systems for Low Carbon Economy

- Efficient hydrokinetic energy harvesting systems
- Sustainable urban waste to energy conversion

b) Renewable Energy (RE) Systems

- RE technologies and business models integration for sustainable off-grid power supply
- Thermo/electro/biochemical hydrogen production
- Solar power concentrators (SCP)
- Solar heating and cooling (SHC)

3. Sustainable Mass Transport

The challenge for the transport sector is to have an integrated, responsive, effective, efficient & safe land and maritime transport systems and services. It also aims to address issues on road congestion (poor mobility, stress and health related impacts), high fuel consumption, and opportunity loss in productivity. Proposals are welcome that will contribute to the above challenges of the transport sector.

Specific areas for research are:

a) Intelligent Transport System

- Vehicle-to-vehicle connectivity and information sharing
- Road infrastructure-to-vehicle
- Automated Parking Space Detection System
- Harmonized RFID/WSN using multi-path transmission protocol & cognitive frequency
- PUV tracking for fleet management & driving behavior

b) Sea Transport Research on Marine Vessels

- Standard sea-worthy hull design using alternative indigenous lightweight materials
- Navigational Route Capacity Measurement & Analysis for inter-island connectivity

c) Mass Transport Systems (Train, PUV)

- Prototype double decker bus development and fuel efficiency analysis in compliance to Euro 4 Standards
- Development of Positive Train Control (PTC) components for railway system

4. Environment, Climate Change Adaptation and Disaster Risk Reduction

S&T-based research topics in addressing issues on the environment and critical activities on climate change adaptation (CCA) and disaster risk mitigation management (DRRM).

Specific areas for research are:

a) Water Environment R&D
- Wastewater Management

b) Air Quality R&D
- Air Pollution Control and Management

c) Solid Waste Management

d) DRR/CCA Proofing Infrastructure Systems and Techniques
- Urban infrastructure rainfall inflow-outflow modeling and early warning systems

e) Hazards and Risk Assessment Tools and Systems Program
- Liquefaction Hazard Assessment

f) Instrumentation for early warning, monitoring and rapid assessment
- Forecast Based Financing and Weather Based Insurance Mechanism

g) Marine Geology and Oceanography Program

h) Human Security
- R&D for UAV, Airborne and Space Technology

Research proposals that will address the PCIEERD Priority Thrust may also include the following emerging technology applications:
- Materials Science
- Nanotechnology
- Space Technology
- Photonics

B. Expected Outputs and Outcomes

The proposal/s should be able to create a value by providing a **Solution** to **Needs**, and by maximizing its **Benefits** through **Differentiating** with competing products or technologies.

The term “OUTPUT” means an activity, effort, and/or associated work product related to project goals and objectives that will be produced or provided over a period of time or by a specified date. Outputs may be quantitative or qualitative but must be measurable during an assistance agreement-funding period. Expected outputs from the projects to be funded may include any of the following:

- Publications (in recognized scientific journals)
- Patents (tangible measure of innovation)
- Products/ Process (commercial value of outputs)

- People Services (increase in the scientific workforce)
- Places (facilities that enable increased 4Ps output)
- Policies (adopted science-based guidelines)

The term "OUTCOME" means the result, effect or consequence that will occur from carrying out a project or activity that is related to programmatic goal or objective. Outcomes may be environmental, behavioral, health-related, or programmatic in nature, but must be quantitative. These may not necessarily be achievable within an assistance agreement-funding period.

II. FUNDING AWARD INFORMATION

A. Fund Information

The PCIEERD-DOST anticipates R&D award of P1,000,000 to P50,000,000 per program/project, subject to availability of funds and the quality of proposals received. Programs and projects requiring larger budgets will also be entertained, subject to deliberation of the PCIEERD Management Team (PMT).

B. Anticipated Number of Projects

PCIEERD-DOST anticipates up to approximately 100 research agreements under this announcement, subject to evaluation on the quality of proposals. In addition, the PCIEERD-DOST may give additional project grants under this announcement, consistent with the PCIEERD and DOST policies, if additional funding becomes available after the original selections.

C. Partial Funding

The PCIEERD-DOST may partially fund discrete portions or phases of proposed projects. If PCIEERD-DOST decides to partially fund a proposal, it will do so in a manner that does not prejudice any applicant or affect the basis upon which the proposal or portion thereof, was evaluated and selected for award, and therefore maintains the integrity of the selection process.

D. Deadline of Proposal Submission

The closing date for the submission of full-blown proposals through the **e-Proposals** submission facility is on **1 June 2017**. A notification will be issued to eligible entities whose proposals have been evaluated and recommended for award before **31 December 2017.** A PCIEERD R&D Manager will then be assigned to each project proponent to provide guidance in finalizing their proposals.

Applicants may opt to submit a capsule proposal, prior to submission of a full-blown proposal, to seek advise from PCIEERD if it is worth pursuing submitting a full-blown. The capsule proposal should be submitted through the **e-Proposals** submission facility on or before **31 March 2017.**

*Note: Pre-selected capsule proposals do not mean approval of funding support. Proposals will have to undergo the usual evaluation process of the Council.

E. Commencement Period for Approved Project

The target commencement period for approved projects may start on **January 2018** or earlier depending on the result of the evaluation and notice of award of successful applicants.

F. Type of Funding

The funding for selected projects will be in the form of a research agreement under the PCIEERD Grants-In-Aid (GIA) Program. Research agreements permit substantial involvement of the PCIEERD designated R&D Managers and the selected applicants in the performance of the work supported. Although PCIEERD-DOST will negotiate precise terms and conditions relating to substantial involvement as part of the award process, the anticipated substantial Government involvement for this project will be:

- Close monitoring of the successful applicants' performance to verify the results reported by the applicant;
- Collaboration during performance of the scope of work;
- Review of the substantive terms of proposed contracts and review of competitive procurement procedures (PCIEERD-DOST will not select contractors)
- Approval of qualifications of key program/project personnel (PCIEERD-DOST will not select employees or contractors employed by the award recipient);
- Review and comment reports prepared under the research agreement

G. Supplementary Information

Demonstrations must involve new or experimental technologies, methods, or approaches, where the results of the project will be disseminated so that others can benefit from the knowledge gained in the demonstration project. A project that is accomplished through the performance of routine, traditional, or established practices, or a project that is simply intended to carry out a task rather than transfer information or advance the state of knowledge, however worthwhile the project might be, is not considered a demonstration project. Such projects/activities are not eligible for funding under this announcement.

III. ELIGIBILITY INFORMATION

A. Eligible Entities

Any Filipino, public or private entity with proven competence may apply for GIA support of PCIEERD and its grant-giving units, provided that projects fall under the specific research areas with overall goal to benefit Filipinos.

Preference will be given to public and private universities and colleges, Research and Development Institutes (RDIs), R&D Consortia, non-profit laboratories, other public or private non- profit S&T institutions located in the Philippines. Non-profit S&T organizations are those, which: (1) are operated primarily for scientific, educational, service, or similar purposes in the public interest; (2) are not organized primarily for profit; and (3) use its net proceeds to maintain, improve, and/or expand its operations. Non-profit organizations engaged in lobbying activities are not eligible to apply.

B. Cost Sharing and Matching

The Applicant should provide at least 20% counterpart funding. Only eligible and allowable costs may be used for counterpart fund and/or in-kind contribution (ex. utility costs, office space rental, etc.), as determined by PCIEERD-DOST. The proposal must describe how the applicant will provide the counterpart fund/in-kind contribution and the role that PCIEERD-DOST funding will play in the overall project.

C. Threshold Criteria

The following are requirements during proposal submission to ensure consideration for funding:

1. Only proposals from Eligible Entities that meet all of the criteria will be evaluated against the ranking factors in Section V of this announcement. Applicants found ineligible for funding consideration as a result of the threshold eligibility review will be notified within 15 calendar days of the ineligibility determination.

2. Proposals to be submitted and or funded under this announcement must demonstrate the advancement of Science and Technology, alignment to government's economic policy direction and PCIEERD R&D Agenda and Priority Thrust identified in Section I.

3. Proposals (including all project documents submitted) must be written in English.

4. Proposals must comply with the proposal submission instructions and requirements set forth in Section IV of this announcement, otherwise these proposals will be rejected.

5. Proposals must be received by the PCIEERD on or before the proposal submission deadline specified in Section II of this announcement. Applicants are responsible for ensuring that their proposals reach the PCIEERD on the set deadline of submission.

6. Proposals received after the submission deadline will be considered late and defer their evaluation without further consideration unless the applicant can clearly demonstrate that lateness was due to mishandling

on the part of PCIEERD.

IV. PROPOSAL AND SUBMISSION INFORMATION

A. Content of e-Proposals

1. Letter of Intent and Endorsement

Together with the proposal, PCIEERD-DOST requires submission of a formal letter of intent from the applicant and an endorsement from the authorized head of their organization. The authorized head of the organization will also be the principal signatory of their organization for the research agreement award. For projects that will be implemented in the regions, endorsement from the DOST Regional Offices or PCIEERD Regional R&D Consortia is required.

The letter of Intent and Endorsement Letter should be addressed to:

Carlos Primo C. David, Ph.D.
Executive Director
Philippine Council for Industry, Energy and Emerging Technology Research and Development (PCIEERD)
Department of Science and Technology (DOST)
5th Level, Science Heritage Building, DOST Compound,
Gen. Santos Ave., Bicutan, Taguig City

2. Narrative Proposal

Applicants are advised to download all applicable PCIEERD-DOST GIA Forms from the PCIEERD website or the e-Proposals website and completely accomplish these forms. Aside from the Frequently Asked Questions (FAQs) in the e-Proposals website, Guidelines for Uploading Files can be viewed once the applicant registers and logs on in the system. Instructions for the e-Proposals submission and forms are available from the PCIEERD website.

The narrative proposal work plan must explicitly describe the following in the downloaded forms.

a. Project Rationale and Description

Describe the project rationale and significance of the proposed project to the current needs of the country. It may include novelty, potential for publication/IP, and success/failure ratio.

b. Project Objectives

State the specific purpose to be addressed by the project on the problem areas identified.

c. Review of Literature

Summarize related researches/activities that have been conducted. Include the state-of-the-art of current technology/information/services from which the proposal will take off. It may include the advantages of the technology over existing technologies, market need, field testing requirement, and user engagement.

d. Methodology

Summarize approaches on how the associated work products, processes, information and services will be implemented, developed and acquired.

e. Work Plan

Describe specific activities and/or methods to be undertaken and estimated timeline for each task.

f. Project Outputs, Deliverables and Expected Outcome

Identify the expected project outputs and how the progress towards achieving the outputs will be tracked and measured. Identify the expected quantitative and qualitative outcomes of the project; including what measurements will be used to track the progress towards achieving the outcomes and how the results of the project will be evaluated.

Indicate the specific products, processes, or services which the project is expected to produce and quantify possible socio-economic benefits, co-investment, profitability, environment impacts and contribution towards the advancement of S&T which can be derived from the project.

g. Financial Budget Requirement Work Plan

Indicate the estimated funding amounts for each work component/task, which should be consistent with the Line-Item Budget (LIB).

h. Line Item Budget

Provide the total budget requirement for the project reflecting the counterpart of the Applicant using PCIEERD-DOST Forms 2B-2. Applicants must itemize the costs related to personnel, travel, equipment, supplies, other direct costs, and total costs. Equipment and other large expense items should be supported with justification. Estimation for the rates of project personnel should be in accordance with the prescribed rates for Honoraria and hiring of DOST GIA Personnel.

i. Attachments

Applicants may attach documents to the Narrative Proposal. These may include related information on the proposed program/project like, resumes or curriculum vitae, support letters from relevant agencies/organizations, market supply/demand projections, etc. Below are explanations of required information, which should be attached in the narrative proposal. These can be submitted through the e-Proposals submission facility of PCIEERD for this CFP.

a. Roles of the Applicant and Partners, if there is any.

b. Institution's Track Record

Description of the applicant's organization and experience related to the proposed project.

c. Project Team Information

Short description of the roles of each project staff, expertise/qualifications, staff knowledge. The Applicant may want to expound on how the manpower resources can be obtained to successfully achieve the goals of the proposed project.

d. Past Performance

Programmatic Capability: Submit a list of government funded assistance agreements or foreign equivalent assistance agreements similar in size, scope and relevance to the proposed project that your organization performed within the last three years (no more than 5 projects agreements, and preferably PCIEERD/DOST agreements) and describe (i) whether, and how, you were able to successfully complete and manage those agreements and (ii) your history of meeting the reporting requirements under those agreements including submitting acceptable final technical reports.

B. e-Proposals Submission

Applicants are required to submit proposals through the PCIEERD-DOST ***e-Proposals*** **submission facility** before the Closing Date on **1 June 2017**. Applicants will receive automatic reply through email confirming receipt of proposals.

C. Pre-Proposal Assistance and Communication

PCIEERD Project Managers are available to provide appropriate assistance to potential applicants interested in competing for this Call for Proposals. This may include assistance to potential applicants in determining eligibility of the applicant or the applicant's proposed project for funding, questions about

administrative issues relating to the submission of a proposal, and clarifications on the announcement.

Contacts:

Energy, Transportation and Disaster Risk Reduction Sectors: Nonilo A. Peña, +632 8372935, nilo_pcierd@yahoo.com

Industry and Environment Sectors: Niñaliza Escorial, +632 8372926, ninaescorial@gmail.com

Emerging Technologies Sectors: Nelson Beniabon, +632 8372071 to 82 local 2106, nobainob@gmail.com

IV. EVALUATION CRITERIA

Only those proposals that meet the threshold criteria in Section III Part C will be evaluated according to the criteria set forth below. Applicants should directly and explicitly address these criteria as part of their proposal submission. Each proposal will be rated using points system, with a total of 100 points.

A. Evaluation Criteria

Criteria	Points
1. Project Approach: The PCIEERD will evaluate the following factors: 1.1 Strategies of implementation for addressing all of the requirements in Section I; 1.2 Technical soundness of the proposal 1.3 Reasonable timeframe for the execution of the tasks associated with the project; 1.4 If proposal includes a commitment for the involvement of partner institution or a private cooperator to utilize the technology, services and or eventual transfer of results of the project.	30
2. Outputs and Outcomes 2.1 Extent and quality to which the proposal describes the evaluative component of the project, including how the applicant's success in achieving the expected project outputs and outcomes for addressing the requirement in Section I Part B; 2.2 How results can be quantified, tracked and measured, as mentioned in the Project Results of the Narrative Proposal Section.	30
3. Track Record of Applicant-- The PCIEERD will evaluate the applicant's technical ability to successfully complete and manage the proposed project taking into account the following: 3.1 Track record in successfully completing and managing equivalent funded assistance agreements (assistance agreements include government and/or foreign equivalent grants and agreements) similar in size, scope, and relevance to the proposed project performed within the last 3 years, 3.2 History of meeting reporting requirements under government and/or foreign equivalent funded assistance agreements (assistance agreements include government and/or foreign equivalent grants and agreements) similar in size, scope, and relevance to the proposed project performed within the last 3 years and submitting acceptable final technical reports or the equivalent under those agreements, and	15

Criteria	Points
3.3 Institution's existing facility/capability to carry out similar project towards achieving the expected outcomes and outputs (e.g., results) under government and/or foreign equivalent funded assistance agreements performed within the last 3 years. ***NOTE:*** *In evaluating applicants under this criterion, the PCIEERD may also consider relevant information from other sources including agency files and prior/current grantors (e.g., to verify and/or supplement the information supplied by the applicant). Applicants with no relevant or available past performance or reporting history will receive a neutral score for these elements. A neutral score is half of the total points available in a subset of possible points. If no response is provided for these items, the applicant may receive a score of 0 for these factors.*	
4. Staff Expertise/Qualifications: 4.1 Project Personnel expertise/qualifications to successfully achieve the goals of the proposed project, and 4.2 Description of the applicant's organization and experience relating to the proposed project.	15
5. Budget/Resources: 5.1 Proposed project budget is reasonable/justifiable to accomplish the proposed goals, objectives, and measurable project outputs and outcomes 5.2 Applicant's counterpart to complement the PCIEERD funding as a requirement in Section III Part B. Extent on how the applicant will allocate the use of PCIEERD funding with other sources of funds to carry out the proposed project(s).	10
TOTAL	**100**

B. Review and Selection Process

A review team will evaluate each proposal using the evaluation criteria described above. Each proposal will be given a numerical score and will be ranked accordingly. Preliminary funding recommendations will be forwarded to the Approving Authorities based on this ranking.

C. Other Factors

The Approving Authorities, based on the rankings and preliminary recommendation of the PCIEERD evaluation team, will make final funding decisions. In making the final funding decisions, the Approving Authorities may also consider programmatic priorities and geographic diversity of grants.

V. AWARD ADMINISTRATION

A. Award Notices

Following the evaluation of proposals, all applicants will be notified regarding their status.

Proposal Notifications.

a. PCIEERD will notify the *successful* applicant, via telephone, fax, electronic or postal mail before **31 December 2017**. The notification informs the Applicant that his/her Proposal has been successfully

evaluated and recommended for award.

b. This notification is **NOT** an authorization to begin implementation. The award notice signed by the PCIEERD Executive Director is the authorizing document and will be used for the execution of the project through a Memorandum of Agreement (MOA) among parties.

c. PCIEERD will also notify the *unsuccessful* applicant(s) via electronic or postal mail by **31 December 2017**.

B. Administrative and DOST GIA Policy Requirement

The Grants-In-Aid award shall be governed by the DOST GIA Guidelines.

C. Reporting Requirement

Quarterly progress reports and a detailed final report will be required. Quarterly progress reports summarize technical progress, planned activities for next quarter and summary of expenditures. The final report shall be completed within 90 calendar days after the completion of the period of performance. Required forms are downloadable from the PCIEERD website and may be provided by the PCIEERD upon the awarding of the agreement to eligible applicants.

VI. PCIEERD CONTACT

For further inquiries, the applicant may contact:
Philippine Council for Industry, Energy and Emerging Technology Research and Development (PCIEERD)

ATTN: ALBERT G. MARIÑO
4th Level Science Heritage Building
DOST Complex, Gen. Santos Ave.
Bicutan, Taguig City
agmarino@pcieerd.dost.gov.ph
+632 8372071 to 82 Local 2107

All questions or comments must be communicated in writing via postal mail, facsimile, or electronic mail to the above contact person.

Timetable

Activities	Dates
Announcement of Call for Proposal	February 15, 2017
Closing Date for Submission of Capsule Proposal	March 31, 2017
Closing Date for Submission of “Full–Blown Proposal”	June 1, 2017
Notification of Successful Applicants	Before Dec. 31, 2017