



2019-009

PCIEERD Administrative Order No. _____
Series of 2019

**SUBJECT: GUIDELINES ON THE DEVELOPMENT OF SECTORAL ROADMAPS
AND ITS ACTION PLANS**

Rationale

The Philippine Council for Industry, Energy, and Emerging Technology Research and Development (PCIEERD) is one of the three sectoral planning councils of the Department of Science and Technology (DOST). It is mandated to serve as the central agency in the formulation of policies, plans, and programs as well as in the implementation of strategies in the industry, energy, and emerging technology sectors through the following Science and Technology (S&T) programs: Support for Research and Development, Human Resource and Institution Development, S&T Information Dissemination and Promotion, Support for Technology Transfer and Commercialization and Policy Development and Advocacy.

The S&T program of PCIEERD are focused on four (4) major strategic thrusts, namely, appropriate technologies for industry competitiveness, sustainable energy, sustainable mass transport, environment, and climate change adaptation and disaster risk reduction. These are all geared towards the attainment of the 11 Point Agenda of the DOST. These are also aligned with the government's policy direction for: (1) promotion of S&T by optimizing research and development (R&D); (2) increase competitiveness through reduction of risks brought about by unpredictable, changing climate, natural disasters and environmental degradation; (3) promotion of rural and value chain analysis to hasten countryside development by maximizing the utilization of R&D results and S&T innovations; and (4) Investment in human capital development that will stimulate technology-based economic activities through the availability of highly trained S&T professionals, state-of-the-art facilities and world-class institutional infrastructure.

To attain the S&T thrusts and objectives and to make the research areas focused, short to medium-term strategies shall be developed through formulation of roadmaps for each of the PCIEERD priority sectors. The roadmaps shall serve as synchronized plans of the budget, time, and resources needed in the implementation of each of the sectors' S&T plan. These will also give a picture of the sectors' S&T directions for the next five (5) years. Given the Council's limited capacity required to develop roadmaps, experts shall be engaged to help the Council develop its sectoral roadmaps and corresponding program areas.

To formulate and provide a common framework for the development of a 5-year roadmap for each of the sectoral concern of PCIEERD consistent with the National Harmonized R&D Agenda (NHRDA).

2. Coverage

2.1 These guidelines shall cover R&D and non-R&D sectors of PCIEERD.

3. Definition of Terms

The terms herein used shall mean as follows:

- 3.1 Roadmap – It is a representation of the S&T directions of the sectoral priorities of the Council. It is a consensus view/vision of the sector's stakeholders on where the sector should go.
- 3.2 Stakeholder – It is an individual, group or organization that is impacted by the outcome of the roadmap. They have an interest in the success of the roadmap and they can be within or outside the organization (e.g. DOST).
- 3.3 Action Plan - A sequence of steps that must be taken, or activities/programs/projects that must be performed well, to realize the roadmap. An action plan has three major elements (1) Specific tasks: what will be done and by whom (e.g. programs/projects). (2) Time frame: when will it be done? ; and (3) Resource allocation: what specific funds are available for specific activities?

4. Guidelines

Funds will be allocated for each division for the conduct of the roadmapping and action planning activity. Funds shall be managed by the Policy Coordination and Monitoring Division (PCMD).

4.1 Preliminary Activity

- 4.1.1 The Division concerned shall hire experts or consultant/s to provide services in the crafting of the roadmap/s and action plan in accordance with the Terms of Reference provided for such purpose herein referred to as "Annex A" and approved line-item budget to include but not limited to the following activities:
 - 1) Conduct of environmental scanning, SWOT analysis, trend analysis and review of existing roadmaps of the sector, if any. Indicate metrics of success for completed projects of the existing roadmaps to support previous priority areas that will be further included in the subsequent 5-year roadmap (e.g. 2019-2023).

- 2) Recommendation of Priority S&T undertakings. Determine concrete translation of the undertakings to the economic and social development of the country.
- 3) Identification of relevant industry stakeholders and conduct stakeholders' meeting and/or focus group discussions to validate the draft roadmap.
- 4) Conduct of data analysis and provide recommendations.
- 5) Formulation of strategic initiatives/objectives and identify key result areas. Strategic initiatives shall consist of the following:
 - Vision, mission, objectives
 - Strategic priorities
 - Effective internal evaluation mechanism
- 6) Revision of the roadmap, according to the recommendations of the stakeholders.
- 7) Presentation of the roadmap (for approval) to the PCIEERD Management Team (PMT) and the Governing Council (GC).
- 8) Finalization of the roadmap based on the recommendations of the PMT and GC (if any).
- 9) Facilitation of the conduct of the Action Planning Activities based on the approved roadmap. The action plan/s shall consist of specific S&T program areas to focus, program briefs, stakeholders, timeline and estimated budget.

4.1.2 The expert shall report directly to the Division Chief of the concerned sector. The PCIEERD may provide relevant background documents necessary for the formulation of the roadmap including the plans and programs of the sector, previous roadmap if any, project profile, existing related reports, relevant policies and guidelines and other documents as maybe needed in the formulation of the roadmap of the said sector.

4.2 Formulation of the Roadmap

- 4.2.1 The division shall identify the sector that needs to be focus on. They shall likewise help the expert identify the key respondents and participants in the stakeholder's meetings/conferences. The roadmap shall take into account the initial state of the industry, targeted technological developments affecting the industry, and market strategy.
- 4.2.2 After the roadmap has been developed, the hired expert together with the concerned division shall facilitate the conduct of the Action Planning activity. This is to allow the sector to visualize the detailed implementation plans. The workshop shall be attended by the different concerned agencies and stakeholders identified in the road mapping activity.
- 4.2.3 A Memorandum of Understanding (MOU) among stakeholders shall be executed to firm up and express their commitment and to ensure that the

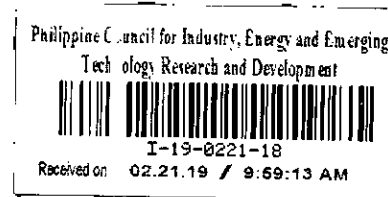
identified agencies and other stakeholders are made fully aware of their role in the implementation of the roadmap.

5. Follow up Activity

Road mapping is a continuing activity to identify the key S&T initiatives that will support the needs of the organization. To cope with the rapid developments in S&T and/or technologies, the roadmap shall be reviewed and validated annually and an assessment shall be done 2 or 3 years thereafter.

The Administrative Order supersedes existing related orders and shall take effect immediately and remain in force unless revoked in writing. Done this 20 FEB 2019 2019.


DR. ENRICO C. PARINGIT
Executive Director



References

Phaal et al., (2016), Towards robust technology roadmapping: How to diagnose the vulnerability of organizational plans; Technological Forecasting & Social Change 111 (2016) 164–175.

The Product Management Guide downloaded May 8, 2018 at
[https://www.aha.io/roadmapping/guide/product-roadmap/what-is-a-technology-\(it\)-roadmap](https://www.aha.io/roadmapping/guide/product-roadmap/what-is-a-technology-(it)-roadmap)

<http://www.businessdictionary.com/definition/action-plan.html>

TERMS OF REFERENCE

For the expert/consultancy firm or organization to develop a sectoral Roadmap for the Industry, Energy and Emerging Technology sectors.

I. BACKGROUND

The Philippine Council for Industry, Energy, and Emerging Technology Research and Development (PCIEERD) is one of the three (3) sectoral planning councils of the Department of Science and Technology (DOST). It is mandated to serve as the central agency in the formulation of policies, plans, and programs as well as in the implementation of strategies in the industry, energy, and emerging technology sectors through the following Science and Technology (S&T) programs: Support for Research and Development, Human Resource and Institution Development, S&T Information Dissemination and Promotion, Support for Technology Transfer and Commercialization, and Policy Development and Advocacy.

The S&T program of PCIEERD are focused on four (4) major strategic thrusts, namely, appropriate technologies for industry competitiveness, sustainable energy, sustainable mass transport, and environment, and climate change adaptation and disaster risk reduction. These are all geared towards the attainment of the 11 Point Agenda of the DOST. These are also aligned with the government's policy direction for: (1) promotion of S&T by optimizing research and development (R&D); (2) Increase competitiveness through reduction of risks brought about by unpredictable, changing climate, natural disasters and environmental degradation ; (3) Promotion of rural and value chain analysis to hasten countryside development by maximizing the utilization of R&D results and S&T innovations; and (4) Investment in human capital development that will stimulate technology-based economic activities through the availability of highly trained S&T professionals, state-of-the-art facilities and world-class institutional infrastructure.

To attain the S&T thrusts and objectives and to make the research areas focused, to define term strategies that shall be developed through formulation of roadmaps for each of the PCIEERD priority sectors. The roadmaps shall be synchronized plans of the budget, time, and materials needed in the implementation of each of the sectors' S&T plan. These will also give a picture of the sectors' S&T directions for the next five (5) years.

II. OBJECTIVES

The overall objective of the project is to develop a 5-year roadmap for each of the sectors of PCIEERD.

III. SCOPE OF WORK

The scope of work for the expert will include but not limited to the following:

- 1) Conduct of environmental scanning, SWOT analysis, trend analysis and review of existing roadmaps of the sector, if any. Indicate metrics of success for completed projects of the existing roadmaps to support previous priority areas that will be further included in the subsequent 5-year roadmap.
- 2) Recommendation of Priority S&T undertakings. Determine concrete translation of the undertakings to the economic and social development of the country.

- 3) Identify relevant industry stakeholders and conduct stakeholders' meeting and/or focus group discussions to validate the draft roadmap.
- 4) Conduct of data analysis and provide recommendations.
- 5) Formulation of strategic initiatives/objectives and identify key result areas. Strategic initiatives shall consist of the following:
 - Vision, mission, objectives
 - Strategic priorities
 - Effective internal evaluation mechanism
- 6) Revision of the roadmap, according to the recommendations of the stakeholders.
- 7) Presentation of the roadmap (for approval) to the PCIEERD Management Team (PMT) and the Governing Council (GC).
- 8) Finalization of the roadmap based on the recommendations of the PMT and GC (if any).
- 9) Facilitation of the conduct of the Action Planning Activities based on the approved roadmap. The action plan/s shall consist of specific S&T program areas to focus, program briefs, stakeholders, timeline and estimated budget.

IV. DELIVERABLES

- 1) Detailed workplan
- 2) Desk review/ Review of existing roadmaps (areas of concern, issues, trends, product opportunities, institutional capacity and organizational set-up)
- 3) First Draft of the roadmap from the Stakeholder Consultation Workshop(s)
 - Context Setting/ Situationer
 - Strategic Objectives, Priorities
 - Roadmap mission and vision
 - Data Analysis and Recommendations (SWOT analysis, trend analysis and environmental scanning)
 - Focal areas / General Direction / Targets and alignment to the Philippine Development Plan
 - Conceptual diagram of focal area linkages
 - Results framework
 - Business Case
 - Five (5)- year technology Roadmap and Action Plan following the attached outline (Annex B)

Additional Requirements

 - Director of Participants
 - Photo Documentation
- 4) Roadmap presentations to PMT and GC
- 5) Revised Draft Roadmap, if applicable (taking into consideration the PMT/GC comments and instructions.)
- 6) GC-approved 5-year roadmap and action plan
- 7) Action plan (approved by stakeholders)
 - Memorandum of Understanding among Stakeholders

V. DURATION

The road mapping activity is expected to be carried out for a period of 6 months.

VI. INSTITUTIONAL/AGENCY ARRANGEMENTS

The expert shall report directly to the Division Chief of the concerned sector. The concerned sector may provide relevant background documents necessary for the formulation of the roadmap including the plans and program of the sector, previous roadmap if any, profiles of projects under the sector, related reports, policies and guidelines affecting the concerned sector and other documents as maybe needed in the formulation of the roadmap.

VII. EXPERTISE/QUALIFICATION REQUIREMENTS

To ensure that the objectives are achieved, this contract must be conducted by a team of experts who are qualified and possesses the objectivity/impartiality and capacity to carry out the assigned tasks which will be evaluated by PCIEERD using the criteria indicated in Table 1.

Table 1. Selection Criteria

I. Track Record of the Applicant
a. Applicable experience in roadmapping strategic plan and action plan activities
b. Previous engagement in similar and/or relevant projects
c. Ability to submit work in a timely manner
d. Financial status/ statements
II. Staff Expertise/Qualifications/Team Composition (25%)
a. Experience (previous engagements in similar and/or relevant contracts
b. Education
c. Training
III. Job Capacity/ Absorptive Capacity (25%)

- a) Academic qualifications - At least a master's degree in a relevant field in the area of planning, development studies and technology and innovation.
- b) Experience
 - At least five (5) years professional experience in strategic planning and management or related field; possesses a deep understanding of the Philippine economy and knowledge of industry/technology development in the country
 - Demonstrated experience in working with government partners and other stakeholders in public sector development programs especially in the area of policy and institutional development
 - Should have prior experience in road mapping formulation/activity
 - List of related road mapping projects conducted and its accomplishments/status

VIII. APPLICATION PROCESS

Interested and qualified candidates should submit their applications which should include the following:

1. Detailed Curriculum Vitae highlighting professional experience in strategic planning, management and road mapping.
2. Proposal for implementing the assignment based on the scope of work described above

IX. SCHEDULE OF PAYMENT

Schedule of payment shall be in accordance with the following delivery schedule and subject to Government accounting and auditing requirements:

Activity	Q1	Q2	Payment Terms
Upon signing/approval of the Job Contract			25%
Work plan			25%
Review of Documents (roadmaps			
Data gathering			
Interviews/Meetings, FGD(s)/Fora/Workshop(s)			
First Draft			25%
Presentation of Roadmap to PMT and GC			
Revised Draft			
GC-Approved Roadmap			25%
Action Plan			

X. RESPONSIBILITY OF THE CLIENT

- Jointly design discussion process providing relevant information on group dynamics and organizational updates during preparatory meetings
- Provide pertinent advice, information, and reference documents necessary to guide discussion processes
- Assist in the identification of knowledgeable resource persons to ensure substantial inputs during specific sessions and during perception-validation and question and answer portion
- Assist in the identification of key respondents and participants

OTHER CLAUSES

- If one of the contracting parties withdraw from the Contract or cannot make the agreed contributions, it must reimburse the other party for incurred costs once proven.
- All documents elaborated in connection with the implementation of the task are or will become the property of PCIEERD, provided that due acknowledgement is given to those involving creative source or authorship.
- Additional agreements shall be made in writing and shall be jointly agreed upon by both parties.

References:

DOST 11 Point Agenda
Harmonized National R&D Agenda (HNRDA)
UNDP Transition Plan Authority (2013)
Industry Roadmap Textile and Garments Industry (BOI)

OUTLINE OF ROADMAP AND ACTION PLAN

- I. Executive Summary
- II. Rationale of the roadmap and action planning
 - A. Brief Historical overview of the Technology in the Philippines
 - B. Philippine development context: challenges and needs
- III. Objectives
- IV. Scope and Limitations
- V. Methodology
 - A. Desk review/ Review of existing roadmaps (areas of concern, issues and trends, product opportunities, institutional capacity and organizational set-up)
 - B. Roadmap and Action Planning Workshop(s)
 - Context setting/ Situationer
 - Strategic Initiatives and Objectives
 - Data Analysis and Recommendations (SWOT analysis, trend analysis and environmental scanning)
 - Focal areas/ General Direction / Targets and alignment to the Philippine Development Plan
 - Conceptual diagram of focal area linkages
 - C. E-survey / Structured questionnaire / Key Informant Interviews, as needed
 - D. Agency profiling
 - E. Results framework
- VI. Comparative status of the technology in the Philippines with other countries
 - A. Policies
 - B. Science and Innovation
 - C. Research and Development
 - D. Capacity building
 - E. Infrastructure / Systems and facilities
 - F. Cross-cutting programs, if any
- VII. Business Case
- VIII. Road map
- IX. Action Plan
- X. Directory of Key Respondents
- XI. Acronyms Used
- XII. Definition of Terms
- XIII. References
- XIV. Appendices