

Preparation Date: 2020-01-22
Doc. Code: 1120-R-01/00

Process Identification



1- Process Introduction

Process Name	Main Process name (Level 0)	Process Type		Process Code	Process Owner	Participating Organizational Units
		Main	Management and Support			
Management of New Ideas in Product Development	Technology development and management			R-TM-02/00	Research & Technology Management	Research; Integrated Planning; Production Coordination and Supervision; and Other Headquarters Departments of NIORDC.
Process Objective	Process Scope		Process Supervisor		Process Customers	
Identify needs and implement research programs aimed at creating value and fostering innovation in the organization's products and processes.	The scope of this process encompasses all technology research activities related to product and process development		Managing Director		All Subsidiaries; Technology Capability Development, Organizational Knowledge Development and Management Processes; and Other Research Requesting Processes.	
Process Alignment with Organizational Objectives and Strategies						
Enhance Research and Development, Enhance Knowledge Management						
Resources, References, and Process Implementation Requirements						
Integrated Research, Technology and Innovation Governance Framework of the Ministry of Petroleum						
Process Flow						
Automated ☐ Semi-Automated ☒ Manual ☐ <i>Related software System: Research Database – Office Automation System (Pargar)</i>						
Process Execution Model						
Continuous (Ongoing) ☐ Periodic ☒ <i>Frequency: Annually</i>						
Prepared by: Research and Technology Manager		Reviewed by: Structural Engineering Manager		Approved by: Managing Director		

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2- Process Execution Characteristics

Process Input (Process Supplier)	Input Title	Process Activities		Output title	Process Output (Process Customer)
		Titles of the Main Process Steps (Process Activities)	Related Operational Documents		
Subsidiary Companies All Managements and Headquarters Departments	Research Needs (Periodic & as needed)	Research Management: Identification of Product and Technology Development Research Needs and Research Program Formulation (Collection and Prioritization of Research Needs, Alignment of Research Needs with Technology and Product Development Programs, and Preparation of Research Programs). Determination of Research Program Implementation Methods through Academic and/or Research Projects. Management of Approval and Monitoring of the Proper Execution of Academic Projects. Determination of Research Project Implementation Methods (at Headquarters and/or Subsidiary Companies). Conducting Fundamental, Applied, and Developmental Research (Call for Proposals,	Approved Research Project Monitoring Procedure Research	Final Research Project Reports	Organizational Knowledge Development and Management / Ministry of Petroleum / Subsidiary Companies
Product Development Program Planning and Management Process	Product and Technology Development Programs		Remuneration Payment Procedure (Implemented by Human Resources)	Commercialization and Development Program Implementation Reports	Industry Technological Capability Development Process/ Product Development Program Planning and Management Process
Deputy Ministry of Engineering, Research and Technology of the Ministry of Petroleum	Research Needs		Procedure for Establishing Specialized Research and Technology Committees	Research Project Statistical Reports	All Research Project Requesting Units

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Proposal Evaluation and Approval Process, and Research Contracting).
Effective Research Project Progress Management (Contract Execution Monitoring, Final Project Report Validation, and Research Project Settlement Procedures).
Coordination of Research Activities Conducted by Subsidiary Companies and Headquarters Departments (Approval of Research Programs of Subsidiary Companies, Collection of Research Reports from Subsidiaries, Dissemination of Research Findings to Subsidiary Companies, etc.).

Technology Commercialization

- Transfer of Technical Know-How to Subsidiary Companies
- Selection of Commercialization Partners
- Knowledge Transfer to Development Companies
- Joint Collaboration with Technology Developers

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- Monitoring Commercialization Program Implementation
- Evaluation of Commercialization Effectiveness and Generated Revenue

Creativity and Innovation Management

- Identification and Prioritization of Problems
- Identification of Creative Individuals
- Establishment of Think Tank Sessions
- Development of Creative Problem-Solving Approaches
- Selection and Implementation of Innovative Solutions
- Assessment of Innovation Effectiveness

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Research
management

3. RACI Matrix

Main footsteps	Participating Organizational Units →	Research and Technology Department and Internal Committees	Supreme Research Council	Directing Manager	Headquarters Departments and Units	Ministry of Petroleum	Universities and Knowledge-Based Companies
	Identification of Product and Technology Development Research Needs and Formulation of Research	R		C	C	I	I
	Definition of Research Program Execution Methods through Academic and Research Projects	RA		CI	CI		
	Management of Research Project Approval Processes	R	A	CI	CI		
	Definition of Research Project Execution Methods (at Headquarters and/or Subsidiary Companies)	RA		I	I		
	Conducting Fundamental, Applied, and Developmental Research	RA		CI	CI		C
	Effective Research Project Progress Management	RA				I	C
	Coordination of Research Activities Conducted by Subsidiary Companies and Headquarters Departments	C		RA			

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Commercialization

3. RACI Matrix

Main footsteps	Participating Organizational Units →	Research and Technology	Subsidiary Companies	Technology Development Companies
	Transfer of Technical Knowledge to Subsidiary Companies	RA	CI	
	Selection of Commercialization Partners	RA	CI	I
	Knowledge Transfer to Technology Developers	RA	CI	C
	Joint Collaboration with Technology Developers	RA	CI	C
	Monitoring the Implementation of Commercialization Programs	RA	CI	I
	Coordination of Research Activities Conducted by Subsidiary Companies and Headquarters Departments	RA	CI	I

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Creativity and
Innovation
Management

3. RACI Matrix

Main footsteps	Participating Organizational Units →	Research and Technology	Headquarters Departments and Units	Subsidiary Companies
	Problem Identification	RA	CI	CI
	Problem Prioritization	RA	CI	CI
	Identification of Creative Individuals	RA	CI	CI
	Establishment of Think Tank Sessions	RA	CI	CI
	Development of Creative Problem-Solving Solutions	RA	CI	CI
	Selection of Creative Solutions	RA	CI	CI
	Implementation and Effectiveness Assessment of Ideas (Innovation)	RA	CI	CI

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4. Process Monitoring and Measurement Characteristics

Process Indicator Title	Indicator Calculation Method	Indicator Type		Indicator Type		Indicator Measurement Data sources	Measurement Responsible Person	Monitoring Frequency
		process	Strategic	Effectiveness	Efficiency			
Ratio of Resolved Problems to Identified Problems	$\frac{\text{Number of Resolved Problems}}{\text{Total Number of Identified Problems}}$		*	*		Research Execution Records	Research and Technology Management	Semi-Annual
Number of Identified Improvement Opportunities	Total Number of Improvement Opportunities		*	*		Research Execution Records	Research and Technology Management	Semi-Annual
Ratio of Improvement Opportunities Resulting in Contract Awards	$\frac{\text{Number of Improvement Opportunities Resulting in Contract Awards}}{\text{Total Number of Improvement Opportunities}}$		*	*		Research Execution Records	Research and Technology Management	Semi-Annual
Ratio of Applied Research Projects to Total Contracted Research Projects	$\frac{\text{Number of Applied Research Projects}}{\text{Total Number of Contracted Projects}}$		*	*		Research Execution Records	Research and Technology Management	Semi-Annual
Percentage of Commercialized Research Projects	$\frac{\text{Number of Commercialized Research Projects}}{\text{Total Number of research Projects}}$		*	*		Research Execution Records	Research and Technology Management	Semi-Annual
Percentage of Product/Technology Roadmap Progress	$\frac{\text{number of implemented roadmap projects}}{\text{total number of Tech roadmap projects}}$		*	*		Research Execution Records	Research and Technology Management	Semi-Annual
Average Research Project Contract Award Time (from Approval to Contract Issuance)	$\frac{\text{number of achieved objectives}}{\text{total number of defined objectives}}$	*			*		Research and Technology Management	Semi-Annual

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5. The process execution steps are illustrated in the attached BPMN process model.

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