



समझौता ज्ञापन

MEMORANDUM OF UNDERSTANDING

between

हाइड्रोकार्बन महानिदेशालय / Directorate General of Hydrocarbons
पेट्रोलियम और प्राकृतिक गैस मंत्रालय / Ministry of Petroleum and Natural Gas
भारत सरकार / Government of India

And

राजीव गांधी पेट्रोलियम प्रौद्योगिकी संस्थान / Rajiv Gandhi Institute of Petroleum
Technology,
जायस , उत्तर प्रदेश / Jais, Uttar Pradesh

on

व्यापक अपस्ट्रीम पेट्रोलियम अनुसंधान एवं विकास के लिए रणनीतिक सहयोग
Strategic Collaboration for Comprehensive Upstream Petroleum Research & Development

नोएडा, उत्तर प्रदेश, भारत / NOIDA, Uttar Pradesh, INDIA



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**MEMORANDUM OF UNDERSTANDING BETWEEN DIRECTORATE GENERAL
OF HYDROCARBONS AND RAJIV GANDHI INSTITUTE OF PETROLEUM
TECHNOLOGY**

This Memorandum of Understanding (hereinafter referred to as "MoU") is signed on 25th day of June 2026 between **Directorate General of Hydrocarbons**, Ministry of Petroleum and Natural Gas, Government of India (GoI), (herein-after referred to as "DGH"), which expression shall include, unless repugnant to the context or contrary to the meaning thereof, its successors or permitted assignees on the first part AND between **Rajiv Gandhi Institute of Petroleum Technology**, Jais, Uttar Pradesh, with two campuses, one at Bengaluru and another at Sivasagar, Assam (herein-after referred to as "RGIPT"), which expression unless otherwise proved shall include its successors, representatives and assignees on the other part. DGH and RGIPT may at times be referred to individually as "Party" and collectively as the "Parties".

Preamble

AND WHEREAS DGH is the technical arm of Ministry of Petroleum and Natural Gas (MoPNG) for discharging the regulatory functions of leasing and licensing of areas for Exploration and Production (E&P) activities including sound management of hydrocarbon resources with a balanced regard to environment, safety, technological and economic aspects of petroleum operations. It formulates policies and strategic plans on behalf of MoPNG for a conducive and competitive business framework for stakeholders while developing India's upstream hydrocarbon industry in an inclusive manner. DGH was set up under the administrative control of MoPNG through a GoI resolution dated 8th April 1993. DGH has National Data Repository (NDR), which is an E&P data bank for preservation, upkeep and dissemination of geoscientific and engineering data generated from petroleum operations.

WHEREAS RGIPT an Institution of National Importance of higher education, incorporated through an Act of Parliament ("Rajiv Gandhi Institute of Petroleum Technology Act 2007") and having its registered office at Mubarakpur, Mukhetia More, Bahadurpur, Post.-Harbanshganj, Jais, Amethi, Uttar Pradesh 229304 with two campuses one at Bengaluru and another at Sivasagar, Assam, is providing world class education, training, and research to roll out efficient human resources to meet the growing requirements of the Petroleum & Energy sector; and is a specialized upstream engineering institution with unique competencies spanning geoscience, drilling, production, reservoir engineering, flow assurance, and emerging energy technologies.

AND WHEREAS DGH and **RGIPT** have agreed upon to co-operate in a broad spectrum of upstream petroleum research, technical studies, human resource development, technology transfer, and knowledge dissemination activities aligned with India's energy security and sustainability objectives.

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NOW THEREFORE the Parties desire to enter into a Memorandum of Understanding (MoU) to set forth the terms and modalities of the scope of the Parties, studies to be undertaken, role of the Parties, timeframe of the studies and other conditions of the collaborative study.

THEREFORE, THIS MEMORANDUM OF UNDERSTANDING (“MOU”) SETS OUT THE UNDERSTANDINGS OF THE PARTIES AS FOLLOWS:

Article-1

NATURE OF THE MEMORANDUM OF UNDERSTANDING:

1.1 Strategic Collaboration for Comprehensive Upstream Petroleum Research & Development between DGH and RGIPT.

Article-2

SCOPE OF COOPERATION

2.1. The Parties agree to collaborate in the following thematic areas: upstream petroleum research, engineering, technology, and capacity building. Individual projects under each thematic area shall be governed by specific Project Terms of Reference (TOR) agreed upon by both Parties DGH and RGIPT have jointly identified the scope for cooperation as, described below:

Sl. No.	Thematic Area	Scope of Work
2.1.1	Seismic API & Geomechanics	Advanced seismic acquisition, processing, and interpretation, 4D/Time-lapse seismic applications, Geomechanical modeling for wellbore stability, stress prediction, sand production assessment, induced seismicity monitoring in Indian basins
2.1.2	Exploration & Geosciences	Integrated basin analysis, petroleum systems studies, source rock characterization, petrophysical analysis using well log and core data, prospect evaluation, resource estimation per SPE/PRMS guidelines, play-based exploration strategies
2.1.3	Coal & Unconventional Resources	CBM reservoir modeling and simulation, gas prospectivity assessment, geo-mechanical property characterization, GIIP quantification, shale oil/gas feasibility studies, tight oil/gas characterisation, gas hydrate exploration potential assessment
2.1.4	Drilling & Wellbore Engineering	Drilling fluid system optimization, wellbore stability prediction, well design optimization, lost circulation management, well integrity monitoring, stuck pipe mitigation, drilling optimization for enhanced ROP, NPT reduction
2.1.5	Drilling Fluids & Chemical Additives	Multifunctional drilling fluid additive design, nano-materials for ITHP applications, polymer-based fluid enhancers, surfactant formulations, rheology management, filtration control, environmental sustainability of fluid systems



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Sl. No.	Thematic Area	Scope of Work
2.1.6	Wellbore Cementing & Materials	Advanced cementing system development, nano-composite cement formulations, thermally stable cement systems, low-density cement systems, long-term durability studies, cement additives for zonal isolation, SCP mitigation
2.1.7	Reservoir Engineering & Characterization	Pressure transient analysis (PTA), well testing methodology development, skin effect evaluation, wellbore storage effects, flow regime identification, production data analysis, reservoir property estimation, recovery factor assessment
2.1.8	Production Operations & Well Management	Well performance monitoring, decline curve analysis, production forecasting using statistical and ML methods, artificial lift optimization, multiphase flow measurement, well intervention planning, workovers and remedial operations
2.1.9	Enhanced Oil Recovery (EOR)	Polymer flooding feasibility, surfactant flooding design, ASP flooding, carbonated water flooding (CWF), CO ₂ miscible and immiscible flooding, phase behaviour and thermodynamic studies, IFT reduction optimization, field pilot design and economics
2.1.10	Gas Hydrates	Thermodynamic stability and formation prediction, kinetic studies, hydrate plug formation and prevention (flow assurance), decomposition strategies, gas hydrate drilling hazards assessment, deepwater production challenges
2.1.11	Flow Assurance & Production Chemistry	Drag reducing agent (DRA) development, pour point depressant (PPD) formulations, paraffin and scale inhibitor development, corrosion inhibitor formulations, asphaltene inhibitor development, multiphase pipeline flow management
2.1.12	Carbon Capture, Utilization & Storage (CCUS)	CO ₂ capture feasibility and economics, geological storage potential assessment, CO ₂ -EOR implementation, WAG process optimization, geo-sequestration and permanence verification, CO ₂ storage in abandoned coal mines
2.1.13	Data Science & Digital Solutions	Data analytics and interpretation, ML algorithms for upstream applications, AI applications, integrated asset management, real-time reservoir monitoring, predictive maintenance, subsurface uncertainty quantification
2.1.14	Environmental, Safety & Sustainability	Environmental Impact Assessment (EIA) for upstream operations, sustainability metrics development (ESG compliance), waste management, produced water treatment, zero-flaring initiatives, spill prevention and remediation, biodiversity conservation
2.1.15	Technology Transfer & Capacity Building	Joint research program design, collaborative studies, peer-reviewed publications, industry seminars and workshops, formal training programs, short-term certification courses, faculty development programs, student internships

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Sl. No.	Thematic Area	Scope of Work
2.1.16	Entrepreneurship & Innovation	Startup identification and incubation, technology commercialization pathways, IP development and protection, licensing and royalty frameworks, industry partnerships for scaling, venture capital and funding linkages
2.1.17	Core Analysis & Petrophysics	Routine and special core analysis (SCAL): wettability, relative permeability, capillary pressure; advanced characterization via pore network modeling, X-ray CT scanning, 3D pore structure, rock-fluid interaction studies
2.1.18	Well Testing & Pressure Transient Analysis	Drawdown, buildup, injection/falloff, and DST tests; PTA interpretation, curve matching and type curve analysis, boundary effects characterization, hydraulic properties determination, well testing in unconventional formations
2.1.19	Reservoir Modelling and Simulation	Static to dynamic model integration, black oil and compositional simulation, assisted and automated history matching, forecasting and development planning, EOR simulation

2.2. DGH and RGIPT agree to revise, if deemed necessary, the list of Scope of Cooperation mentioned under Article 2.1.

Article - 3 ROLE AND FUNCTIONS OF DGH AND RGIPT

3.1 Role and Functions of DGH:

- a) To provide field data, reports, interpretations, investigations pertaining to geoscientific surveys and field operations through the National Data Repository (NDR) and other available channels.
- b) To provide primary datasets relevant to target basins and thematic areas; and to provide basic support of interpretation software if required during the course of specific studies.
- c) To showcase NDR data to RGIPT researchers, faculty and experts who will be nominated for proposed studies under this MoU.
- d) To share an updated knowledge of industries' best practices including Petroleum Resources Management System (PRMS) through faculty-level engagement.
- e) To issue project-specific Work Orders specifying requirements, timelines, and budget as per the funding model agreed by both Parties.
- f) To facilitate access to DGH facilities, including NDR data rooms, for RGIPT researchers where applicable.



3.2 Role and Functions of RGIPT:

- a) To conduct comprehensive technical studies and applied research across the thematic areas specified in Section 2.
- b) To deploy qualified researchers, faculty, and technical professionals for the studies and projects undertaken under this MoU.
- c) To develop and maintain laboratory facilities, experimental setups, and computational resources necessary for project execution.
- d) To create project-specific deliverables including technical reports, datasets, Basin Dockets, research papers, and training modules.
- e) To disseminate research outcomes through peer-reviewed publications, industry conferences, and workshops in association with DGH.
- f) To identify possible locales for stratigraphic wells in unexplored or inadequately explored areas, as and when required.
- g) To file patents and intellectual property for unique procedures, formulations, or interpretations created during the course of the studies jointly with DGH.
- h) To undertake any other research/studies, as relevant to the subject and requested by DGH

Article - 4 FINANCIAL ARRANGEMENTS

- 4.1 Financial arrangement is to be done based on offer submitted by RGIPT and subsequent work orders issued by DGH on mutually agreed terms and conditions.

Article – 5 DURATION AND COMMENCEMENT OF MOU

5. This MoU shall be effective from the date of signing. The duration of the MoU shall be for initially a period of 5 years from the effective date. However, the MoU extendable for further periods on mutual consent. Specific timelines and milestones will be mentioned in the detailed project proposal.

Article – 6 FORCE MAJEURE

6. Neither party shall be held responsible for non-fulfilment of their respective obligations under this MoU due to the exigency of one or more of the force majeure events such as but not limited to Act of God, War, Flood, Earthquakes, Strikes, Lockouts, Epidemics, Riots, Civil Commotion, etc., provided on the occurrence and cessation of any such events, the party affected thereby shall give a notice in writing to the other party within one month of such occurrence or cessation. If the force majeure conditions continue beyond six months, the parties shall jointly decide about future course of action.



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Article – 7
AMENDMENT TO THE MoU

7. No amendment or modification of this MoU shall be valid unless the same is made in writing by both the parties or their authorized representatives and specially stating the same to be an amendment to this MoU. The amendment shall be effective from the date on which they are made/executed, unless otherwise agreed to.

Article – 8
RESOLUTION OF DIFFERENCES

8. In the event of any differences between the parties, hereto, such difference shall be resolved amicably by mutual conversation. If such resolution is not possible then, the unresolved dispute of difference shall be referred to the Ministry of Petroleum and Natural Gas and the competent authority of RGIPT for amicable resolution. This MoU shall be governed by Indian Law.

Article-9
EXCHANGE OF INFORMATION

- 9.1 Subject to the restrictions set out in this Section, DGH and RGIPT shall keep each other informed of progress of the study to ensure that the activities of DGH and RGIPT are coordinated in the charted timeline. DGH and RGIPT recognize and acknowledge that by the nature of their respective operations, they will be involved not only with each other, but also with various third parties, either directly or indirectly, in various areas, and that as a result of such involvement, confidential information may be either generated or obtained from such third parties. Nothing in this MOU shall be construed as requiring DGH or RGIPT to disclose to one another any confidential information so generated or obtained. DGH and RGIPT shall each have the right to place any restrictions, limitations, and conditions they deem appropriate upon the communications and cooperation that are contemplated by this RGIPT with mutual agreement.

9.2 TECHNOLOGY TRANSFER

DGH and RGIPT may transfer their available know-how, technology, workflows, and practices to each other by provision of:

- a) Formal training programs including work association,





- b) Association of DGH / RGIPT executives during critical phase of any study.
- c) By way of written communications.

Address for Communication:

The address of each party hereto shall be as follows:

Director General of Hydrocarbons (DGH)	Dean (R&D)
OIDB Bhawan, Plot No. 2, Sector 73, Noida, Uttar Pradesh - 201301, India	Rajiv Gandhi Institute of Petroleum Technology, Mubarakpur, Mukhetia More, Bahadurpur, Post-Harbanshganj, Jais, Amethi - 229304, Uttar Pradesh, India
Telephone: +91-120-247 2004	E-mail: dord@rgipt.ac.in
Fax: +91-120-247 2049	
Email: dg@dghindia.gov.in	

Article-10

CONFIDENTIALITY AND INTELLECTUAL PROPERTY RIGHTS:

- 10.1 Any patents / IP arising out of this MoU shall be the joint property of DGH and RGIPT. The expenditure for taking and maintaining these patents shall be shared equally. If any patent be leased for commercial exploitation, the income from such exploitation shall be shared on a mutually agreed term.
- 10.2 In this Article-10, the term "Proprietary Information" means all (or part of all) technical and/or commercial information (whether in visual or machine readable form including all data, formula, plans, ideas) disclosed by one party to the other and identified by a suitable legend or marking as being "Confidential" or "Proprietary" as well as Proprietary Information disclosed orally from one party to the other which was described as being proprietary or confidential at the time of disclosure and thereafter is reduced to writing, appropriately identified and a copy thereof sent to the receiving party within 15 working days of the original oral disclosure PROVIDED HOWEVER, the Proprietary Information shall not include any information which the receiving party can show:
- a. is in or comes into the public domain otherwise than through a breach of this Agreement or the fault of the receiving party; or
 - b. has been lawfully received from a fourth party without restriction as to its use or disclosure; or
 - c. was independently developed by the receiving party without making use of the



Proprietary Information: or

- d. has been approved for release or use (in either case without restriction) by written authorization of the disclosing party.

10.3 The receiving party of an item of Proprietary Information undertakes:

- a. to keep such Proprietary Information confidential and not to use such Proprietary Information otherwise than for purposes of the Project unless such use is specifically authorized in writing by the disclosing Party.
- b. not to disclose (directly or indirectly) any part or the whole of such proprietary Information to any persons employed in its business other than those having a need-to-know for the purposes of the Project, and then only on the undertaking that such persons are made aware of and undertake to observe the provisions of this Agreement.
- c. Take all reasonable precautions to ensure that all confidential information and samples remain confidential.
- d. not to disclose Proprietary Information to any other person except for the purposes of the Project and with the prior written consent of the disclosing party (which consent shall not be unreasonably withheld) and then only on the undertaking that such other person is made aware of and undertakes to observe the provisions of this Agreement:
- e. not to copy or reduce Proprietary Information to writing except as may be strictly necessary for the purposes of the Project; and
- f. to return to the disclosing party on demand all copies of Proprietary Information reduced to writing (or other permanent form) and to destroy all notes and any other written reports or documents which may have been made by the receiving party to the extent they contain any part of or reference to the Proprietary Information in whole or part except as authorized in writing by the disclosing party or as is strictly necessary to complete any outstanding obligations relating to the Project where after such Proprietary Information shall be returned or destroyed as aforesaid.

10.4 This Article 10 shall not be construed as granting expressly or implied any rights under patents, copyright or other form of intellectual property rights belonging to the disclosing party in respect of Proprietary Information the ownership of which shall always remain vested in the disclosing party.



Article-11

Effect of Termination

11. The MOU may be terminated by either party with prior written notice of (90) ninety days to the other party or suo moto on the date of expiry of the MOU. If the MOU ceases to have effect on account of termination thereof, its provisions, and in particular Article 5, will continue to apply for the period and to the extent necessary and shall not affect the arrangements made under this MOU. Any contracts signed between the parties for projects will remain in force until completed or terminated under the specific terms of that contract.

Article-12

Disclaimer

12. Neither Party shall make or permit or procure to be made or solicit or assist any other person to make any announcement or disclosure of the contents of this MOU and/or any actions taken pursuant to this MOU except to the extent permitted by this MOU.

IN WITNESS WHEREOF this MoU is signed on the date first written above, in two originals, both in English language, one of each has been retained by DGH and RGIPT.

For RGIPT	For DGH
<p>By: <u>Dr. Milan Kumar</u></p> <p>Dean, R&D, RGIPT</p> <p>Date: <u>25/06/26</u></p>	<p>By: <u>Jadhav</u></p> <p>Additional Director General (Development), DGH</p> <p>Date: <u>25/06/26</u></p>

डॉ० मिलन कुमार
Dr. Milan Kumar
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Dean, Research & Development
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