



Centre for High Technology

COMPRESSIVE MANUAL

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Compressive Manual on Procedure & Functioning of CHT

Centre for High Technology
(Ministry of Petroleum & Natural Gas)

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PREFACE

This manual is prepared with an aim to have unified, compressive guidebook covering all activities at CHT. The manual essentially contains a brief background of the office, organizational structure, and its activities along with acts / rules / regulations of the Society and is prepared in house, in compliance to the guidelines of MoP&NG.

The manual is formulated based on the current practices at CHT and are in line with the prevailing guidelines / rules in GFR-2017 for procurement of goods and services. The aim is to bring in transparency and eliminate arbitrariness in the procurement process being followed at CHT.

I am confident that this manual shall act as a valuable guide and effective ready reckoner for providing details on the various functions of CHT.






(Alok Sharma)
Executive Director

Date: 20.05.2022

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Amendment History

Rev.	Nature of changes	Approval by	Date
00	Whole procedure reviewed & issue no 01 to 02 updated (incl. Organogram, Awards Selection procedure, Standard MOU Format for R&D Project, EOI Guidelines, Amendment dated. 02.04.2019 of GFR 2017, SAC Terms of Reference, etc.	 ED, CHT	10.04.2019
01	Organogram	 ED, CHT	01.04.2021
02	Organogram	 ED, CHT	20.05.2022

Chapter 1 : INTRODUCTION

1.0 FORMATION

Centre for High Technology (CHT) was established as a dedicated technology cell of Ministry of Petroleum & Natural Gas (MoP&NG), Government of India in 1987 to assess futuristic requirements, acquire, develop and adopt technologies in the fields of refinery processes, petroleum products, work related to modernization of technologies, etc. CHT was registered as a Society, under Societies Registration Act XXI of 1860, in 1992.

2.0 FUNCTIONING

CHT functions under the overall guidance and supervision of the Governing Council. The Governing Council is headed by the Secretary, Government of India, MoP&NG as the Chairman. The members include Addl. Secretary, AS&FA, JS(R), JS(M), JS(E), Secretary OADB, Chief Executives of IOCL, HPCL, BPCL, CPCL, MRPL, NRL, EIL, GAIL, IIP with Executive Secretary (ED), CHT as the Member Secretary.

There is also an Executive Committee to carry out the directions of the Governing Council and for implementing plans and programmes of CHT. The Executive Committee is headed by Joint Secretary (Refinery), MoP&NG and consists of Director (Refineries) of IOCL, BPCL, HPCL; Director (Planning), GAIL; Director, IIP; Director (T), EIL; Director, MoP&NG; Secretary, OADB and ED, CHT as Members.

The expenditure of CHT is funded through grants from OADB. Manpower at CHT is drawn on deputation from oil industry, EIL, GAIL on tenure basis. Retired officers from PSU oil companies are engaged on contract basis as Advisors.

3.0 ROLE AND OBJECTIVES OF CHT

The major role and objectives of CHT are as under:

- Refinery Performance Evaluation and Improvement
- Energy Efficiency Improvement
- Centralised Technical Assistance to Oil Industry for accessing international standards and best practices, troubleshooting and process solutions
- Providing professional guidance and services to refineries / pipelines in the following critical areas:
 - Process Technology
 - Product Quality
 - Benchmarking and Performance Excellence
 - Environmental Management

- Information and Knowledge Dissemination through Activity Committee Meetings, Refinery Technology Meets, Workshops etc.
- Assisting MoP&NG in formulating Auto Fuel Policy and its implementation
- Co-ordinate “Scientific Advisory Committee on Hydrocarbons” of MoP&NG and promoting indigenous technologies through sponsoring R&D projects and their commercialization.
- Technical Support to MoP&NG
- Assistance to MoP&NG with regard to Inter-Ministerial issues, Long Term Plans etc.

4.0 RULES AND REGULATIONS

The rules and regulations of CHT are governed by the Memorandum of Association & Articles of Association and the decision taken in the Governing Council Meeting from time to time. Copy of the MOA & AOA is attached as **Attachment-I**.

Chapter 2 : ORGANIZATIONAL AND ADMINISTRATIVE SET UP

1.0 GENERAL

CHT is headed by Executive Director (ED) who is appointed by Ministry of Petroleum & Natural Gas. He is also the Member Secretary of the Governing Council. Administratively, ED, CHT reports to Joint Secretary (Refineries), MoP&NG. The activities of CHT are reviewed by the Executive Committee from time to time and once in a year by the Governing Council.

2.0 DELEGATION OF AUTHORITY

The DOA of ED, CHT is as per the latest Delegation of Authority (DOA) accorded to Executive Director of Indian Oil Corporation Limited (IOCL).

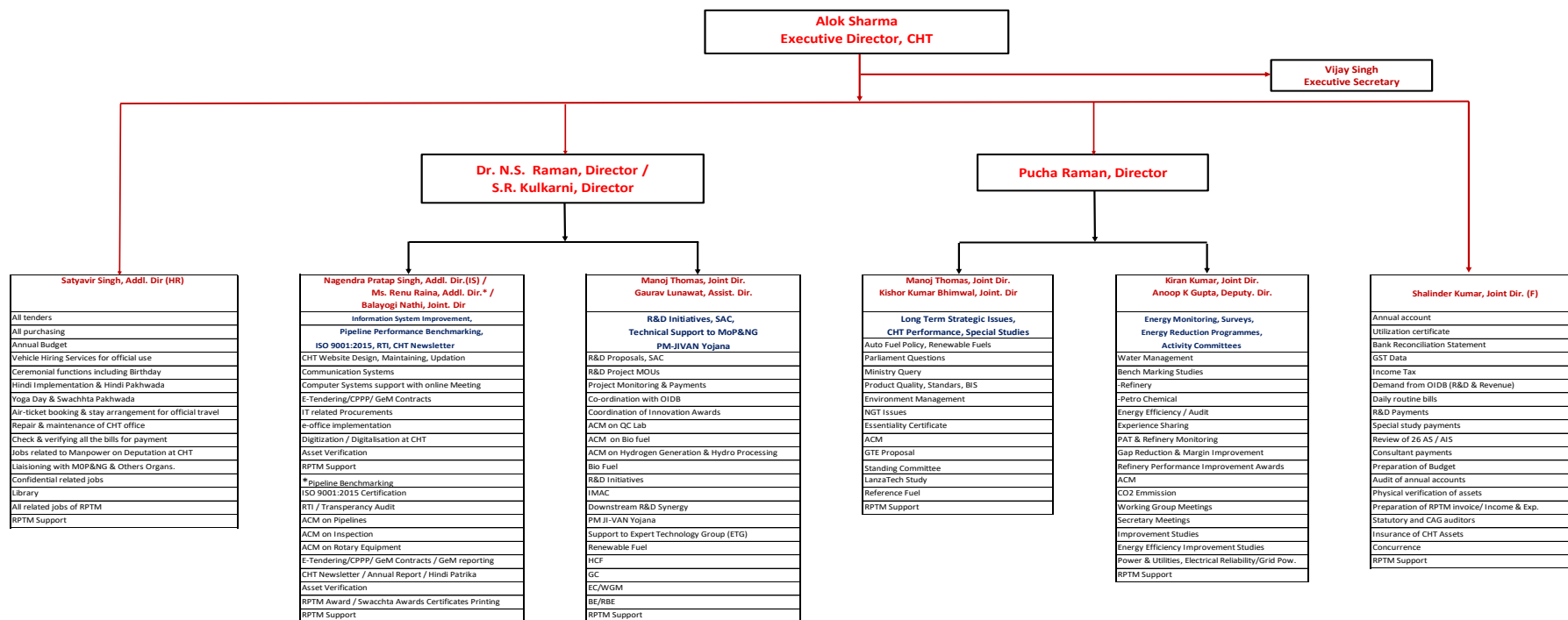
DOA is broadly tabulated below :

Sl. No.	Nature of Power	ED, CHT	Executive Committee	Governing Council	Remarks
1	Annual Budget	-	-	Full Power	
2	Works & Purchases	Rs. 10 crore		Full Power	DOA of ED, CHT as per latest DOA of ED, IOC. *
3	To engage consultants, technical experts, advisors for activities of CHT / MoP&NG, including foreign experts against payment of their fee and travelling expenses, etc. a) Indian Experts b) Foreign Experts	Upto Rs. 10 lakh per case Upto Rs. 25 lakh per case	Rs.15 crore per case Rs. 15 crore per case	Full Power Full Power	
4	Write-off a) Not due to theft, fraud or negligence b) Due to theft, fraud or negligence	Upto Rs. 40 lakh in each case Upto Rs. 8 lakh in each case			DOA of ED, CHT as per latest DOA of ED, IOC. *
5	Grant for R&D Projects	-	Rs. 15 crore per case	Full Power	
6	Appointment of experienced personnel, including retired senior officers preferably from refining sector, on contract basis	Remuneration as followed by PSU Oil companies			As approved by GC in its 27 th meeting on 26 th June, 2008.

* As decided by GC in its 31st meeting on 18th October 2012.

3.0 ORGANOGRAM & FUNCTIONS

Organogram of CHT for All Functions w.e.f. 20th May 2022



ALL OFFICERS WILL BE REQUIRED TO UNDERTAKE ANY OTHER JOBS ASSIGNED FROM TIME TO TIME

(Alok Sharma)
Executive Director, CHT

4.0 PERSONNEL

All officers and staff at CHT are drawn from PSU Oil industry, EIL and GAIL on deputation. The personnel on deputation are governed by rules and regulations of their parent organization. In view of shortage of manpower and inability of Oil companies in deputing suitable experienced manpower, CHT also engages experienced personnel, including retired senior officers preferably from refining sector, on contract basis for regular assignment as per the modalities followed by PSU oil companies.

5.0 RTI

The RTI requests are received by post as well as on-line directly or through MoP&NG. Replies are sent to the applicant after approval from CPIO, CHT by post and through on-line system with a copy to MoP&NG. The numbers of open RTI are closely tracked. Quarterly and Annual RTI Returns are sent to MoP&NG and is also filed online to Central Information Commission in RTI website (www.rtionline.gov.in/RTIMIS) and (<http://rtiar.nic.in/rtiar09/login.asp>). Director (Technical) is appellate authority at CHT.

6.0 GRIEVANCE REDRESSAL

As per the provision in Section 4 of the Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013, an Internal Complaint Committee (ICC) has been constituted for receiving and redressal of complaints.

7.0 OFFICIAL LANGUAGE IMPLEMENTATION

As per the Official Language Resolution dated 18th January 1968, adopted by Parliament, the Official Language Implementation Cell at CHT follows the guidelines and programme of the Dept. of Official Language, Ministry of Home Affairs every year.

8.0 OFFICIAL WEBSITE

All details pertaining to CHT functioning & activities, notifications, etc. are updated on the official website www.cht.gov.in from time to time.

Chapter 3 : FINANCE, BUDGET AND ACCOUNTS

1.0 BUDGET

- a) The expenditure of CHT including for special studies and grant for R&D projects is funded by OADB.
- b) The annual budget of CHT is approved by the Governing Council.
- c) The accounts of CHT are audited annually by qualified auditor appointed for the purpose, by the Governing Council.

2.0 ASSET VERIFICATION

2.1 The inventory for Physical assets and consumable goods & materials shall be maintained and verified at least once in a year.

2.2 Procedure for Verification

- a) Verification shall always be made in the presence of the officer, responsible for the custody of the inventory being verified.
- b) Valuation of the assets shall be done by Finance for write off/disposal by committee constituted by ED, CHT.
- c) A certificate of verification along with the findings, shall be recorded in the stock register.
- d) Discrepancies, including shortages, damages and unserviceable goods, if any, identified during verification, shall immediately be brought in to the notice of the competent authority, for taking appropriate action.

Chapter 4 : PROCUREMENT

The Procurement Procedure for goods and services shall be followed in line with the prevailing guidelines / rules/ ammendments in GFR-2017 & GeM. CHT has been registered on NIC portal in June 2016. Tenders shall be uploaded and published on Central Public Procurement Portal – <https://eprocure.gov.in/cppp> and in GeM Portal.

The broad guidelines for procurement are tabulated below:

1. ED, CHT shall be the designated competent authority for all procurements.
2. All the products and services listed in the GeM portal mandatorily need to be procured from the portal <https://gem.gov.in>
 - a. Up to Rs. 25,000/- : From any of the available suppliers on the GeM
 - b. > Rs. 0.25 Lakh & ≤ Rs. 5.0 Lakh : From the GeM Seller having lowest price amongst the available sellers, of at least three different manufacturers, on GeM (online bidding is optional)
 - c. > Rs. 5.0 Lakh : From the supplier having lowest price using online bidding tool or reverse auction provided on GeM.
3. Purchase of goods / services up to limit of Rs. 25,000/- shall be done without quotation
4. Purchase of goods / services between Rs. 25,000/- and Rs. 2.5 lakh shall be done through Purchase Committee.
5. Limited Tender Enquiry shall be issued to more than 3 vendors for value of goods up to Rs. 25 Lakh.
6. Advertised Tender Enquiry shall be issued for procurements of goods for value Rs. 25 Lakh & above.
7. For Consultancy Services of value above Rs. 25 Lakh, EOI shall be published.
8. For outsourcing of services, Limited Tender Enquiry shall be issued to more than 3 vendors for value up to Rs. 10 Lakh and Advertised Tender Enquiry shall be issued for value Rs. 10 Lakh & above.

The detailed guidelines are specified in the Procurement Manual (**Attachment-II**).

Chapter 5 : FUNDING OF R&D PROJECTS & MONITORING

1.0 SCIENTIFIC ADVISORY COMMITTEE :

To promote application of science and technology in the hydrocarbon sector (excluding upstream sector), Scientific Advisory Committee (SAC) on Hydrocarbons is constituted every three years by MoP&NG. Currently, SAC is headed by Dr Anil Kakodkar, a prominent scientist of BARC & Padma Vibhushan Awardee and comprises of Members, Permanent Invitees & Special Invitees from academic institutions (IISc, IITs, IICT), Oil PSUs, R&D organisation of Oil PSUs, IIP, NCL, OIDB & MoP&NG.

The details of the constituted committee and the terms of reference are attached (**Attachment-III**).

2.0 PROCEDURE FOR GRANT OF R&D PROJECTS & MONITORING

The proposals received from R&D and academic institutions / organisations are presented before SAC on Hydrocarbon of MoP&NG for recommendation and subsequent approval from Executive Committee (EC) / Governing Council (GC). The progress of the project is reviewed regularly and the status is presented to SAC, EC and GC.

In each project, a commercial partner from Oil PSU is also involved for commercialization and use of developed know-how. A Position Paper on needs for futuristic areas of research in the downstream sector has been finalised after thorough deliberation by SAC. The Executive Summary of the Position Paper is in **Attachment-IV**. Further, for broader participation, mechanism of inviting research proposal through EOI (**ANNEXURE-I**) route has been introduced since June, 2016.

CHT signs MoU with Participating agency(ies) and the copy of Standard MoU is attached as **ANNEXURE-II**. For promotion of Hydrogen Research, MoP&NG has formed Hydrogen Corpus Fund (HCF), which is managed by OIDB. Detail on HCF is attached as **ANNEXURE-III**.

The Procedure for Assets Management under R&D Projects is attached as **ANNEXURE-IV**.

Chapter 6 : AWARDS SELECTION PROCEDURES

1.0 With a view to encourage competition amongst the Refineries and recognize overall performance improvement, Ministry of Petroleum & Natural Gas, Government of India has instituted the following annual awards:

- **Performance Improvement Award**
- **Oil & Gas Conservation Fortnight Award**
- **Innovation award**

The awardees for the first two categories are finalised by the Award Selection Committee comprising of eminent experts constituted by Ministry of Petroleum & Natural Gas.

Further, in order to incentivise and encourage R&D / Innovation efforts in the Oil Industry, the Governing Council has also instituted **R&D / Innovation Awards** during its 32nd meeting. For the Innovation awards, awardees are finalised by the Award Selection Committee constituted by Chairman, SAC, based on guidelines of Governing council of CHT.

1.1 Performance Improvement Award

The Award is based on the performance of refineries against the following parameters:

Sl No	Parameter	Measure of the Parameter	Maximum Score
1	Crude T'put	Actual daily T'put over best of daily T'put in previous 2 years	30
2	Specific Energy Consumption (MBN)	% achievement of potential reduction in MBN over base year 2014-15	25
3	Specific steam consumption	MT steam produced/MT crude processed	15
4	Carbon Emission Intensity	% reduction over best achieved in the previous 2 years	10
5	Operating cost (\$b/bbl crude processed)		10
6	Specific water consumption	M3 fresh water/TMT crude processed/NRGF	10

Procedure :

- a) In the month of June/July, all the Refineries send the final Specific Energy Consumption (MBN) calculation for the concluded financial year by e-mail to CHT.
- b) The data received from Refineries are used to recalculate the MBN for each Refinery.
- c) Any deviations in the calculation procedure or values incorrectly applied in NHV etc. are set right in the CHT calculation.
- d) Energy Factor for CDU, VDU, FCCU, HCU, HGU, CRU/CCRU and offsites & utilities are calculated from the operating data and the feed quality.
- e) The MBN calculated by CHT is taken as final for the Refinery.
- f) In the month of May, ED, CHT writes to MOP&NG for approving the Award evaluation criteria and to set up the committee for selecting the performance improvement awards and OGCF award.
- g) After getting approval from Ministry, ED, CHT writes to all the unit Heads of the Refineries informing about the approved evaluation criteria and the data required in the given format.
- h) CHT calculates CWT of Refineries from the Fuel data provided by Refineries and the flare data supplied by Refineries in the CHT provided format.
- i) CHT cross checks the data provided by Refineries for uniformity especially for Operating cost calculation.
- j) CHT also checks the steam and water balance provided by Refineries and use the figs in the evaluation once satisfied with the correctness.
- k) CHT evaluates the Refineries against the criteria by feeding the data into the calculation file and get the top two winners.
- l) ED, CHT calls the meeting of the Award selection committee and presents the findings of the evaluation along with reports and supporting documents.
- m) Award selection committee evaluates the performance and recommends the winners for Performance Improvement Award.
- n) The Minutes of Meeting of the award selection committee is sent to MOP&NG and after getting the final clearance from MOP&NG, the winners list is taken as final.
- o) Performance Improvement awards are given to top two refineries, based on overall score during RPTM.

1.2 Oil & Gas Conservation Fortnight Award

Oil & Gas Conservation Fortnight (OGCF) is celebrated throughout the country in the second half of January every year with the purpose of creating awareness amongst various target groups to appreciate and inculcate the habit of conserving petroleum

products. As a part of this celebration, CHT, in association with refineries, organizes surveys and evaluates the performance in the following areas

- i) Furnace / Boiler Efficiency
- ii) Steam leak.

These two areas are taken-up every alternate year. The surveys are conducted simultaneously at all the refineries including private refineries by teams constituted by CHT.

Procedure for Furnace / Boiler Efficiency Award:

- a) Survey during Oil conservation fortnight at all Refinery units is carried out by a team comprising of one team leader cum coordinator of the participating Refinery with 2 to 3 external members from other Refineries, as per CHT guidelines.
- b) ED,CHT writes to all the Refinery unit Heads and inform about the survey and request nominations for taking part in survey in other Refineries and to nominate team leader-cum-coordinator in the same Refinery. Detailed procedure for conducting the survey, survey schedule and the survey team composition are also included in the letter
- c) CHT sends the excel file for entering data and for getting the results with built in calculations to all the Refinery coordinators .
- d) During the survey, all required data as per the prescribed format is collected by the team for all the unit furnaces/boilers in presence of Refinery representative /coordinator.
- e) The data entry and getting result of survey is completed by each team before completion of the survey period in the survey location itself.
- f) At the end of the survey, the team prepares the final report and submits to CHT through the unit head.
- g) Award selection committee constituted by MoP&NG evaluates the performance and recommends the winners in different groups.
- h) The Minutes of Meeting of the award selection committee is sent to MOP&NG and after getting the final clearance from MOP&NG, the winners list is taken as final.
- i) OGCF award is given to refinery with best improvement in overall furnace efficiency as compared to the best value in previous 2 years, during RPTM.

Procedure for Steam Leak Award:

- a) Survey during Oil conservation fortnight at all Refinery units is carried out by a team comprising of one team leader cum coordinator of the participating Refinery with 2 to 3 external members from other Refineries, as per CHT guidelines
- b) ED,CHT writes to all the Refinery unit Heads and inform about the survey and request nominations for taking part in survey in other Refineries and to nominate team leader-cum-coordinator in the same Refinery. Detailed procedure for conducting the survey, survey schedule and the survey team composition are also included in the letter
- c) CHT sends the excel file for entering data and for getting the results with built in calculations to all the Refinery coordinators .
- d) Auditors walk through each unit/ facility in the Refinery including power plant, off-sites, ETP and determine the type of steam leak, estimate the plume length of visible leaks and estimate the extent of passing of valves/traps. Steam generation and consumption figures are also recorded.
- e) At the end of the survey period, the survey team finalises the steam leak rate in kg/MT of steam generated in the Refinery and submit the final report to CHT through the unit head.
- f) CHT prepares a summary report of evaluation which has all the information and calculation results.
- g) Award selection committee constituted by MoP&NG evaluates the performance and recommends the winners in different groups.
- h) The Minutes of Meeting of the award selection committee is sent to MOP&NG and after getting the final clearance from MOP&NG, the winners list is taken as final.
- i) OGCF award is given to refinery with best reduction in steam leak (kg/MT of steam produced) as compared to best value in the previous 2 years , during RPTM.

1.3 Innovation Awards

MoP&NG has approved following number of Innovation Awards:

- 1) Best Indigenously Developed Technology
- 2) Best Innovation in Refinery
- 3) Best Innovation in R&D Institute

The Awardees have been selected by Award Selection Committee constituted by Chairman, SAC.

Step by Step Procedure:

1. CHT sends communication to all PSU, JV & Private oil companies of India. Format is given in Annexure-1.
2. CHT compiles all the applications and proposes Award Committee for approval of Chairman SAC. Composition of Award Committee is also given in Annexure-1.
3. Award Committee shortlists the applications based on Evaluation Criteria for each category. Evaluation criteria are given in Annexure-2.
4. Shortlisted Applicants are called for presentation before Award Committee.
5. Based on presentation and deliberations, Award Committee recommends the awards.
6. CHT informs to all the Awardees.
7. Awards are given away normally during inaugural session of RPTM.

Annexure-1

CHT/Innovation/

Date

To,

Sub: Innovation Awards for Refineries and R&D

Dear Sir,

As you are aware, MoP&NG has instituted annual awards under the following categories for Indian Downstream Hydrocarbon sector;

- i) Best Indigenously Developed Technology
- ii) Best Innovation in Refinery (refinery/group/individual)
- iii) Best Innovation in R&D Institute (institute/group/individual)

The awards are given based on selection by the Award Committee duly constituted by MOP&NG and carry cash award & citation. It is requested to forward the nominations for awards in the prescribed format latest by.

The Award criteria/methodology as well as application format is enclosed as Annexure-A.

Thanking you,

Yours sincerely,

Executive Director

Encl: As above

Copy to:

Innovation Awards

1.0 Objectives of the Award

The objective of these awards is to promote innovative scientific endeavor in the country by encouraging and rewarding excellence in original invention/innovation and channelizing national and international knowledge and expertise with the objective of giving impetus to innovation activity in the country.

MOP&NG has instituted annual awards for downstream sector under following categories:

1. Best Indigenously Developed Technology
2. Best Innovation in Refinery (refinery/group/individual)
3. Best Innovation in R&D Institute (institute/group/individual)

2.0 Frequency of Award

Every year

3.0 Type of Award

Cash for awardees and citation for the organization. The monetary awards shall be as under:

1. Best Indigenously Developed Technology – Rs 5.0 lakh
2. Best Innovation in Refinery (refinery/group/individual) – Rs 2.0 lakh
3. Best Innovation in R&D Institute (institute/group/individual) – Rs 2.0 lakh

4.0 General Criteria

4.1 Technology / Process

- Indigenous Development
- Period: Not before 5 years from last date of application filing.
- Should be available for the benefit of the Nation. However, royalty may be received for the usage of technology.
- Should be individual(s) from an Indian Organization or in collaboration with Indian partner. In case of development through international collaboration, the Indian Partner's share must be more than 51% and technology should be available for national use.
- Could be novel product also.

- Developed Technology has not been out rightly transferred to another party for one-time payment.

4.2 Technical Criteria

- Technology / Process / Product should be innovative. If similar technologies / processes already exist, it should meet below mentioned aspects:
 - Should have some distinctive innovative features
 - Should have been already patented or patent filed
 - Should have been commercialized and benefits of the technology/process demonstrated
 - Should compete with commercially available technologies
 - If the technology has been commercialized in-house, details of the performance need to be furnished to the Award Committee
- Technology must be energy efficient
- It should meet all HSE requirements
- If not commercialized, has it should have been demonstrated at reasonable scale, e.g., 1000 bbl/day product
- Additionally it should be indicated whether the FTO, i.e., Freedom to Operate for indigenous application has been done and the Technology/Process has not been challenged in a court of law.

4.3 Eligibility Criteria

- Individual or group of individuals preferably not exceeding 5
- Superannuated employee can also be considered for award along with other employees
- All awardees' name should preferably be in the patent application or granted patent.

5.0 Application Procedure

The application should contain following:

- i) Name of the Technology/Process/Product
- ii) Names of individuals, organization
- iii) Detailed write up on the technology including figure, tables etc.
- iv) Copy of published literature on existing similar technologies
- v) Copy of patent or patent application
- vi) Copy of publications on the technology
- vii) Details of the commercialized unit

- viii) Certificate from the licensee
- ix) If the innovation has been recognized/awarded by any other institution, details thereof.

General Conditions

- The organization should forward the application
- Application may be rejected if adequate technical details are not provided
- The award may not be given, if all applications are found unsuitable
- The application will not be returned to the applicant
- The application will be accepted for consideration for maximum 3 consecutive years.
- Decision of the committee will be final & no further correspondence will be entertained.
- Strict confidentiality of the application along with technical details would be maintained.
- CHT reserve the right for publicizing the award and awardee.
- In case of international collaboration, individuals belonging to Indian organization would be eligible for cash award. Others would get only citation.

6.0 Composition of Award Committee

The Award Committee consists of following members:

- i) Chairman – SAC Chairman
- ii) Convener – ED(CHT)
- iii) Members – 6 Nos.
 - 2 from Oil industries
 - 2 from CSIR/IITs/ National Institute of repute
 - 2 from SAC nominated members or experts

APPLICATION FOR INNOVATION / TECHNOLOGY AWARD

Proposer Organisation _____

Name of the Technology /Process / Product	
Name(s) of individual(s), Organisation(s)	
Executive summary of the Technology /Process / Product	
Detailed write-up on technology (including figures, tables, etc.)	
Copy of published literature on existing similar technologies	
Copy of patent / patent application	
Copy(ies) of publications on the technology	
Details of commercialized unit	
Certificate from licensee	
Details of recognition / award for the Innovation/ Technology from any other institution enclosed	

Evaluation Matrix for Innovation Awards

Category 3: Best Innovation in R&D				Projects						
Parameters	Max Score	Attributes	Max Score	1	2	3	4	5	6	7
Differntiation	15	Me too type ---- First mover	0-15							
Indegenisation	10		10							
Impact	15	Specific to a Refinery location	5							
		Petroleum sector	10							
		Other industrial sectors	15							
Commercialisability	20	Tie up with Engineering Partner	5							
		Tie up with commercial Partner	5							
		Demonstrated	5							
		Commercialised	5							
Patent	15	Filed	5							
		Granted	15							
Relevance	15	Current	5							
		Futuristic	10							
		Game changer	15							
Overall Impression	10		10							
Total	100									

Note: Catalyst will fall under Category-3



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ANNEXURE-I

EOI Guidelines & Application Format for Inviting R&D Proposals

Centre for High Technology (CHT) established as dedicated technology cell of MoP&NG, is engaged in promoting indigenous technologies through sponsoring R&D projects and their commercialisation in the downstream sector. CHT co-ordinates activities related to “Scientific Advisory Committee (SAC) on Hydrocarbons of MoP&NG”. SAC consists of eminent scientists / academia / industry professionals and its mission is to Promote Application of Science and Technology in the Downstream Hydrocarbon Sector.

For broader participation, mechanism of inviting research proposal through Expression of Interest (EOI) route has been introduced since July, 2016. New R&D project proposals are taken up in the identified areas for grant-in-aid and aimed at development of new product or process, or major improvement in an existing process or product with attractive commercialisation potential. The proposals are received from R&D and academic institutions/organisations & presented before Scientific Advisory Committee (SAC) on Hydrocarbon of MoP&NG for recommendation and approval from Executive committee (EC)/Governing Council (GC) of CHT.

Following are the guidelines for inviting R&D proposals through EOI:

Objectives

- a. Development of innovative product and process technologies for hydrocarbon / oil sector and alternate energy fuels
- b. Strengthening the interface between R&D establishments and Industry
- c. Accelerating commercialization of products/ processes successful at lab stage

Sectors of Interest

Downstream Hydrocarbon sector, Alternative & Non-conventional fuels for Transport

Project Proposals

CHT invites new R&D project proposals through EOI throughout the Calendar Year. Projects should aim at development of a new product or a process, or major improvement in an existing product or process, with attractive market potential. The projects should result in significant benefits to hydrocarbon sector / oil industry.

Procedure for approval

1. Receipt of project proposals
2. Screening by Select Committee of SAC
3. Recommendation by the SAC

4. Approval by EC/GC of CHT
5. MOU signing for the approved project proposal

Nature of Proposals

- Refinery Residue to Clean Fuels
- Desulphurisation of Diesel and Gasoline
- Coal / Gas / Biomass Gasification
- Low Level Heat Recovery
- Alternative Energy: Bio-fuels and Hydrogen
- Carbon Capture
- Molecular Engineering
- Hydrogen as Fuel - Production and Storage
- Process Intensification
- Photo Synthesis

Development of equipment for self-sufficiency in vulnerable areas and Policy related matters may also be considered by SAC for funding

Activities Supported

Partial financial support is provided by CHT primarily to cover development, cost of pilot plant, cost of process equipment, consumable cost, test and evaluation of products, user trials etc. The proposal deliverables should have innovative element and preferably address the following aspects:

- a. Development of a new or improved product resulting in prototype development and ending with demonstration in commercial environment
- b. Development of a new or improved process resulting in establishment of process / technology know-how, development of process equipment and demonstration in a pilot plant
- c. Indigenization of imported technology
- d. Technology development projects for improvement of products / processes
- e. Development & demonstration of technologies for use by cluster of industries
- f. The proposal should have progressed to minimum Technology Readiness Level (TRL -3) as detailed in Annexure -1.

Eligibility Criteria

- Oil industry (PSUs / Private with PSU partner) organisations
- DSIR recognised Research Institutes / CSIR Labs/ Educational Institutes of repute (like IIT, NIT, etc.) with financial commitment from one of the PSU oil companies
- Individuals with financial commitment from one of the PSU oil companies

Evaluation Procedure

- The project proposals are initially scrutinized in-house by CHT. During initial examination, proposal is evaluated from eligibility point of view along with expected outcome and its

relevance with scheme objectives outlined in guidelines. Required additional information is sought from applicants, wherever necessary.

- Chairman SAC nominates Screening Committee for shortlisting the proposals for consideration by SAC.
- The applicant is required to give a detailed presentation for 15-30 minutes before the Screening Committee describing the features of the R&D Project and the expected outcome with time-lines. The Committee also deliberates upon cost involved and likely benefit to the target group.
- The Committee scrutinises all the proposals, advises modifications, if required and shortlists for consideration of SAC.
- Applicants of projects which are not approved by Screening Committee are informed along with reasons.
- SAC deliberate on all the shortlisted proposals and recommend the same for approval by Executive Committee (EC) / Governing Council (GC) of CHT.
- CHT signs Memorandum of Understanding (MOU) with participating agencies and a nodal agency is decided among participating agencies by CHT. Subsequently based on project cost, CHT forms Project Monitoring Committee (PMC) / Project Steering Committee (PSC) by taking one coordinator from each participating agency for monitoring of the project progress.
- Grant-in-aid is released based on the expenditure, utilization certificate and the project elements as defined in MOU.
- The progress of the project is reviewed regularly by PMC/PSC and the status is presented to SAC.
- Projects closure/foreclosure is decided by SAC.
- Based on SAC recommendations, nodal agency submits the final report to CHT along with way forward.

Parameters for scrutiny of Proposals by Screening Committee

S.N	Criteria	Remarks
Necessary Conditions		
1	Relevance to downstream sector: Link to Position Paper	
2	Whether the project is at translational level (The proposal should have progressed to minimum Technology Readiness Level (TRL -3) as detailed in Annexure-1).	
3	PSU tie-up / interface	
Checklist		
4	Innovativeness, potential as breakthrough/ game changer	

5	Supported by Literature scan & benchmarking	
6	Capability for Scale-up and sustained development	
7	Commercialisation potential	
8	Proposed model for scale up and commercialisation	
9	Realistic deliverables, timelines	
10	Financials: Cost details, funding requested vs. contribution, justification	
11	Linkage with Next phase	

APPLICATION PROCEDURE:


Application format for submitting project proposal is given in **Annexure-2**. Proposals (in 2 hard copies and 1 soft copy) on the above lines are invited from Individuals, R&D Establishments, Technical Institutions and Industries as per the eligibility criteria. Proposals should be forwarded by the Director/ Head of the organization to:

Executive Director

Centre for High Technology
9th Floor, OIDB Bhawan,
Plot no. 2, Sector – 73,
NOIDA – 201 316 (U.P.)
Ph: 0120-2593701

Sub : Technology Readiness Level (TRL)

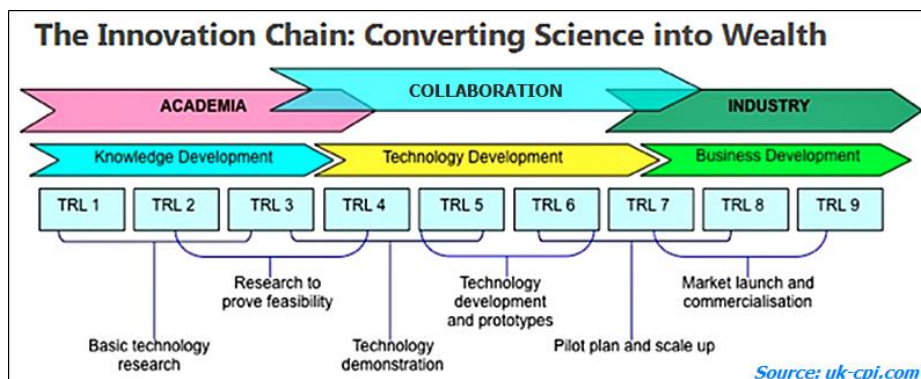
Technology Readiness Level (TRL) is a measure used to assess the maturity of evolving technologies prior to incorporation into a system and subsystem. The innovation channel is described in nine levels starting from TRL 0 (Idea) to TRL 9 (Full Commercial application). Lower TRL indicates high risk and as the project reaches higher TRL levels, the risk involved in the project is mitigated.



Technology Readiness Levels

- TRL 0: Idea.** Unproven concept, no testing has been performed.
- TRL 1: Basic research.** Principles postulated and observed but no experimental proof available.
- TRL 2: Technology formulation.** Concept and application have been formulated.
- TRL 3: Applied research.** First laboratory tests completed; proof of concept.
- TRL 4: Small scale prototype** built in a laboratory environment ("ugly" prototype).
- TRL 5: Large scale prototype** tested in intended environment.
- TRL 6: Prototype system** tested in intended environment close to expected performance.
- TRL 7: Demonstration system** operating in operational environment at pre-commercial scale.
- TRL 8: First of a kind commercial system.** Manufacturing issues solved.
- TRL 9: Full commercial application,** technology available for consumers.

As can be seen from above, the proof of concept of the technology is established once TRL 3 is achieved. At this level, the basic technology research is considered to be completed through involvement of Academia and testing in Research Laboratory. Thereafter, there is a need to develop and demonstrate the technology. In general, collaboration with Commercialisation partner brings in innovation at subsequent stage till TRL 6. Further development may even require involvement of engineering partner going through demonstration to full commercial scale plant.



Format for Submitting Project Proposal

The R&D Project Proposal submitted to CHT for funding by OADB through Scientific Advisory Committee should cover the following points:

1. Project Title
2. Executive Summary of the Proposal
3. Principal Co-coordinators & Investigators, Likely Partners and their particulars + brief CVs
4. Objective
5. Introduction and background
6. Current Status / developments in the proposed area
7. Novelty of the Proposal
8. Proposal details and Methodology
9. Whether the proposer is satisfied that proposal has progressed to minimum Technology Readiness Level (TRL -3) as detailed in Annexure -1. Please provide details.
10. Project schedule / timeframe with milestones
11. Cost estimates / phasing of expenditure – covering detailed break-up about recurring & non-recurring costs like equipment costs (with justification), Manpower/Salaries, Consumables, Travel, Contingency/Overheads, Consultancy, etc.
12. Scope of Work and Work Plan (Activity-wise)
13. Resources Utilization (internal & external like infrastructure/facilities/manpower)
14. Responsibilities of other Collaborators, if applicable
15. Bar chart of Activities & milestones
16. References
17. Commercialisation Potential of the Proposed study
18. Deliverables (product, technology, report, software, IPR, data, etc.)
19. Payment Terms, if any (Normally CHT terms are followed)
20. Whether the research lab under the Institution, recognized by Government / DSIR
21. Linkage with Next Phase of development

DECLARATION

I/We hereby declare that

- i) I/We have not undertaken this project earlier with any other organization
- ii) I/We have not taken any financial help for this project from any other institution
- iii) In case of receipt of grant-in-aid from CHT, financial help shall not be taken from any other Govt. organization against this project.
- iv) Items, which are to be purchased are listed with estimated cost of each.

Signature

Date: _____ Principal Investigator

Seal

MEMORANDUM OF UNDERSTANDING

This MEMORANDUM OF UNDERSTANDING (MOU) made and entered into on this _____ day of _____ (month), Two Thousand and _____ (year), between **COUNCIL OF SCIENTIFIC & INDUSTRIAL RESEARCH (CSIR)**, a society registered under the Societies registration Act (XXI of 1860), having its registered office at Anusandhan Bhawan, 2, Rafi Marg, New Delhi – 110001 through its constituent laboratory CSIR-Indian Institute of Petroleum (CSIR-IIP), Dehradun - 248005, (hereinafter called **Party A**, which expression shall, unless it be repugnant to the context or contrary to the meaning thereof include its successors, legal representatives and permitted assignees) of the **FIRST PART**

AND

INDIAN OIL CORPORATION LIMITED (IOCL), an Oil and Gas Public Sector Undertaking company, incorporated under the companies Act, 1956 and having its registered office at Indian Oil Bhawan, G-9, Ali Yavar Jung Marg, Bandra (East), Mumbai – 400051 and having its R&D Centre at Sector–13, Faridabad – 121007, Haryana, (hereinafter called **Party B**, which expression shall, unless it be repugnant to the context or contrary to the meaning thereof include its successors, legal representatives and permitted assignees) of the **SECOND PART**

AND

ENGINEERS INDIA LIMITED (EIL), New Delhi, registered under the companies Act, 1956 and having its registered office at Engineers India Bhawan, 1 Bhikaji Cama Place, New Delhi – 110 066 (hereinafter called **Party C**, which expression shall, unless it be repugnant to the context or contrary to the meaning thereof include its successors, legal representatives and permitted assignees) of the **THIRD PART**

AND

CENTRE FOR HIGH TECHNOLOGY, a Society registered under the Societies Registration Act (XXI of 1860), under the Ministry of Petroleum & Natural Gas, Government of India, having its office at OIDB Bhawan, Tower “A”, 9th Floor, Plot 2, Sector-73, Noida -201307, (hereinafter referred to as ‘**CHT**’ which expression shall, unless it be repugnant to the context or contrary to the meaning thereof include its successors, legal representatives and permitted assignees) of the **OTHER PART**

Definitions of the words wherever they are used in this MOU will be as under:

“SAC” – Scientific Advisory Committee on Hydrocarbons constituted by Ministry of Petroleum & Natural Gas (MoP&NG), Government of India.

“GRANT / GRANT-IN-AID” shall mean funding by Centre for High Technology (CHT) which it receives from Oil Industry Development Board (OIDB) for approved Research & Development Projects. OIDB is a corporate body established under Oil Industry (Development) Act, 1974 for providing financial & other assistance for development of hydrocarbon sector, conservation of petroleum products and energy security of the country.

“FUNDING AGENCY” shall mean CHT / OIDB.

“PROJECT” shall mean project proposal(s) undertaken for research and new developments duly recommended by SAC and approved by Competent Authority

“PARTICIPATING AGENCY” shall mean Party A, Party B & Party C individually and collectively shall be referred to as “PARTICIPATING AGENCIES”.

“NODAL AGENCY” shall mean an oil PSU company with whom the project is being pursued or as designated by SAC for piloting the Project and acting on behalf of other PARTICIPATING AGENCIES including itself.

“BACKGROUND INTELLECTUAL PROPERTY” shall mean any or all intellectual property including patents, patent applications, copyright, trademarks or designs which are developed individually / jointly / severally by the PARTICIPATING AGENCIES prior to the signing date of this MOU.

“INTELLECTUAL PROPERTY RIGHTS” (IPR) shall mean any or all intellectual property including patents, patent applications, copyright, trademarks or designs which are developed jointly by PARTICIPATING AGENCIES under the PROJECT.

ZERO DATE: The Zero Date shall mean the date of release of first payment by CHT to PARTICIPATING AGENCY(ies) or 60 days from signing of MOU, whichever is earlier.

COMPLETION PERIOD: The duration for the PROJECT (including subsequent time extensions, if any) as approved, for completing the activities as defined in the scope of work of this MOU, defined in months from the Zero Date.

“PROJECT STEERING COMMITTEE (PSC)” shall mean the committee as defined in Clause 3.1.

“PROJECT MONITORING COMMITTEE (PMC)” shall mean the committee as defined in Clause 3.2.

“Competent Authority” shall mean Project Approving Authority i.e. Governing Council or Executive Committee of CHT

PREAMBLE

- A. AND WHEREAS Party A is a premier industrial research institute and has expertise in the field of petroleum refining, processing, chemicals & intermediates, lubricants, catalysts, and petroleum products applications and has developed, over the years, experience and capabilities in these areas.
- B. AND WHEREAS Party B has expertise in the field of petroleum refining, processing, chemicals & intermediates, catalysts and petroleum products applications and has developed, over the years, experience and capabilities in these areas.
- C. AND WHEREAS Party C has been offering Consultancy Services to the Refining Industry for many years including troubleshooting and has developed considerable expertise in this area. Party C has also the requisite experience in the preparation of Basic Engineering Design Package for refinery process technologies.
- D. AND WHEREAS CHT is a society promoting research and new developments in the area of hydrocarbons including but not limited to petroleum refining technology, petrochemicals, lubricants and related areas.
- E. WHEREAS, the Project titled “_____ (Title of the Project)” (hereinafter called the “**PROJECT**”) has been considered and approved at a total Project cost of ` ____ (in lakh) (Rupees in words) and completion period of ____ months.

The breakup of the sanctioned Project cost shall be as under:

- 1) ` ____ (in lakh) as grant/grant-in-aid by CHT to PARTICIPATING AGENCIES
- 2) ` ____ (in lakh) to be internally funded by Party A
- 3) ` ____ (in lakh) to be internally funded by Party B

4) ` ____ (in lakh) to be internally funded by Party C

F. AND WHEREAS, NODAL AGENCY is acting on behalf of the PARTICIPATING AGENCIES for the PROJECT and shall undertake and facilitate research and developmental activities along with necessary inputs to & from the PARTICIPATING AGENCIES.

G. AND WHEREAS, ownership of Intellectual Property Rights (IPR) of the PROJECT, if any, shall vest with the PARTICIPATING AGENCIES. However, ownership of the Background Intellectual Property which may be utilised as a part of the project activities / scope of work, shall vest with the respective PARTICIPATING AGENCY.

H. The completion period for the PROJECT shall be for _____ months from the Zero Date.

THEREFORE, it is agreed by the PARTICIPATING AGENCIES and CHT, through the instrument of this MOU as follows:

Clause 1 – Scope of MOU

1.1 This MOU details the terms and conditions regarding the PROJECT to be carried out by PARTICIPATING AGENCIES along with CHT, the rights and obligations of all the parties with respect there to and the usufructs thereof and the financial arrangements between the PARTICIPATING AGENCIES. The Scope of work, Activity Time Schedule and Project Cost estimates for the PROJECT to be undertaken under this MOU are detailed in **Annexure – I, II and III** respectively.

1.2 The PARTICIPATING AGENCIES would be responsible for successful completion of the PROJECT and shall be wholly responsible for fulfilling the objectives of the project.

Clause 2 – Objectives of the Project

2.1 .

2.2 .

Clause 3.1 – Project Steering Committee

3.1.1 The SAC while approving the PROJECT may recommend constitution of **Project Steering Committee (PSC)**, if felt desirable, considering the grant and importance /

significance of the project. CHT in consultation with PARTICIPATING AGENCIES shall decide and constitute the PSC.

- 3.1.2 PSC of the PROJECT comprising of the senior executives as nominees of the PARTICIPATING AGENCIES and Executive Director, CHT shall review the overall progress of the project at least once in 6 months and progress report of the PROJECT (**Annexure-IV-2**) shall be submitted to the CHT within 2 weeks of the meeting. The meetings of the PSC shall be convened by CHT.
- 3.1.3 PSC shall be responsible for Mid-term review of the PROJECT, recommending any modification in the scope of work, any midcourse correction and re-appropriation of funds including additional funds required for consideration and approval of SAC / Competent Authority.

Clause 3.2 – Project Monitoring Committee

- 4.1 Forthwith upon signing this MOU, a **Project Monitoring Committee (PMC)** will be constituted by CHT by nominating one member each from the PARTICIPATING AGENCIES and CHT for carrying out technical review and monitoring the physical progress of the PROJECT.
- 4.2 PMC shall prepare a detailed programme for the operation of the PROJECT along with the time targets, in line with the Scope of Work (**Annexure-I**) and Detailed Activity Plan (**Annexure-II**).
- 4.3 The PMC member from NODAL AGENCY will be responsible to convene the meetings of PMC. PMC shall also be responsible for activities as defined in Clause 3.1.3 for projects where PSC is not constituted.
- 4.4 The project will be monitored by PMC as and when required but at-least once in six months. The PMC member from NODAL AGENCY will prepare and circulate quarterly report (**Annexure-IV-2**) on the progress of the project to CHT.

Clause 4 – General responsibilities of the PARTICIPATING AGENCIES

- 5.1 PARTICIPATING AGENCIES shall undertake the PROJECT activities as detailed in **Annexure-I** but not limited to their defined Scope of work and will take full responsibility for the coordination of activities under the PROJECT.
- 5.2 PARTICIPATING AGENCIES may share and utilise the Background Intellectual Property to the extent necessary in meeting the defined objectives and scope of work / deliverables under the PROJECT.
- 5.3 PARTICIPATING AGENCIES shall be responsible for interacting with any outside party or within the PARTICIPATING AGENCIES for but not limited to purchase of equipment / hardware / software, construction & installation etc. required for the PROJECT for carrying out experiments to fulfil the objectives of the PROJECT. However, PARTICIPATING AGENCIES shall ensure that no procurement relating to any non-recurring expenses or major equipment purchases shall be undertaken in the last three months for a PROJECT with completion period of less than or equal to two years or in the last six months for a PROJECT with completion period of more than two years since the same shall not be entitled to any payment from the grant by CHT.
- 5.4 NODAL AGENCY in association with the PARTICIPATING AGENCIES shall submit to CHT, every three months, the status report depicting the areas covered and constraints being faced, if any, and actions proposed for removing such constraints along with their final effect on PROJECT time schedule. However, in case there is any delay by PARTICIPATING AGENCIES in the PROJECT completion, commitment fee will be charged as per the provisions detailed in Commitment Fee Clause no. 9 of this MOU.
- 5.5 NODAL AGENCY in association with PARTICIPATING AGENCIES shall submit the draft report (**Annexure-IV-3**) to CHT, at-least one month in advance before scheduled presentation to SAC, incorporating, inter-alia, all relevant details viz., objectives, details of work carried out, observations, conclusions drawn, suggestions for further course of action including the short term and long term gains of the PROJECT, with special reference to the viability of those

- PROJECT results which could culminate into Intellectual Property including registrable Intellectual Property.
- 5.6 NODAL AGENCY will make a presentation on the findings of the Project, to SAC, after incorporating comments on the draft report, if any and submit the final report (**Annexure-IV-3**) as defined in Clause 7 of this MOU. The final report shall also include the details of the assets purchased by PARTICIPATING AGENCY(ies) out of grant-in-aid and IPR generated during the PROJECT.
- 5.7 PARTICIPATING AGENCIES would not demand for any additional grant-in-aid from CHT / OIDB unless approved by competent authority. However, any re-appropriation of grant-in-aid under various heads of A PARTICIPATING AGENCY as well as among the PARTICIPATING AGENCIES shall be reviewed and recommended by PSC / PMC for approval by CHT.
- 5.8 NODAL AGENCY shall maintain proper accounts of the total expenses incurred on the PROJECT and also obtain details of expenses incurred by other PARTICIPATING AGENCIES, wherever applicable, out of funds contributed by CHT / OIDB. These will be available for inspection to CHT / OIDB representatives upon written request from CHT, as and when considered necessary.
- 5.9 PARTICIPATING AGENCIES shall submit statement of expenditure at the time of submission of invoices and utilisation certificate (**Annexure-IV-1**) on a half yearly basis, to CHT. The un-audited statement of account in respect of the grant-in-aid received from CHT / OIDB shall be submitted before 31st May of each financial year and the audited statement shall be submitted subsequently by the end of calendar year.
- 5.10 The grant-in-aid or any part thereof remaining unutilised for more than three months with PARTICIPATING AGENCIES on the conclusion or completion of PROJECT or upon its abandonment, suspension or discontinuance for any cause, shall lapse and stand revoked or shall be forthwith surrendered and returned to CHT.

- 5.11 In case unutilized portion of the grant made by CHT is not surrendered and returned to CHT by PARTICIPATING AGENCIES, beyond three months, penal interest at the Base Lending Rate of State Bank of India (SBI), as amended from time to time, plus 3%, shall be levied on such portion of the grant till the same is returned to CHT.
- 5.12 PARTICIPATING AGENCIES shall ensure that initial invoice is raised not later than 30 days from the date of signing of the MOU.
- 5.13 Except with the prior written consent of CHT, PARTICIPATING AGENCIES, wherever applicable, shall not at any time and in any manner, during the continuance of the PROJECT or upon the discontinuance, abandonment or suspension for any cause or upon its completion or at any time thereafter transfer, dispose off or encumber, alienate or create any mortgage, lien, hypothecate or pledge, utilise or permit utilisation other than for R&D purposes, any assets in whole or part, created, acquired, purchased or procured with the grant.
- 5.14 The treatment of assets acquired by the PARTICIPATING AGENCIES from the grant-in-aid shall be carried out as prescribed below:
- a. PARTICIPATING AGENCY(ies) shall procure the assets, out of the grant-in-aid received from CHT, in line with their in-house procurement procedures. However, the lien over the physical assets purchased or acquired by PARTICIPATING AGENCIES out of the grant-in-aid shall vest with CHT, till buy back / disposal of the assets.
 - b. During the period of lien, the PARTICIPATING AGENCY(ies) shall not treat the assets acquired from the grant-in-aid as their own assets in the books of accounts but shall disclose their holding in the notes to accounts.
 - c. After financial closure of the PROJECT, the assets would be disposed off and the PARTICIPATING AGENCY shall remit the realized value upon disposal to CHT / OADB. CHT, on receipt of request from PARTICIPATING AGENCY(ies), may however permit at its discretion the following:
 - i. Buy back of assets at the book value, to be indicated by CHT

- ii. Retention till later date if asset / facility is envisaged to be used for further research. However, till PARTICIPATING AGENCY is able to dispose off the asset after financial closure of the PROJECT, it will be considered as Automatic Retention and clause (d), as below, will apply.
 - d. During retention period of assets, the PARTICIPATING AGENCY would maintain the equipment at its own cost and shall remit the realized value to CHT / OADB, as and when assets are disposed off. Further, if there is any income, out of services rendered by the PARTICIPATING AGENCY using the assets, a statement of income shall be submitted and such income on equitable basis shall be remitted to CHT, before 1st July of the year.
 - e. PARTICIPATING AGENCY(ies) shall insure the assets acquired from the grant-in-aid till their disposal / buy back.
 - f. In case the PARTICIPATING AGENCY(ies) do not communicate any of the above options, the ownership of assets purchased against grant-in-aid shall be transferred to PARTICIPATING AGENCY(ies) at book value, after 5 years in case of Pilot plants and 3 years for all other Capital items, subsequent to financial closure of the PROJECT. The book value of the assets shall be deposited forthwith with CHT/OADB by the PARTICIPATING AGENCY. Further during the above period, if there is any income, out of services rendered by the PARTICIPATING AGENCY using the assets, a statement of income, together with remittance of such income on equitable basis shall be submitted before 1st July of the calendar year, to CHT.
- 5.15 PARTICIPATING AGENCY(ies) shall ensure that following clauses related to LD and Performance Guarantee are included in their tender documents while doing procurement out of the GRANT-IN-AID received from CHT:
- a. In case of any delay in execution of services envisaged in the tender document, attributable to Vendor's inability, Vendor's remuneration shall

be deducted at the rate which shall not be less than 0.5% per week of delay subject to a maximum of 5%.

- b. Criteria for Performance Guarantee shall be clearly defined and Vendor has to submit Performance Bank Guarantee (PBG) of 10% of the order value. The PBG shall be valid till successful completion of work/procurement.

Clause 5.1 – Responsibilities of Party A.

- 6.1 Party A shall, as part of the joint PROJECT, carry out the following activities and will also extend all possible cooperation in the activities to be conducted by other PARTICIPATING AGENCIES:
 - a.
 - b.

Clause 5.2 – Responsibilities of Party B

- 7.1 Party B shall, as part of the joint PROJECT, carry out the following activities and will also extend all possible cooperation in the activities to be conducted by other PARTICIPATING AGENCIES:
 - a.
 - b.

Clause 5.3 – Responsibilities of Party C

- 8.1 Party C shall, as part of the joint PROJECT, carry out the following activities and will also extend all possible cooperation in the activities to be conducted by other PARTICIPATING AGENCIES:
 - a.
 - b.

Clause 6 – Responsibilities of CHT

- 9.1 In consideration of the work to be carried out for the PROJECT by PARTICIPATING AGENCIES, CHT/OIDB shall pay towards recurring

expenses such as cost of utilities, manpower, travel, chemicals & non-recurring expenses such as procurement of equipments / fabricated hardware items / AMCs for the existing equipment/s, their installation, spares based on actual expenditure, subject to maximum of _____ (in lakh) as grant-in-aid towards the Project cost which is detailed in the **Annexure- III** of this MOU.

9.2 CHT shall release payments to Party A, Party B & Party C as under:

9.2.1 NODAL AGENCY shall submit Bank guaranty (BG) equivalent to an amount of 10% of CHT's contribution including contingency (to take care of any eventuality arising from clause 9 on account of LD) plus advance released by CHT, upon signing the MoU. However, NODAL AGENCY, who is PSU or Academia, will be exempted from submitting BG.

9.2.2 Invoices shall be routed through the NODAL AGENCY for processing by CHT. However, the payments shall be released to the PARTICIPATING AGENCIES directly.

9.2.3 10% of the CHT's share in the approved PROJECT cost excluding contingency and equipment cost, on signing of MOU upon receipt of the formal invoice(s) by CHT from NODAL AGENCY for itself and other PARTICIPATING AGENCIES.

9.2.4 Release of grant for procurement of capital items shall be as per terms of purchase order.

9.2.5 Contingency shall not be payable unless approved by the Executive Director, CHT based on the recommendation of PMC.

9.2.6 CHT shall maintain account of utilised and unutilised amount under each head separately. Subsequent payments shall be made by CHT head wise against running bills duly supported by Letter of Intent / purchase order and / or invoice of vendor / bill for equipment and consumables / Undertaking and/or bill for manpower, overheads, up-to-date along with statement of expenditure / utilisation certificates, etc., after adjusting advance. Advance at any stage will be equal to 10% of unutilized money (Approved less already Released amount) under all the heads excluding contingency and equipment. However, if all activities under any head are completed, the unutilized money for that head will

be set to Zero. Further, the approved amount out of contingency will be added to the head, for which the same is approved, while calculating eligible advance.

9.2.7 As a special case for CSIR Institutes/IITs/Academia, CHT shall release the payment for procuring capital items as per the following conditions:

- a. Institute shall send the request / demand letter on its letterhead along with administrative approval clearly indicating name of the party selected, order value including taxes and payment schedule for placing the order.
- b. Institute shall place the PO within 3 months after receipt of grant and ensure to submit the copy of the PO to CHT.
- c. The grant-in-aid or any part thereof remaining unutilised for more than three months with Institute shall lapse and stand revoked and shall be forthwith surrendered and returned to CHT, unless agreed in writing to the contrary, by CHT.
- d. In case unutilized portion of the grant made by CHT is not surrendered and returned to CHT by PARTICIPATING AGENCIES within three months, penal interest at the Base Lending Rate of State Bank of India (SBI), as amended from time to time, plus 3%, shall be levied on such portion of the grant till the same is returned to CHT.
- e. Interest earned by the Institute on the funds released by CHT, shall be returned to CHT.

9.2.8 CHT may undertake physical verification of acquired assets prior to release of final payment.

9.2.9 The payment against grant-in-aid will normally be released within 30 days from the date of receipt of Invoice/s from PARTICIPATING AGENCIES through NODAL AGENCY, accompanied by relevant supporting documents such as purchase order, statement of expenditure / utilisation certificate, bills, etc.

9.2.10 The release of grant-in-aid will be subject to availability of funds in the approved budget of CHT in the respective years.

Clause 7 – Duration and Completion Period of the PROJECT

10.1 The PROJECT shall be completed within ____ months from the Zero Date.

- 10.2 In case of delay attributable to CHT, on account of releasing payment to the PARTICIPATING AGENCIES against the initial invoice/s, Zero Date shall be the date of payment release by CHT to the PARTICIPATING AGENCIES.
- 10.3 The Project shall be deemed to have been successfully completed by the PARTICIPATING AGENCIES based on recommendation of PSC / PMC and acceptance of the deliverables and Draft Report by the SAC.
- 10.4 On acceptance of the PROJECT completion by the SAC, the Final report incorporating the comments of CHT / SAC, shall be submitted by the NODAL AGENCY as per Annexure-IV-3. The final report will clearly indicate that all items / deliverables referred in the scope of work have been satisfactorily completed. Ten copies of the final report along with a soft copy on appropriate media will be submitted to CHT by NODAL AGENCY. However, if the developmental work involved in execution of the PROJECT or the findings / results thereof could lead to Intellectual Property Rights, only limited number of copies (as advised by CHT) will be submitted to CHT.
- 10.5 The financial closure of the PROJECT by CHT shall be done only after receipt of final report and may involve physical verification of assets by CHT.

Clause 8 – Effective duration of MOU

- 11.1 This MOU shall be effective from the date of signing the MOU.
- 11.2 The validity of the MOU will be from the date of signing of MOU till the duration of PROJECT (including time extension granted, if any) plus 12 months or till financial closure of the PROJECT, whichever is earlier.
- 11.3 During its duration, MOU may be extended subject to recommendations of PSC/PMC and approval of Executive Director, CHT and/or SAC, as the case may be.
- 11.4 During its duration, MOU may be terminated / foreclosed by a prior notice of not less than one month by the PARTICIPATING AGENCY(ies). However, the final decision regarding any termination / foreclosure shall be based on the decision of the SAC.

11.5 In the event of termination / foreclosure of MOU with PARTICIPATING AGENCIES, CHT shall be entitled for refund of an amount proportional to the quantum of unfinished work after deducting the expenditure incurred / committed by PARTICIPATING AGENCIES. Similarly, in case of termination of this MOU by CHT, PARTICIPATING AGENCIES shall be entitled to an amount of portion matching the work thus far done or expenses committed. The amount to be so paid in either of the above case under this MOU shall be settled mutually.

Clause 9 – Commitment Fee

12.1 PARTICIPATING AGENCIES in accordance with MOU, shall complete the entire PROJECT within the completion period of _____ months from the Zero Date.

12.2 However, in case of any delay in the PROJECT completion due to any reasons/ circumstances not attributable to the PARTICIPATING AGENCY, the matter with full justification shall be referred by PMC /PSC to SAC, who will have the power to sanction time extension for the PROJECT.

12.3 If there is any delay in the completion of the PROJECT beyond approved extension by SAC, CHT shall (without prejudice to any right of CHT on this behalf) be entitled to charge from PARTICIPATING AGENCIES @ 2% per month of the CHT's contribution to the PARTICIPATING AGENCIES, subject to a maximum ceiling of 10% of CHT's contribution in the total project cost.

Clause 10 – Results of the PROJECT

13.1 Each PARTICIPATING AGENCY shall retain ownership of its Background Intellectual Property and also of its Intellectual Property Rights developed or acquired outside of the PROJECT. Subject to Clause 10.2 hereunder, nothing in this MOU shall be construed granting of, by implication or otherwise, any rights, title or interest in the Background Intellectual Property or other Intellectual Property Rights of any PARTICIPATING AGENCY to the other PARTICIPATING AGENCY.

13.2 If the results of the investigations are such that intellectual property rights developed under this PROJECT could be secured through legal instrument i.e. patents, etc. then

PARTICIPATING AGENCIES shall jointly apply, secure and maintain the rights on behalf of all the parties with intimation to CHT/OIDB. The ownership of such Intellectual Property Rights shall vest in PARTICIPATING AGENCIES. It is to be ensured that the inventors from these PARTICIPATING AGENCIES must have contributed to at least one of the claims for any patent application. These organizations can use this intellectual property and acquired assets, individually or collectively amongst the contributing institutes, for further research and development or academic purposes.

After completion of the project or even during the execution of the project, if the PSC or PMC is of the opinion that the outcome of the project, in terms of patent or products or technology has the potential for commercialization, a separate agreement may be signed between the PARTICIPATING AGENCIES and CHT/OIDB for commercialization of the outcome. The agreement would also cover the benefits that would go to PARTICIPATING AGENCIES and CHT / OIDB, out of such commercialization efforts. In case of commercialisation with the third party or its outright sale, PARTICIPATING AGENCIES will seek permission / consent of CHT/OIDB. The same permission shall be deemed to have been given by CHT/OIDB after one month from receipt of such request by the PARTICIPATING AGENCY, if not informed to the contrary. However, CHT/OIDB at its discretion may exercise its right to become party to such discussions with the third party. The PARTICIPATING AGENCY shall share such income, from commercialisation or its outright sale, with CHT/ OIDB based on both financial and technical contribution of the participating agencies including CHT/OIDB and shall be detailed in the separate agreement.

- 13.3 The issue of bearing of expenses for registration and maintenance of IPR will be taken up jointly and shall be settled by mutual discussions by PARTICIPATING AGENCIES. However, if academic institute is a Participating Agency and not able to bear the expenses for filing and maintaining IPR, the industry partner may bear the expenses on its behalf which shall be recovered from the royalty earnings, if any, at a later date.
- 13.4 Publications, presentations or reproduction of the project report / part thereof any proprietary data / information emanating from the PROJECT by PARTICIPATING AGENCIES would need prior consent of the other involved PARTICIPATING AGENCIES in writing. The discretion for such dissemination will vest with PARTICIPATING AGENCIES after exploring the possibility of IPR. Any such

information in respect of the above shall be intimated to CHT/OIDB and details thereof provided.

- 13.5 Publications, if any, in respect of the PROJECT shall be in the name of research workers / staff & officers of PARTICIPATING AGENCIES. In all the publications it will be duly acknowledged that the work has been carried out by Party A, Party B & Party C under the grant-in-aid from CHT.
- 13.6 Except as herein otherwise specifically permitted, the Intellectual Property / Product / Technology developed under this PROJECT shall be kept strictly confidential by all the PARTICIPATING AGENCIES and shall not be disclosed to a third party who is not a signatory to this MOU, without the prior consent of other PARTICIPATING AGENCIES & CHT/OIDB for at least 20 years from the completion of the PROJECT. In the event of such agreed disclosure to any other outside agency or in the event of such agreement on pursuing further research and development independently or in collaboration in the related or unrelated areas with the third party(ies), the concerned PARTICIPATING AGENCY/(ies) will sign a secrecy agreement (Non-disclosure agreement) with the other party.
- 13.7 In case any of the PARTICIPATING AGENCY(ies) decides to withdraw from the PROJECT during the execution of the project, the knowledge / data / intellectual know-how and rights acquired during the course of the PROJECT shall be made available to the other remaining PARTICIPATING AGENCIES, unconditionally.

Clause 11 – Force Majeure

- 14.1 Neither PARTICIPATING AGENCIES shall be held responsible for non-fulfilment of their respective obligation(s) under this MOU due to the exigency of one or more of the force majeure event(s) such as, but not limited to Acts of God, War, Flood, Earthquake(s), Strike(s), Lockout(s), Epidemic, Riot, Civil Commotion etc. provided on the occurrence and cessation of any such event, 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 6 (six) months, the PARTICIPATING AGENCIES shall jointly decide about the future course of action.

Clause 12 – Notices

15.1 All notices and other communication required to be served on CHT under the terms of this MOU, shall be considered to be duly served, if the same shall have been delivered to, left with or posted by registered mail or courier or e-mail to CHT at its last known address of businesses. Similarly, any notice to be given to PARTICIPATING AGENCIES shall be considered to be duly served, if the same shall have been delivered to, left with or posted by registered mail or courier or e-mail is sent to PARTICIPATING AGENCIES at their registered addresses.

Clause 13 – Amendment to the MOU

16.1 No amendment or modification of this MOU shall be valid unless the same is recommended in writing by the PSC / PMC constituted specifically stating the same to be an amendment of this MOU. Power to make such amendment / modification / addendum rests only with Executive Director, CHT. The modifications / changes shall be effective from the date on which they are made / executed, unless otherwise agreed to.

Clause 14 – Assignment of the MOU

17.1 The rights and/or liabilities arising to any PARTICIPATING AGENCIES to this MOU shall not be assigned except with the written consent of the other PARTICIPATING AGENCIES and CHT, subject to such terms and conditions as may be mutually agreed upon.

Clause 15 – Arbitration

18.1 For Indian Parties: This MOU will be governed by and construed in accordance with the laws of India. All disputes, controversies or claims arising out of, or in connection with, this MOU shall be finally settled by arbitration under the Rules of Delhi High Court Arbitration Centre or Indian Council of Arbitration (ICA) by one or more arbitrators appointed in accordance with the said Rules. The seat of the arbitration shall be New Delhi, India and the language of the arbitration shall be English.

- 18.2 For Central Government department / Undertaking: In the event of any dispute or difference relating to the interpretation and application of the provisions of this MOU, such dispute or difference shall be referred by either party for Arbitration to the sole Arbitrator in the Department of Public Enterprises to be nominated by the Secretary to the Government of India in-charge of the Department of Public Enterprises. The Arbitration and Conciliation Act, 1996 shall not be applicable to arbitration under this clause. The award of the Arbitrator shall be binding upon the parties to the dispute, provided, however, any party aggrieved by such award may make a further reference for setting aside or revision of the award to the Law Secretary, Department of Legal Affairs, Ministry of Law & Justice, Government of India. Upon such reference the dispute shall be decided by the Law Secretary or the Special Secretary / Additional Secretary, when so authorized by the Law Secretary, whose decision shall bind the Parties finally, conclusively. The Parties to the dispute will share equally the cost of arbitration as intimated by the Arbitrator.
- 18.3 The responsibilities / deliverables under this MOU shall be continued during the arbitration proceedings, unless otherwise agreed in writing by the parties or it is proved that the services cannot possibly be continued during the arbitration proceedings.

Clause 16 – Exclusion of Govt of India Clause (applicable when PARTICIPATING AGENCY is outside Public Sector Undertaking (PSUs) or Govt of India. department / entity)

- 19.1 _____ (PARTICIPATING AGENCY is PSU / Govt. of India entity) are individually an independent legal entity with power and authority to enter into contracts solely on its own behalf under the applicable laws of India and the general principles of contract law.
- 19.2 _____(PARTICIPATING AGENCY is outside PSUs or Govt. of India department / entity) expressly agrees and acknowledges that PARTICIPATING AGENCY which is PSUs /Govt. entities) are individually not an agent, representative or delegate of the Government of India and that the Government

of India is not and shall not be liable for any acts, omissions, commissions, breaches or other wrongs arising out of this MOU.

19.3 _____(PARTICIPATING AGENCY is outside PSUs or Govt. of India department / entity) hereby expressly waives, releases and forgoes any and all actions or claims, including cross claims, impleader claims or counter claims, against the Government of India arising out of this MOU and covenants not to sue the Government of India for any manner of claim, cause of action or thing whatsoever arising out of or under this MOU.

Clause 17 – Jurisdictions and Applicable Law

This MOU including all matters connected with this shall be governed by the Laws of India (both substantive and procedural) for the time being in force and shall be subject to exclusive jurisdiction of Indian Courts at New Delhi.

The MOU has been executed in _____ originals for retaining one copy each by Party A, Party B, Party C and CHT.

In witness whereof, the parties hereto have signed this MOU on the day, month and year mentioned herein before.

SEAL OF PARTIES

For and on behalf of Party A
CSIR-Indian Institute of Petroleum,
Dehradun – 248 005

For and on behalf of Party B
Indian Oil Corporation Limited,
R&D Centre, Sector 13,
Faridabad – 121 007

Signature _____

Signature _____

Name _____

Name _____

Designation _____

Designation _____

Seal _____

Seal _____

Witness: (Name & Address)

Witness: (Name & Address)

1. _____

1. _____

2. _____

2. _____

Date _____

Date _____

For and on behalf of Party C
Engineers India Limited, R&D Centre,
Sector-16, Gurgaon – 122 001

For and on behalf of
Centre for High Technology,
Sector-73, NOIDA – 201 307

Signature _____

Signature _____

Name _____

Name _____

Designation _____

Designation _____

Seal _____

Seal _____

Witness: (Name & Address)

1. _____

2. _____

Date _____

Witness: (Name & Address)

1. _____

2. _____

Date _____

Scope of work

- OVERVIEW SUMMARY.
- OBJECTIVES
- SCOPE OF WORK & RESPONSIBILITIES (PARTICIPATING AGENCY-WISE)
- BENEFITS / DELIVERABLES OF THE PROJECT

ACTIVITY TIME SCHEDULE

**(THE DETAILED ACTIVITY SCHEDULE WITH TIMELINES & BAR-CHART OF THE
INDIVIDUAL PARTICIPATING AGENCIES)**

PROJECT COST

S. No.	Description	Cost (` in Lakh)
1	Internal funding / contribution by PARTY A	
2	Internal funding / contribution by PARTY B	
3	Internal funding / contribution by PARTY C	
4	Grant / Grant-in-Aid from CHT	
	a. Fund required by PARTY A	
	b. Fund required by PARTY B	
	c. Fund required by PARTY C	
	Total Project cost (1+2+3+4)	

Detailed Cost Breakup (organizations)

A) PARTY A

1. Total Contribution from CHT – ` _____
2. Total Contribution from Internal Resources ` _____

S. No.	Item	` In Lakh
1.	Recurring cost (Manpower, Consumables, Travel, etc.)	
2.	Non-recurring cost (Capital Expenditure)	
3.	Other Expenditure (Overheads, Contingency, etc.)	

	Total	
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B) PARTY B

1. Total Contribution from CHT – ` _____
2. Total Contribution from Internal Resources – ` _____

S. No.	Item	` In Lakh
1.	Recurring cost (Manpower, Consumables, Travel, etc.	
2.	Non-recurring cost (Capital Expenditure)	
3.	Other Expenditure (Overheads, Contingency, etc.)	
	Total	

C) PARTY C

1. Total Contribution from CHT – ` _____
2. Total Contribution from Internal Resources – ` _____

S. No.	Item	` In Lakh
1.	Recurring cost (Manpower, Consumables, Travel, etc.	
2.	Non-recurring cost (Capital Expenditure)	
3.	Other Expenditure (Overheads, Contingency, etc.)	
	Total	

Annexure IV

1. FORMAT FOR UTILISATION CERTIFICATE (**Annexure IV-1**)
2. FORMAT FOR PROJECT PROGRESS REPORTS (**Annexure IV-2**)
3. FORMAT FOR DRAFT REPORT / FINAL REPORT (**Annexure IV-3**)

Annexure IV-1

		<u>Utilization Statement of Expenditure</u>						
		Funds Allocated as per MoU	Fund Released by CHT		Expenditure Incurred		Balance	Remarks
			Till Previous FY	Current FY	Till Previous FY	Current FY		
1	Manpower							
2	Travel #							
3	Equipment							
4	Consumables							
5	Overhead Expenses							
6	Others, if any							
7	Interest	-			-	-		
8	Total							

Certify that the travelling expenditure are related to the project only.

Principal Investigator:

Competent Financial/Audit authority

Head of the Institution

Date:

Date:

Date:

FORMAT FOR PROJECT PROGRESS REPORT

Physical & Financial progress of Project

No	Description	Details
1.	Name of the Project / Study	
2.	Competent approving authority / Date	
3.	Participating agencies	
4.	Approved Total Cost and Contribution of participating agencies, if any	
5.	Revised cost, if any and reasons	
6.	Objectives of the project	➤ ➤ ➤
7.	Duration of the Project (in months)	
8.	Start / MOU Date and Zero Date	
9.	Scheduled completion date	
10.	Revised completion schedule	
11.	Planned work up to the quarter (physical), indicate milestones on quarterly basis	
12.	Actual progress (physical) with respect to milestones	
13.	Reasons for shortfall, if any	
14.	Asset procured, if any (give details)	
15.	Actual expenditure	
16.	Projected expenditure for the next quarter	
17.	Total amount released from CHT	
18.	Revised schedule, if any, with justification	
19.	Filing of Patents / Commercialization of patents related to Project.	

Name of the Project Coordinator & Date

FORMAT FOR DRAFT REPORT / FINAL REPORT

The format of the draft / final report shall be as following:

1. Cover page
2. Copyright
3. Executive Summary
4. Acknowledgement
5. Contents
6. Introduction
7. Objective
8. Scope of work
9. Approach / Methodology
10. Data collection and Analysis, if applicable
11. Evaluation / Results & Discussion
12. Conclusions
13. Future scope of work / Way forward / Commercialization / Potential
14. Nomenclature
15. References
16. Appendices, if any.
17. List of Assets purchased out of grant-in-aid
18. Details of IPR generated during the project

HYDROGEN CORPUS FUND (HCF)

1.0 MoP&NG created a HCF with the contribution from OI DB and Oil PSUs in June 2003. The fund is being managed by OI DB as per the guidelines issued by the Steering Committee on HCF of MOP&NG. The broad objectives of HCF are:

- i. Develop hydrogen as an alternative energy source through indigenization of technology
- ii. Facilitate R&D activities
- iii. Synergies hydrogen development activities between Oil COs / Institutions
- iv. Facilitate training and capability building

2.0 INITIAL CORPUS OF HCF:

Rs. 100 crore with the contribution of

- Rs. 40 crore by OI DB
- Rs. 16 crore each by IOCL, ONGC & GAIL
- Rs. 6 crore each by BPCL & HPCL

3.0 GUIDELINES (JUNE 2009) FOR APPROVAL FOR FUNDING PROJECTS UNDER HCF:

CHT is the nodal agency for taking up H₂ projects and related activities. Scientific Advisory Committee (SAC) will act as Technical Committee for HCF. All proposals under HCF will be received by CHT and put to SAC for recommendation after screening. After recommendation from SAC, the project proposal shall be placed before Executive Committee/Governing Council based on the project cost for approval.

The research project under HCF will be approved as per procedure followed for projects funded through OI DB/CHT.

ASSET MANAGEMENT PROCEDURE FOR R&D PROJECTS

A. PREAMBLE

Centre for High Technology (CHT) receives various R&D project proposals from different Research Institutions / Academia / Oil industry for funding under the grants received by CHT from Oil Industry Development Board (OIDB). On recommendation of the SAC and approval for funding by EC / GC of CHT, CHT enters into Memorandum of Understanding (MoU) with the concerned Participating Agency(ies) for the approved Project that defines the objectives, Scope of work, Time schedule, deliverables and financial details.

The issue in respect of treatment of completed Projects & assets thereof, was referred to OIDB, who vide its letter no 4/14/05-OIDB dated 31.05.2005 viewed that all entries (Revenue as well as Capital) related to the completed projects can be withdrawn from the Research & Development account "Asset Side" and correspondingly from the Research & Development fund from "Liabilities Side" in the balance sheet of CHT. Accordingly, the entries related to the financially closed and completed R&D projects were being treated in balance sheet, with the approval of Executive Director, CHT.

Since CHT does not have any facility nor R&D set-up to take back the assets and undertake further research independently, these assets were allowed to be retained & maintained by the respective Participating Agencies. However, lien over assets remained with CHT even after financial closure of the R&D project.

Therefore, a need was felt to streamline the procedure for maintaining and treating the assets acquired under various R&D projects through grant-in-aid during project execution & after project completion. In this regard, Chartered Accountant was engaged by CHT for detailed clarification for treatment of assets & lien thereof, for finalizing the procedure for Asset Management for R&D Projects. The Standard MOU format for R&D Projects, dated 30.3.2016, prepared and approved by CHT in consultation with major R&D project stakeholders including OIDB, is based on Asset management procedure for R&D Project.

B. PROCEDURE

The outline of the Asset Management procedure is summarized as under:

1. The expenditure on R&D projects from grant-in-aid can be broadly categorized into following two categories:

- a. **Revenue items:** These items (recurring expenses) of the total project cost can be defined as under:
 - i. Consumable materials, consumable stores
 - ii. Manpower
 - iii. Consultancy fees
 - iv. Any other expense of such nature
 - b. Capital items (non-recurring expenses) :
 - i. Computer items including software and hardware
 - ii. Laboratory instruments such as density meter, viscometer, controllers, measuring devices etc.
 - iii. Pilot plant/s facilities which shall also include laboratory scale facility / equipments such as reactors / reactor systems, catalyst preparation units, Gas Chromatographs, ultrasonicator, microwave oven, etc / bench scale units / demo plant / skid mounted units
2. For Actual Treatment of Assets
 - i. Separate record of book value of assets shall be maintained for all completed and ongoing R&D projects funded by CHT/OIDB.
 - ii. The salvage value shall be kept at 5% of the actual cost.
 - iii. After the financial closure of the project, a time-frame of 5 years for Capital item at 1-b(iii) above and 3 years for all other computer & lab instruments at 1-b(i) & (ii) above is to be considered as useful life of the assets, only for the purpose of accounting & depreciation. The useful life defined above may be reviewed from time to time by CHT, if required.
 - iv. The straight line depreciation method shall be used for calculating the book value.
 3. For Balance Sheet of CHT
 - i. The Revenue expenditure under the Project shall be booked under the relevant head of the books of accounts completely in the subsequent year of financial closure of the project.
 - ii. The Capex shall be booked /adjusted under the relevant head of the books of accounts of CHT after completion of 5 years for Pilot plants and 3 years for all other capital items following the financial year in which the financial closure of the project is completed.
 - iii. The sale proceeds, if any, after disposal of the asset/s will be considered as Income in the Balance sheet in the year of receipt or refunded to OIDB.
 4. The lien over assets acquired by the Participating Agencies out of the grant received from CHT shall vest with CHT till buyback / disposal of the assets. During the period of lien, the Participating Agencies shall not treat the assets acquired from the grant-in-aid as their own assets in the books of accounts but shall disclose their holding in the notes to accounts. After completion of the Project, the Participating Agency (ies) should submit

the complete list of assets acquired out of grant-in-aid to CHT. Prior to release of final payment, CHT may undertake physical verification of assets.

5. After financial closure of the Project, the assets would be disposed off and the Participating Agency (ies) shall remit the realized value upon disposal, to CHT/ OADB. CHT, on receipt of request from Participating Agency (ies), may however permit at its discretion, the following:
 - i. Buy back of assets at the book value indicated by CHT
 - ii. Retention till later date if asset / facility is envisaged to be used for further research. However, till Participating Agency is able to dispose off the asset after financial closure of the Project, it will be considered as Automatic Retention and clause 6 (below) will apply:
6. During retention period of assets, the Participating Agency would maintain the equipment at its own cost and shall remit the realized value to CHT / OADB, as and when assets are disposed off. Further, if there is any income, out of the services rendered by the Participating Agency using the assets, a statement of income shall be submitted and such income shared on equitable basis shall be remitted to CHT, before 1st July every year.
7. In case the Participating Agency (ies) do not communicate any of the above options, the ownership of assets purchased against grant-in-aid shall be transferred to Participating Agencies at book value, after 5 years in case of Pilot plants and after 3 years for all other Capital items, subsequent to financial closure of the Project. The book value of the assets shall be deposited forthwith with CHT/OADB by the Participating Agency. Further during the above period, if there is any income, out of the services rendered by the Participating Agency using the assets, a statement of income shall be submitted and such income shared on equitable basis shall be remitted to CHT before 1st July of the calendar year.
8. In the books of CHT all payments released to research institution shall be booked under the head "R&D Ongoing projects" and CHT shall prepare corresponding schedule with details of different category of assets and the same shall appear in the balance sheet till the useful life of the assets. The useful life of assets will be as per the policy framed by CHT, in force and corresponding liability shall be reflected in balance sheet under the head "OADB funds".
9. In order to ensure optimal use of equipment the master list of the assets shall be referred to and feasibility of utilizing any of these assets with useful life shall be explored before allocating financial assistance for such similar Capital expenditure item/s sought by the Project proponent.
10. This procedure shall be applicable only for all new, ongoing and completed R&D projects (as per CHT balance sheet of FY 2014 - 15).