



उच्च प्रौद्योगिकी केन्द्र

(पेट्रोलियम एवं प्राकृतिक गैस मंत्रालय, भारत सरकार)

Centre for High Technology

(Ministry of Petroleum & Natural Gas, Govt. of India)

No. CHT/EC/91/2107.

5th December 2019

To,

कार्यकारी समिति के सभी सदस्यगण (संलग्न सूची अनुसार)

All Members of the Executive Committee of CHT (As per list enclosed)

महोदय,

Dear Sir,

विषय: उच्च प्रौद्योगिकी केन्द्र की 28वीं कार्यकारी समिति का कार्यवृत्त

Sub: Minutes of 28th Meeting of the Executive Committee (EC) of Centre for High Technology

दिनांक 22 नवम्बर 2019 को पेट्रोलियम संरक्षण अनुसंधान संघ के सभा कक्ष, नई दिल्ली में संयुक्त सचिव (रिफाइनरीज) की अध्यक्षता में हुई उच्च प्रौद्योगिकी केन्द्र की 28वीं कार्यकारी समिति की बैठक का कार्यवृत्त आपकी सूचनार्थ एवं आवश्यक कार्रवाई हेतु संलग्न है।

Please find enclosed the duly approved Minutes of 28th Meeting of the Executive Committee (EC) of Centre for High Technology held on 22nd November 2019 in the Conference Hall, PCRA, New Delhi, under the Chairmanship of Joint Secretary (Refineries), MoP&NG, for kind information and necessary action.

भवदीय,

Yours sincerely,

(के. के. जैन)

कार्यकारी निदेशक

पदेन सचिव, कार्यकारी समिति- उ.प्रौ.के.

(K.K. Jain)

Executive Director

Member-Secretary, Executive Committee - CHT

संलग्न यथोक्त

Encl: As above

सूचनार्थ प्रतिलिपि :

Copy for information to:

Chairman/CMD, IOCL, BPCL, HPCL

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Members of the Executive Committee of CHT

1. Shri Rajiv Bansal,
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3. Shri Sushil T Williams,
Dy. Secretary (Refineries),
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9. Shri L.K.Vijh,
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10. Shri K.K. Jain,
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Special Invitees

11. Shri S.N. Pandey,
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12. Shri M. Venkatesh,
Managing Director,
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13. Shri S.K. Barua,
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122 A, R.G. Barua Road,
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**Minutes of 28th Meeting of the Executive Committee (EC) of Centre for High Technology (CHT)
held on 22nd Nov 2019 in the Conference Hall, PCRA, New Delhi**

Shri Sunil Kumar, Joint Secretary (Refineries), MoP&NG and Chairman of the Executive Committee of CHT chaired the Meeting. The list of participants is enclosed as **Annexure**.

ED, CHT welcomed the Chairman and other members of Executive Committee.

Thereafter, CHT made a detailed presentation on the Agenda Items. The following points emerged out of discussions:

1.1 Refinery Performance Improvement Programme (RPIP) for PSU Refineries

CHT presented the status of RPIP at 9 refineries as under:

Ref	Consultant	Benefit (₹/bbl) Quoted/ Assessed	Quoted Fee (%)	Award of Job	KoM	Status
HPC-MR	KBC	75/75	18.5	5.9.18	28.11.18	Assessment report received on 10.05.19. Under implementation phase
HPC-VR	KBC	72/72	16.5	5.9.18	29.10.18	Assessment report received on 10.05.19. Under implementation phase
BPC-MR	BCG	105/105	27	11.12.18	09.01.19	Assessment report submitted on 17.07.19. 16 out of 20 proposals signed off, 4 are techno-commercial review.
BPC-KR	BCG	125/131	21	14.12.18	15.01.19	Assessment report submitted on 25.07.19
IOC-PR	KBC	68 / 68	11	1.1.19	31.05.19	Draft Assessment report received on 15 th Oct'19. 14 out of 21 opportunities accepted for further evaluation. Final assessment phase report submitted on 15 th Nov'19
IOC-PDR	McKinsey	110 / 115	20	25.1.19	25.02.19	Assessment report submitted on 15 th Sep'19.
IOC-MR	KBC	78 / 78	19.5	25.1.19	10.05.19	15 proposals submitted on 25 th Oct'19. 9 out of 15 ideas (~ 18.8 ₹/bbl) has been mutually accepted.
IOC-GR	KBC	60	59	Dropped due to higher fees quoted by the Consultant.		
IOC-DR	KBC	76	79			

CHT informed that balance refineries viz. IOCL (BR, GR, HR, BGR, GR and DR), CPCL and NRL shall be considered in RPIP Phase-II study (Baseline year: 2018-19). The activities shall start in Jan'20, after completion of assessment phase of the current ongoing study.

EC noted the above and advised CHT to convene a meeting, post assessment phase, with refineries representatives to discuss the ideas identified subject to NDA's signed.

Action by: Refineries/CHT

1.2 Development of Water Consumption Norms and Reduction of Water Footprint

CHT presented the following matrix of identified short and long term schemes based on draft report submitted by EIL:

Refineries	Net Water Consumption	Water Saving Potential (M3/hr)			
		Short Term (2 years)	Long Term	Total Saving	Total Saving (% of Net Water Consumption)
IOCL-JR	1540	516	261	777	50
IOCL-GR	165	43	150	194	118
IOCL-DR	194	49	86	135	70
IOCL-BGR	248	45	120	165	67
IOCL-BR	686	31	244	275	40
IOCL-MR	655	49	397	446	68
IOCL-PR	1770	365	200	565	32
IOCL-HR	633	39	88	127	20
IOCL-PDR	1781	458	1323	1781	100
CPCL	1317	112	12	124	9
HPCL-M	348	64	29	93	27
HPC-V	722	304	28	332	46
BPCL-K	1989	628	140	768	39
Total	10266	2245	1755	4000	39

EIL informed that the current fresh water consumption in PSU refineries is in the range of 0.8-2.5 M³/MT of crude processed against the world's best norms of 0.6 M³/MT. The target of 0.6 M³/MT can be achieved by implementation of schemes as indicated in the draft report.

ED, CHT informed that a meeting shall be called at CHT post finalization and submission of report by EIL, to finalize refinery wise initiatives along with milestones based implementation plan.

ED, CHT also informed that the roadmap for water reduction shall be completed by Feb'20 in case the final report is submitted by Dec'19.

Dir, IIP indicated that IIP has developed the technology for recovery of salts from brine especially for RO Rejects and concentrate solutions. The same has been demonstrated in distilleries.

EC advised EIL that RO rejects data may be provided to IIP, Dehradun along with expected quantity of brine. IIP shall furnish a complete solution based on the same.

Action By: EIL/refineries/CHT/IIP

1.3 Performance Benchmarking Study of PSU refineries for 2018 Cycle and plan for 2020

CHT presented the status as under:

	Activity	Date	Status
1	Data Co-ordination Seminar	29-30 th Nov 2018	Completed
2	Initial Data Submission	15 th Mar 2019	Completed
3	Data review & validation by M/s Solomon	15 th Jun 2019	Completed
4	Initial Study Results	Mid Aug 2019	Completed
5	Final Study Results	Mid Oct 2019	Completed
6	Workshop & Study Presentations	Nov 2019	Presentations done: - HPCL, BPCL, MRPL, NRL / IOCL & CPCL - MoP&NG - "How to use data" Workshop
7	Summary and Refinery specific Reports	Dec 2019	

CHT informed that a meeting with M/S Solomon Associates was held on 19th Nov'19 where following points were discussed:

1. Solomon shall provide refinery wise steam reduction targets along-with ideas.
 - a. Once refineries identify initiatives, workshops shall be held at CHT where Solomon, CHT and respective refineries shall deliberate on the ideas.
 - b. The workshop shall be organized by Solomon on chargeable basis.
 - c. Post finalization of path-forward, quarterly review shall be carried out.
2. Solomon shall provide a methodology with an objective to achieve best quartile right from the pre Licensor selection stage.
3. Solomon has agreed to include water benchmarking also in 2020 study.
4. All refineries have confirmed participation in 2020 cycle study by M/s Solomon.

Dir (R) HPCL informed that HPCL is in the process of having a deliberation with Solomon on global benchmark practices especially in the area of maintenance / Instrumentation and Projects.

Dir (T), NRL informed that NRL has engaged McKinsey which in turn has hired Solomon to review their projects ensuring Q1D1 approach for efficient configuration as well as implementation.

EC took a note of the above.

Action by: CHT/Refineries

1.4 Performance Benchmarking Study of Pipelines

CHT presented the status of major milestones as under:

	Activity	Schedule	Actual
1	Data Co-ordination Seminar	21 & 22 Feb 2019	Completed
2	Submission of Data related to facilities	1 st Apr 2019	Completed
3	Submission of Financial Data	31 st May 2019	Completed
4	Data review & validation by M/s Solomon	15 th July 2019	Completed
5	Initial Study Results	15 th Aug 2019	Completed
6	Final Study Results	Sept 2019	Completed
7	Workshop & Study Presentation	Oct 2019	Completed *

* Final Study Result presentation with MoP&NG is due in the last week of Jan'20.

ED, GAIL raised concern on benchmarking of their LPG pipeline with other product pipelines instead of LPG pipelines. He further requested for Solomon presentation to their management exclusively. CHT clarified that exclusive presentation to GAIL management can be done on changeable basis in line with benchmarking of PSU refineries.

EC noted the above and advised GAIL to submit their technical queries to CHT for taking up with M/s Solomon.

1.5 Study on Reduction of Steam Network at Refineries through M/s KBC

EC in its 27th meeting on 9th July'19, advised that KBC may incorporate their major findings pertaining to steam optimization from the ongoing RPIP study, where they are the consultant. M/S KBC has incorporated the same from ongoing RPIP at HPCL (Visakh & Mumbai) & IOCL (Panipat & Mathura) in their final report.

CHT stated that final report along with detailed matrix of identified best practices have been circulated to the refineries for implementation on case to case basis.

EC took a note of the above.

Action by: Refineries / CHT

1.6 Lab Correlation Programme

CHT informed that as advised by EC in its 27th meeting on 9th July'19, Lab Correlation Programme for BS-VI MS & HSD supplied in NCR region was carried out. The samples were drawn from three marketing installations and tested in two R&D Centers, five refineries & three marketing terminals. The study was completed during July to October, 2019. All parameters tested for MS & HSD were within acceptable limit.

EC took a note of the above.

1.7 Feasibility Study by M/s LanzaTech for Ethanol Production from Off-gases

CHT presented the status as under:

Group	Refinery	Ethanol Potential (KTPA)	Offered Price (USD)	Negotiated price (USD) / % Reduction	Current status
1	BPCL-KR	111.0	150,000	142,500 / 5	Based on the joint site visit, KR has obtained internal approval to go ahead with Feasibility Study.
	IOCL-JR	57.2	150,000	110,000 / 27	Based on the joint site visit during 21-22 nd Nov'19, it was found that adequate land is not available. Therefore, JR will not proceed for the study.
2	BORL-Bina	38.5	60,000 each refinery	options	BORL is exploring technological options, to meet minimum requirement of 5 mol % CO in feed for gas Fermentation Technology against 1.56 mol % available in off gases. The same is expected by end of Nov'19.
	IOCL-HR	36.0			No land available. Therefore, HR will not proceed for the study.
	MRPL	35.5			As per revised estimate, ethanol potential is 12 KTPA against 35.5 KTPA. In view of low potential, study may be dropped as it falls in Group 4.
	BPCL-MR	33.6			BPCL MR shall place the order by end of Nov'19.

EC deliberated on the above and advised to drop the study at MRPL in view of Lower potential of ethanol.

Dir (R) MRPL informed that they would like to carry out the study internally.

Action by: BPC-MR/BPC-KR/BORL

1.8 Feasibility Study on Reference Fuel by EIL & IOC R&D

CHT mentioned that stream data for IOC Refineries (Paradip, Mathura, Barauni, Panipat & Gujarat) related to MS & HSD blend components were shared to EIL / IOC R&D. Additional data from BPCL MR/KR was also provided on 13th Nov'19. EIL has further sought data from MRPL, HPCL-V & CPCL.

EC advised EIL to conclude first phase of the study in 4 weeks.

Action by: EIL/CHT/Refineries

1.9 Pradhan Mantri JI-VAN Yojana

CHT informed that Request for Selection (RFS) was issued on 26th Aug'19 for shortlisting of Project Developers to set up 6 Commercial & 5 Demonstration integrated 2G Ethanol Projects under Pradhan Mantri JI-VAN Yojana. Last date for submission of proposals is 22nd Nov'19.

A Committee under the chairmanship of Director (T), EIL has been constituted for reviewing the proposals before putting up to SAC. The meeting has been scheduled on 3rd Dec'19. Recommendations of the Committee shall be put up to SAC in its meeting planned on 13th Dec'19. Subsequently, in-principle approval shall be taken from Governing Council in its meeting proposed in 3rd week of Dec'19.

EC took note of the above.

1.10 Status of completed R&D projects

CHT informed that GC, in its 37th meeting on 8th Aug'19, advised CHT to compile the list of R&D projects funded by CHT/OIDB since inception to review the status including benefits accrued, funds involved and commercialization, etc. Accordingly, CHT circulated the list of completed projects to the concerned agencies for the latest status. The status was updated by them. Matrix is as under:

S.N.	Project Category	Commercialized Projects	Projects having Potential for Commercialization	Fundamental Research	Study	Projects dropped	Total
1	Bio-Process (B)	1	0	1	0	1	3
2	Catalyst (C)	1	10	0	0	0	11
3	Environment (E)	0	0	6	4	0	10
4	Hardware (H)	10	0	2	3	2	17
5	Lubricant (L)	0	0	2	4	0	6
6	Simulation / Modelling (M)	1	0	4	2	0	7
7	Product (P)	0	0	1	1	0	2
8	Study (S)	1	0	1	5	0	7
9	Technology Development (T)	3	6	1	4	2	16
10	Wax (W)	0	0	2	2	0	4
	Total	17	16	20	25	5	83
CHT Expenditure, Rs crore		40.36	10.35	20.12	9.91	2.20	82.95
Total Expenditure, Rs crore		67.87	11.23	20.45	12.85	2.32	114.72

EC took note of the above.

1.11 CHT Budget

CHT presented RBE for FY 2019-20 and BE for FY 2020-21 as under:

	Particulars	2018-19	2019-20			2020-21
		Actual	BE	RBE	April-Nov	BE
A	Revenue Expenditure					
	Salary	9.00	11.00	9.26	5.41	12.00
	Other than Salary	1.67	2.50	1.77	0.99	2.00
	Sub-total (A)	10.67	13.50	11.03	6.41	14.00
B	Capital Expenditure	0.08	0.10	0.20	0.09	0.37
C	Special Studies	2.77	9.07	9.76	2.20	5.00
D	R&D Projects					
	R&D Projects	10.43	5.31	4.40	0.31	6.65
E	TOTAL EXPENDITURE (A+B+C+D)	23.95	27.98	25.39	9.01	26.02
F	HCF	0.86	21.99	9.17	0.05	27.61
G	PM JI-VAN Yojana					303.00
H	R&D + HCF	11.29	27.30	13.57	0.36	34.26

CHT raised concern regarding lower expenditure in R&D projects due to challenges in some of the projects viz. CTL, Biomass Hydro-pyrolysis, H₂ & CNT production through CNG decomposition, etc.

OIDB indicated that based on actual expenditure till date, RBE seems to be higher. CHT clarified that RBE is prepared based on the milestone payments in Special studies and commitment given by Participating Agencies of R&D projects.

EC deliberated and recommended the above budget for approval of Governing Council.

EC advised CHT to adhere with RBE proposed through concerned agencies.

The meeting ended with thanks to Chair & participants.

28th Meeting of the Executive Committee (EC) of Centre for High Technology (CHT) held on 22nd Nov'19 in the Conference Hall, PCRA, New Delhi

Participants

MoP&NG

1. Shri Sunil Kumar, JS(R) - Chair

OIDB

2. Shri Gautam Sen, FA&CAO

IOCL

3. Shri S.M Vaidya, Director (R)

BPCL

4. Shri Subramoni Iyer CGM (O&C)
5. Shri Chacko M Jose, GM (Tech)
6. Vishwas Khobragade, DGM (EA to D-R)

HPCL

7. Shri V.S. Shenoy, Director (R)
8. Shri G.S. Joshi, GM (RCD)

GAIL

9. Shri D.V. Shastry, Executive Director

IIP

10. Dr. Anjan Ray, Director

MRPL

11. Shri M. Vinayakumar, Director (R)

CPCL

12. Shri S.N. Pandey, MD
13. Shri K.R.D Pradeep Chand, DGM (PE)

NRL

14. Shri B.J. Phukan, Director (T)
15. Shri N. Borthakur, SCGM (CA)

EIL

16. Shri L.K. Vijh, Director (T)
17. Ms Vartika Shukla, Executive Director (T)

CHT

18. Shri K.K. Jain, Executive Director
19. Shri P. Raman, Director
20. Shri S.R. Kulkarni, Add. Director
21. Shri Sumit Jha, Joint Director
22. Shri S.K. Varshney, Joint Director



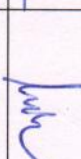
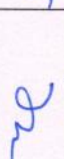



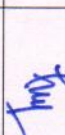

List of Participants

28th meeting of the Executive Committee of CHT held at 1200 hours on 22nd November 2019 at PCRA New Delhi

Sl.No.	Name, S/Shri	Org.	Designation	E-Mail	Mobile	Signature
1.	K.K. Jau	CHT	ED	ED-CHT@CHT.CO.IN	858697595	K.K. Jau
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4.	Vinod S. Shetty					Vinod S. Shetty
5.	S.N. Pandey	CPCU	MD	snpandey@cpcu.co.in	8360090011	S.N. Pandey
6.	M. Vinayakumar	MRL	Dir - Regulatory	vinay@mrpl.co.in	9448495199	M. Vinayakumar
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8.	Anjan Ray	ORIL-IP	Director	director@ip.res.in	9810208092	Anjan Ray
9.	D.V. Shastri	ED GAIL	ED	dushastri@gail.co.in	9818231652	D.V. Shastri

List of Participants

28th meeting of the Executive Committee of CHT held at 1200 hours on 22nd November 2019 at PCRA New Delhi

S.No.	Name, S/Shri	Org.	Designation	E-Mail	Mobile	Signature
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