MINUTES OF THE 17TH MEETING OF THE RE-CONSTITUTED EXPERT APPRAISAL COMMITTEE (EAC) ON ENVIRONMENTAL IMPACT ASSESSMENT (EIA) OF THERMAL POWER PROJECTS HELD ON 30TH NOVEMBER, 2021

The 17th Meeting of the re-constituted EAC (Thermal Power) organized by the Ministry of Environment, Forest & Climate Change, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi was held on 30th November, 2021 through video conference under the Chairmanship of Shri Gururaj P. Kundargi. The list of Members participated in the meeting is at **Annexure**.

Agenda Item No. 17.1: Confirmation of the Minutes of the 16th EAC meeting

The Minutes of the 16th EAC (Thermal Power) meeting held on 18th November, 2021 were confirmed in the meeting.

Agenda Item No. 17.2

North Chennai TPP Stage – III (1x800 MW) in an area of 76.9ha (190acre) located at Village Ennore & Puzhudivakkam, Tehsil Ponneri, District Thiruvallur, Tamil Nadu by M/s Tamil Nadu Generation & Distribution Corporation Ltd. (TANGEDCO) – Amendment in Environmental Clearance – reg.

[Proposal No. IA/TN/THE/237995/2021; F. No. J -13012/ 14 /2012- IA.II (T)]

17.2.1 The proposal is for amendment in Environmental Clearance to North Chennai TPP Stage – III (1x800 MW) in an area of 76.9 ha (190 acre) located at Village Ennore & Puzhudivakkam, Tehsil Ponneri, District Thiruvallur, Tamil Nadu by M/s TANGEDCO.

17.2.2 The details of the project submitted by project proponent and ascertained from the document submitted are mentioned below:

(i) Environmental Clearance (EC) and Coastal Regulation Zone (CRZ) was accorded by MoEF&CC vide letter dated 20th January, 2016 to 1x800 MW Supercritical Coal Based Thermal Power Plant Stage III at Villages Ennore & Puzhudivakkam, Taluk Ponneri, District Thiruvallur, Tamil Nadu by M/s TANGEDCO.

(ii) M/s TANGEDCO has established 3x210 MW North Chennai Thermal Power Station Stage I during 1995 and 2 x 600 MW Stage-II during 2014 in NCTPS Complex. An area of 190 acres (76.88 Ha) of barren land is available within the existing North Chennai Thermal Power Station (NCTPS).

(iii) In order to offset the power demand of Tamil Nadu TANGEDCO has proposed to set up a coal based 1 x 800 MW super critical thermal power plant, Stage III within the NCTPS complex

using the existing infrastructure facilities viz., Cooling water channel and coal handling system.

(iv) **Water Requirement:** To cater the water requirement of NCTPS Stage I & II, sea water is presently drawn through two separate channels from Ennore Port Basin. The drawal capacity of the channel for stage II is 65 cumec. After the drawal of Cooling water for NCTPS stage II TPP (2x600 MW) and Ennore SEZ TPP (2x660 MW), around 10 cumec is available. This balance quantity is proposed for the cooling water requirement of NCTPS stage III TPP adopting Natural Draft cooling tower system. Desalination plant will be established to obtain raw water for the plant purposes.

The total water required for the proposed project is 1,65,600 m3/day and the same will be drawn from Ennore Port Basin through existing intake channel of NCTPS Stage II (Bay of Bengal). The potable water required (9000 m3/day) will be met from the proposed RO based desalination plant within the power plant. The waste water 1,22,873 m3/day mainly from cooling tower blow down, DS plant and RO reject will be disposed into sea after meeting sea disposal standards, whereas wastewater coming from domestic activities and service water which is around 706 m3/day will be treated in STP and reused for greenbelt development

(v) **Fuel requirement**: 100% Imported Coal from Indonesia will be transported through pipe conveyor from proposed Coal Berth 3 of Ennore Port located adjacent to NCTPS Complex of TANGEDCO. Hence there is no land acquisition/Right of Way (ROW) for Coal conveyor/Cooling water system.

The Coal requirement for the project is 2.09 MTPA based on GCV of coal as 6000 kcal/kg. Daily coal requirement is 6720 TPD. Ash content is 12% and sulphur content is 0.80 %. The estimated total ash generation from the proposed stage III unit is 806.4 TPD, out of that Fly ash generated 645.1 TPD, Bottom ash 161.3 TPD. The ash handling system envisages dry extraction and disposal of bottom ash and fly ash. Provision shall be kept to extract entire bottom ash in wet form for disposal in ash dyke and conveying through pipeline to the existing ash dyke of NCTPS located at 4.56 km from the captioned Power project as an emergency measure.

(vi) 100% fly ash will be utilized as per the MOEF notification SO 2804 (E) dt 3.11.2009. Necessary MoU for lifting the entire ash produced from the proposed NCTPP Stage III (1X800 MW) has been executed with M/s Dalmia Cements (Bharat) Ltd., Trichy, Tamil Nadu on 14.10.2015.

(vii) To comply with the environmental protection measures budgetary provision for Environmental Protection and Safety measures to the tune of Rs.480 Crores towards capital cost and Rs.48 Cr for recurring expenditure. The project will enhance the socio economic

improvement as Rs.10.0 Crores is being pumped to CSR activities as capital cost and Rs 2.0 Crores of recurring expenses per annum apart from indirect employment and project investment.

(viii) Recently, an application [No.122 of 2021 dt.7.6.21] has been filed by one Thiru. R.Ravimaran, Ennore, before the Hon'ble NGT (SZ) at Chennai against the NCTPP-III for the construction of ash slurry pipe lines.

(ix) Further, a suo moto case (No.162/2021) has been registered by the Tribunal against NCTPS Stage-I, Stage-II, NCTPP Stage-III, and Ennore SEZ TPP project based on the news item published in the Newspaper, Times of India, Chennai Edition dt.1.7.21. The Hon'ble NGT(SZ) has also constituted a Committee and instructed the Committee to look into the issues and submit a report. Accordingly, the NGT Committee submitted their report which states under the heading "Findings of the Committee"

"It is inferred that the NCTPS Stage-III has not obtained CRZ clearance for laying of ash slurry pipeline or for laying new ash pipeline corridor in the CRZ area."

Also, under heading "Recommendation of the Committee," in par.8, it has been mentioned as *"The TANGEDCO shall resume the activities pertaining to NCTPS Stage-III and Ennore SEZ power plants within CRZ area in Kosasthalaiyar River/Buckingham Canal/Backwaters only after obtaining amendment to the existing CRZ clearance from MoEF&CC"."*

(x) Project proponent (PP) while applying for EC &CRZ of the captioned power project, it has been proposed to collect both the fly ash and bottom ash in dry form and proposed to pump the ash in the form of slurry to the existing ash dyke of NCTPS in case of emergency. The same has also been detailed in EIA report and Public hearing minutes of meeting besides being shown in the CRZ mapping. The same was submitted to MOEF&CC/New Delhi as additional documents in the year 2015.

17.2.3 As per the directions of Hon'ble NGT (SZ), PP submitted the proposal no. IA/TN/THE/237995/2021 dated 15th November, 2021 for amendment in the EC and CRZ clearance of the project incorporating the provision for laying Ash slurry pipeline for the proposed NCTPS stage III.

PP submitted that since it is an expansion project of NCTPS I & II and to comply the conditions of EC to reuse of supernatant water from ash dyke for slurry making and for disposal of ash in the form of ash slurry in case of emergency during operation of Power plant, construction of pipe lines are essentially required.

17.2.4 The EAC during deliberations noted the following:

The proposal is for grant of amendment Environmental Clearance to North Chennai TPP Stage – III (1x800 MW) in an area of 76.9ha (190acre) located at Village Ennore & Puzhudivakkam, Tehsil Ponneri, District Thiruvallur, Tamil Nadu by M/s TANGEDCO.

As per finding of Committee report which was constituted by Hon'ble NGT (SZ) mentioned that PP has constructed ash slurry pipeline for North Chennai Thermal Power Station Stage III without taking amendment in EC & CRZ clearance. Therefore, Hon'ble NGT has directed to take necessary amendment for construction of ash slurry pipeline for NCTPS Stage III. The EAC also noted the representation received about the project.

The EAC noted that ash slurry pipeline of North Chennai Thermal Power Station (NCTPS) Stage I & Stage II are older than 25 years which are not managed properly and ash slurry is leaking into water stream. During the meeting, the EAC noted that PP has given commitment that repairing of ash slurry pipeline will be completed by February, 2022.

The EAC noted the submission made by the PP during discussion that there is a requirement of ash slurry pipeline, but it will be used rarely, as PP has to maintain 100% ash utilization throughout the year and dumping of ash in ash dyke will be used in case of emergency. Further, EAC noted that FGD for Stage I & Stage II are not installed for controlling of SO_x in the plant.

17.2.4 *The EAC after detailed deliberations observed that PP need to obtain amendment in CRZ clearance from Ministry as per direction of committee formed by Hon'ble NGT. The PP need to submit the complete proposal along with information on following points:*

i. *Recommendations of the SCZMA and CRZ division in the Ministry.*
ii. *Impact Assessment plan and mitigation measures shall be prepared for all along the route for laying ash pipeline shall be submitted.*
iii. *Impact Assessment report on Mangrove forests and plan to conserve Mangrove forest shall be submitted.*
iv. *Complete plan and time lime to install FGD's for all of Stages of NCTPS shall be submitted.*
v. *Ash generation and its utilization status in last 5 years of Stage-I and Stage-II along with its utilization plan for next five years shall be submitted.*
vi. *Implementation status of findings of NGT order shall be submitted.*
vii. *Certified compliance report from Ministry's Regional office of previous ECs of Stage –I and Stage -II.*
viii. *Disaster management plan especially in terms of leakage of ash slurry pipelined.*
ix. *Necessary local permission for laying as slurry pipeline need to be obtained and shall be submitted.*
x. *Quality of waste water dumping into the water and impact on pisciculture in river stream need to assess and its mitigation measure shall be submitted.*

*The proposal was **deferred** on above lines.*

Agenda Item No. 17.3:

3x600 MW Coal Based Thermal Power Plant (Phase-II) in an area of 828.46ha (already acquired) located at Village Nariyara, Tehsil Akaltara, Dist. Janjgir-Champa, in Chhattisgarh by M/s KSK Mahanadi Power Company Limited – Reconsideration of Terms of Reference – reg.

[Proposal No. IA/CG/THE/209699/2021; F. No. J-13012/44/2008-IA.I (T)]

17.3.1 The proposal is for grant of Terms of Reference to 3x600 MW Coal Based Thermal Power Plant (Phase-II) in an area of 828.46ha (already acquired) located at Village Nariyara, Tehsil Akaltara, Dist. Janjgir-Champa, in Chhattisgarh by M/s KSK Mahanadi Power Company Limited.

17.3.2 The EAC during deliberations noted the following:

Earlier the proposal for Terms of Reference was considered by the EAC in its 12th meeting held on 14th June, 2021.

The EAC observed that Environmental Clearance (EC) granted by the Ministry on 19.10.2009 for 6x600 MW power generation capacity; however, PP could commission only 3X600 MW power generation capacity within the validity period as prescribed under EIA Notification, 2006 as amended. PP has submitted application for fresh TOR for the capacity of 3X600 MW which could not be commissioned as part of EC dated 19.10.2009 with exemption from Public hearing in terms of provisions of the MoEF&CC Notification S. O. 1247(E) dated 18th March, 2021.

The project was deferred by the EAC seeking additional information regarding factual status of the progress made on site through site visit by IRO, MoEF&CC for further consideration of the proposal.

Now, PP has submitted the compliance of observation of EAC by submitting Certified Compliance Report from Ministry's Integrated Regional Office, Raipur vide letter no. 4-15/2009(Env)/348 dated 11/11/2021 based on site visit conducted on 4th August, 2021. Following are the observations noted by the IRO during site visit and action plan was submitted by PP :

i. Project authorities are directed to undertake the plantation of remaining saplings and ATR shall be submitted to RO office on quarterly basis (Specific Condition - VI & XVII J- 13012/44/2008-IA (T), 19.10.2009).

   Reply from PP: The total area (828.46 hectares) of the project site, 33% area (277 hectares) is being developed as green belt all along the boundary of the plant, in block and other available spaces.

ii. Project authorities are directed to install the solar power plant as per the stipulation condition and ATR shall be submitted to this office (J-13012/44/2008-IA.II (T), 23.09.2015)\

Reply from PP: M/s KMPCL has identified roof top area of 90887.93 Sq. mts which can be utilized to install Solar Power Plant of 4-MW. Process of obtaining the bids from vendors is in advanced stage. The solar power plant will be installed in phased manner from March 2022 and will be completed within 3 years time.

iii. Project authorities are directed to conduct a long-term study of radio activity and heavy metals contents on coal as stipulated and report of the same shall be submitted to this office (J-13012/44/2008-IA.II (T), 23.09.2015).

Reply from PP: Samples of Coal, Fly Ash and Bottom Ash were submitted to Modern Test Center, Neelanchal Nagar, 3rd lane, Berhampur, Ganjam, Odisha – 760010 and report will be submitted by them by 17th December, 2021. Further, NGRI will provide the long term study of radio activity and heavy metal content and report will be in mid of the year 2023.

iv. Project authorities didn't submit the imported coal analysis reports to this office (J-13012/44/2008-IA.II (T), 26.05.2016)

Reply from PP: KMPCL has stopped using imported coal since 2019. However, Coal analysis report of imported coal during 2017 has been submitted.

v. Project authorities are directed to conduct the Bioaccumulation and bio-biomagnifications tests as per stipulated condition and the report of the same shall be submitted to this office (F.No22-l3/2019-IA.III, 280.08.2019).

Reply from PP: The scope of work and the institution is being finalized. Will be initiated in December 2021 and the report will be submitted by June 2022.

vi. On the day of monitoring, it was observed that a fly has been dumped back side other railway line (Fig. 7), PA has been directed to utilize the fly ash as per the Fly ash notification issued by the Ministry and A TR in this regard shall be submitted to this office.

Reply from PP: Fly ash has been removed and deposited in ash dyke

17.3.4 *The EAC, after detailed deliberations observed that there are certain non-compliances and partial compliance of EC conditions as per certified compliance status report submitted by IRO, Raipur. The PP has submitted the Action Taken Report/Plan for the observed non-compliances. EAC desired that compliance of EC conditions shall be done with strict timeline.*

Further, EAC noted that Percentage of physical construction of project, on the basis of which exemption of Public Hearing has to be considered, is not mentioned specifically in the IRO Report. It was noted that as per Ministry's Notification S.O. 1247(E) dated 18.03.2021 exemption of public

hearing can be considered to the project which has obtained EC earlier and could not complete within the stipulated time but the project has been implemented not less than fifty percentage in its physical form or construction and accordingly applied for denovo proposal. However, since IRO report has not made any comment on percentage of project completed as desired by the EAC in its previous meeting, it was decided to conduct site visit by EAC sub-committee comprising following members to have factual status on progress made on site by the PP, so that EAC can examine the request for exemption from further public hearing:

i. *Shri Suramya Vora-Chairman*
ii. *Dr. Santosh Kumar*
iii. *Shri M. P. Singh, Representative of CEA*
iv. *Representative from MoEF&CC*

*The proposal was **deferred** for submission on above lines.*

Agenda Item No. 17.4:

120 MW CCGT Power Plant in an area of 4.5 ha located at village Manikyanagar (Rokhia), Tehsil Valuarchar, District Sepahijala, Tripura by M/s Tripura State Electricity Corporation Limited – Terms of Reference – reg.

[Proposal No. IA/TR/THE/239146/2021; F. No. J-13012/3/2021-IA.I (T)]

17.4.1 The proposal is for grant of Terms of Reference to 120 MW CCGT Power Plant in an area of 4.5 ha located at village Manikyanagar (Rokhia), Tehsil Valuarchar, District Sepahijala, Tripura by M/s Tripura State Electricity Corporation Limited.

17.4.2 The details of the project submitted by project proponent and ascertained from the document submitted are mentioned below:

i. M/s Tripura Power Generation Limited (TPGL) decided to set up technologically advanced power generation facility within its premises of Rokhia to provide reliable & quality power to the Customer.

ii. The Combined Cycle Power Plant (CCPP), will have generating capacity of around 120 MW which will supply power to TPGL Consumers and Grid at a voltage level of 132/66 KV in the existing network. The generated power from the plant will be evacuated through 132 kV switchyard which in turn will be connected to the existing 132 kV switchyard in the area to supply power to the TPGL consumers.

iii. The proposed site is to be located at Rokhia in the district of Sepahijala (village

Manikyanagar, PS. Kalamchoura, district Sepahijala - 799102, Tripura. The nearest town is Bishalgarh which is around 13 km from the site via National Highway (NH) - 8. Project site lies about 35 km from Agartala where the nearest airport - MBH Agartala – is located, which is about 45 km from site. The nearest railway station is Bishalgarh which is connected to Guwahati by Broad Gauge line. The Site is 3.25 km from India – Bangladesh Border.

iv. The fuel of the power plant will be natural gas which will be available from GAIL. The gas turbine will be run with the natural gas and a quantity of 0.58 MMSCMD has been allocated for this CCGT Plant.

v. The project will be provided with air cooled condenser for cooling the exhaust steam of the steam turbine. The other water requirement of the plant will be around 20 m3/hr. which will be met with groundwater. For this purpose 2X100% bore well water will be provided in the project.

vi. The balance of plant equipment required for the project will be provided. These will consist of raw water system, closed cycle cooling water system, fire water system, compressed air system, service and drinking water system, HVAC system, effluent treatment system etc.

vii. A state-of-the-art DCS control system will be provided to control the plant operation efficiently from the control room.

viii. The project will be funded by ADB based on the agreement between TPGL and ADB.

ix. The salient features of the project are given below**:**

S. No.	**Items**	**Details**
1.	Whether it is a violation case and application is being submitted under Notification No. S.O 804E dated 14.03.2017 and read with amendment vide notification dated08.03.2018	No
2.	Proposed capacity/ area/ length/ tonnage to be handled/ command area/ lease area/ number of wells tobe drilled	Plot area: 45000 m^2 Built Up Area: 24600 m^2 Open Space: 550 m^2 Road & Paring Area: 4920 m^2Green Belt Area : 14930 m^2
3.	New / Expansion / Modernization	New
4.	Does it attract the general condition?If Yes, please specify.	Yes, Project lies within 5 km from India – BangladeshInternational Boundary

<table>
<tr><td>5.</td><td>Location</td><td><table>
<tr><th>Point</th><th>Latitude</th><th>Longitude</th></tr>
<tr><td>A</td><td>23°37'25.03"N</td><td>91°11'43.18"E</td></tr>
<tr><td>B</td><td>23°37'27.11"N</td><td>91°11'48.71"E</td></tr>
<tr><td>C</td><td>23°37'25.70"N</td><td>91°11'52.93"E</td></tr>
<tr><td>D</td><td>23°37'20.29"N</td><td>91°11'50.72"E</td></tr>
<tr><td>E</td><td>23°37'20.74"N</td><td>91°11'43.51"E</td></tr>
<tr><td>F</td><td>23°37'21.42"N</td><td>91°11'42.86"E</td></tr>
</table></td></tr>
<tr><td>6</td><td>Details of Alternatives Sites examined, if any. Location of these sites should be shown on a Topo sheet</td><td>None, Not Applicable</td></tr>
<tr><td></td><td>The Forest (Conservation) Act, 1980?, The Wildlife (Protection) Act, 1972?, The C.R.Z Notification, 1991?</td><td>Not Applicable</td></tr>
<tr><td>7</td><td>Project Cost</td><td>845.36 Cr.</td></tr>
<tr><td>8</td><td>Forest land involved (hectares)</td><td>No</td></tr>
</table>

x. **Land requirement:** It is estimated that about 4.5 hectares of land will be required for the proposed 120 MW CCPP. The land required for the proposed project is owned by TPGL. Sepahijala Wildlife Sanctuary lies 13.6 km towardsNW of Project site. Boxanagar Stupa Complex – 3.0 km WSW of Project site.

xi. **Green Belt:** Total greenbelt will be on 1.493 Hectare (total 33% of total plot area).

xii. **Employment:** Phase-wise employment generated due to the proposed project is summarized below:

Phase	Temporary	Permanent	Total
Construction	350 (EPC Contractor)	30 (TPGL)	380
Operation	20 (Vendor)	78 (TPGL)	98
Total	370	108	478

xiii. **Project cost:** The total cost of project for the construction of the proposed 120 MW CCGT Power Plant at Rokhia is expected to be about Rs.845.36 Crores.

xiv. **R & R:** Not applicable for this Project as land is already in possession of TPGL. There is no displacement of population and / or structures.

xv. It was submitted and requested by PP that power generated from proposed power plant has an international commitment/obligation and also funding for Asian Development Bank has been approved.

17.4.3 *The EAC after detailed deliberations observed that the proposed project lies within the area of existing 3x21 MW Gas based Thermal Power Station, which has violated the provisions of the EIA Notification, 2006 and presently the same is under consideration for grant of TOR for regularization of Environmental Clearances under violation category. So, it need to be examined that whether, the present proposal can be considered as an independent/fresh proposal. Therefore, EAC recommended to seek comments of EIA policy sector of the Ministry in this regard.*

The proposal was ***deferred*** *on above lines.*

Agenda Item No. 17.5:
Expansion of gas/liquid fuel-based Captive Power Plant Projects from 2880 MW go 5880 MW (i.e increase in 3000 MW) in an area of 14.3 Ha at Jamnagar Manufacturing Division (JMD) located at village Motikhavdi, Tehsil Lalpur, District Jamnagar (Gujarat) by M/s Reliance Industries Limited – Terms of Reference - reg.

[Proposal No. IA/GJ/THE/239074/2021; F. No. J-13012/4/2021-IA.I (T)]

17.5.1 The proposal is for grant of Terms of Reference to Expansion of gas/liquid fuel-based Captive Power Plant Projects from 2880 MW go 5880 MW (i.e increase in 3000 MW) in an area of 14.3 Ha at Jamnagar Manufacturing Division (JMD) located at village Motikhavdi, Tehsil Lalpur, District Jamnagar (Gujarat) by M/s Reliance Industries Limited

17.5.2 The details of the project submitted by project proponent and ascertained from the document submitted are mentioned below:

i. Reliance Industries Limited (RIL) operates an integrated petroleum refinery and petrochemical complex at Jamnagar Manufacturing Division (JMD), at Motikhavdi Village, Jamnagar District, Gujarat, referred to as the Jamnagar supersite, which includes associated utilities, offsites and infrastructure facilities.
ii. The complex is a prime example of cluster development, which refines crude oil to produce various petroleum products and petrochemical feedstocks and products, comprising of the following interlinked clusters:
    - Domestic Tariff Area or DTA Refinery
    - Special Economic Zone or SEZ Refinery
    - Petrochemical complex
    - Gasification complex
    - Utilities, offsites and infrastructure facilities

iii. Captive power plant as an integral part of expansion projects at Jamnagar till date is as follows:

Sr.No	Year	CPP Capacity
1	1995	340 MW
2	2005	340 MW to 780 MW
3	2010	2100 MW
Total		**2880**

iv. Power generating capacity as per CTO – 2017 MW

v. The proposed increase in Power generation capacity by 3000 MW using gas/ liquid fuels, will be set up in an area of ~ 14.3 hectares of the total 809.4 hectares of vacant barren land in possession of RIL, which is earmarked for the proposed projects at the JMD complex. There is no forest land involved in proposed project.

vi. The nearest town is Jamnagar which is 30 Km from the site and railway station is Kanalus which is 3 Km from the proposed site. There is no litigation pending against the proposed project and land

vii. Power requirement during the construction phase is available within the complex. Gas Turbines (GTs) and steam turbine generators (STGs) are proposed to be used for generation of power. Heat Recovery Steam Generators (HRSG) attached to gas turbines and auxiliary boilers will produce the required steam for steam turbines and plant use. The power requirement will be met by installing Gas Turbines and STGs.

viii. The water requirement for the proposed oil-to-chemical project, including the proposed captive power plant, will be sourced from the sea water desalination facility of capacity 25,000 m3/hour, which is proposed to be set up. The proposed CPP will require ~3000 m3/h of water. No ground/surface water will be used for the proposed project

ix. The estimated capital expenditure for the proposed oil-to-chemical project, including the proposed power plant, is Rs. 70,000 Crore.

x. Baseline environmental monitoring has been carried out by M/s NEERI, Nagpur during winter season of 2020 to establish the baseline status of the environment in the study area within 10 km from the project site.

xi. The proposed power plants will be operated mainly on gaseous fuel (Natural Gas / Refinery Fuel Gas / Syngas from gasification / re-gasified LNG) with low sulphur liquid fuel to be used to the extent necessary, in case of non-availability of gaseous fuel. The emissions from the power plant will be well within the stipulated standards. The NOx emissions will be controlled by using low NOx burners and establishing standard operating procedures for the units.

xii. The hazardous waste generation (mainly used oil) will be minimized and disposed as per the Hazardous and Other Wastes Rules, 2016. RIL JMD's established Environmental Management System will be extended to cover the proposed projects.

xiii. The proposed project will generate direct and indirect employment opportunities as well as create opportunities for ancillaries and other downstream manufacturing and supporting industries.

xiv. One complete season site specific meteorological and AAQ data (except monsoon season) as per latest MoEF&CC Notification shall be collected and the dates of monitoring shall be recorded. The parameters to be covered for AAQ shall include PM10, PM2.5, SO2, NOx, CO and Hg. The location of the monitoring stations should be so decided so as to take into consideration the upwind direction, pre-dominant downwind direction, other dominant directions, habitation and sensitive receptors. There should be at least one monitoring station each in the upwind and in the pre – dominant downwind direction at a location where maximum ground level concentration is likely to occur.

xv. Cumulative impacts of all sources of emissions including handling and transportation of existing and proposed projects on the environment of the area shall be assessed in detail. Details of the Model used and the input data used for modeling shall also be provided. The air quality contours should be plotted on a location map showing the location of project site, habitation nearby, sensitive receptors, if any. The windrose and isopleths should also be shown on the location map. The cumulative study should also include impacts on water, soil and socio-economics.

xvi. EMP to mitigate the adverse impacts due to the project along with item - wise cost of its implementation in a time bound manner shall be specified.

xvii. A Disaster Management Plan (DMP) along with risk assessment study including fire and explosion issues due to storage and use of fuel should be carried out. It should take into account the maximum inventory of storage at site at any point of time. The risk contours should be plotted on the plant layout map clearly showing which of the proposed activities would be affected in case of an accident taking place. Based on the same, proposed safeguard measures should be provided. Measures to guard against fire hazards should also be invariably provided. Mock drills shall be suitably carried out from time to time to check the efficiency of the plans drawn.

17.5.3 The EAC during deliberations noted the following:

The instant project is for Terms of Reference for gas/liquid based Thermal power plant proposed in Refinery complex. The proposed expansion in capacity of power plant (2880 MT to 5880 MW) is one the component of overall expansion of the Jamnagar Refinery Complex.

It was noted the Project proponent has not submitted Pre-Feasibility Report particularly for power plant and no details regarding number of units/turbines in the proposal. Project features interms of capacity, number of units, Percentage of fuel (gas/liquid), area has not been detailed out. Also,

present installed capacity in terms of percentage fuel, number of units and current area was presented.

17.5.4. *The EAC, after detailed deliberation observed that project proponent has not submitted adequate information such as Pre-Feasibility Report (PFR), project features in terms of capacity, number of unit, percentage of fuels to be used, area and expansion area etc. EAC desired that all these details are essentially required for examination of proposal for grant of TOR to conduct EIA study for any Power Plant. Considering all the facts of the project as presented by the project proponent desired additional information from the project proponent as mentioned below:*

i. *PP shall submit Pre-Feasiblitiy Report (PFR) for Thermal power plant and same shall be submitted including proposed baseline data and impact on marine life.*
ii. *PP shall revise Form- 1 on PARIVESH Portal and further submit with proper and approximate data of Environment sensitivity parameters.*
iii. *PP shall submit breakup of 3000 MW capacity plant with specified area, number of units, percentage and source of fuel to be used etc in detail.*
iv. *PP shall submit current data of continuous ambient air quality and manual air quality data and its comparison with annual average data.*
v. *PP shall submit comparative chart including previous ECs granted with number of Gas Turbines/Steam Turbines and its capacity (as detailed in EC letters and in EIA/EMP report) vis-à-vis with their existing capacity and CTO granted for DTA, SEZ area and C2 Complex them with timeline and desired expansion capacity*
vi. *Scope for in-house generation of Renewable energy to cater the local needs shall be studied and a detailed plan shall be submitted emphasizing the past experience.*
vii. *Current practice of disposal plan of brine shall be prepared and technologies available for recovering resources from brine shall studied considering Brine as a resource not as a waste.*
viii. *PP shall submit HFL of river and level of dam which is touching the boundary of the project and details regarding whether it is perennial or non-perennial and source of contamination*
ix. *PP shall submit number of villages present in the buffer zone and 1 km of the project boundary with details of current impact on nearby villages.*

*The proposal was **returned** for submission on above lines.*

Agenda Item No. 17.6:

Expansion of 470 MW to 680 MW with an additional 45 MW and Debottlenecking of Existing Petrochemical Complex at Hazira by M/s Reliance Industries Limited – Terms of Reference – reg.

[Proposal No. IA/GJ/THE/238436/2021; F. No. J-13012/5/2021-IA.I (T)]

17.6.1 The proposal is for grant of Terms of Reference for Expansion of 470 MW to 680 MW with

an additional 45 MW and Debottlenecking of Existing Petrochemical Complex at Hazira by M/s Reliance Industries Limited.

17.6.2 The details of the project submitted by project proponent and ascertained from the document submitted are mentioned below:

i. Reliance Industries Ltd (RIL) Hazira Manufacturing Division (HMD) is located within a notified industrial area by Govt. of Gujarat at Hazira in Mora village, Surat District in the state of Gujarat and in operation since 1993.

ii. The Hazira Petrochemical Complex consists of the following units:
   a) Naphtha / Gas Cracker
   b) Petrochemical Plants (BTX, Butadiene, MTBE, PE, PP, PVC)
   c) Fiber Intermediates (PTA, MEG)
   d) Polyester & Elastomer Plants (POY, PSF, SBR, PBR)
   e) Infrastructure Facilities:
      - Captive Power Plant (Gas and coal based) & Utilities
      - Captive Marine Facilities- SPM, Jetties and Diffuser for effluent.
      -Tank Farms

iii. The power requirement of the Hazira Complex is at a maximum level of 330 MW. This power requirement is met by HMD's own captive generation capability.

iv. HMD has two captive power plants – One is gas based (350 MW – Year 1992) and other is coal based (360 MW) which was established in 2016, due to Natural Gas scenario in the country.

v. The EC granted for the coal-based power plant was later amended to "the total installed capacity for captive power generation to 499 MW and the operating power generation to 470 MW". Therefore, the generation capacity of <140 MW has been kept operational at HMD from the gas based CPP, post commissioning of the coal based CCPP. Thus 360 MW coal + 139 MW gas = 499 MW – current capacity maintained at HMD

vi. This has been necessary to cover for the possibility of non-availability of coal-based boilers, due to planned or un-planned outages. The remainder generating capacity of the gas based CPP has been mothballed.

vii. One GT has been shifted to the company's Jamnagar Manufacturing Division as there was a need for one such unit at that location. The other units have been preserved during the time but are not operated. Thus, total gas-based capacity available at HMD is 320 MW.

viii. Total capacity available at HMD = 680 MW (360 + 320 MW) and total capacity maintained at HMD as per EC = 499 MW (360 + 139 MW)

ix. On implementation of the proposed projects, the power requirement at HMD will go up to 599 MW. As the proposed projects will consume power, increasing the demand of the complex to 599 MW and there will be requirement of spare capacity, over and above the actual consumptive load, it is proposed to operationalize 680 MW that can be made available.

x. PP therefore, have included operationalization of balance 181 MW (320-139 MW) of gas based CPP. The total capacity for generation at HMD is proposed to be made available is 680 MW (360 MW coal based CCPP + 320 MW of gas based CPP)

xi. In addition to this power generation capacity the site complex will also be supported by 45 MW of power generated through energy recovery proposals in PTA and CF units.

Point-wise replies submitted by the PP vide email dated 30.11.2021 in response to additional details sought (ADS) by EAC in its 17th meeting are as follows:

Query 1: Last six-monthly monitoring report shall be submitted along with the EC compliance report for HMD

Reply: Monitoring report has been submitted along with the EC compliance report for HMD on 1st June 2021. Period Oct 2020 to March 2021 containing:

i. Stack monitoring report
ii. Ambient Air Quality Monitoring Report
iii. Treated Effluent Quality Report
iv. AAQM trends

Query 2: Submit the chronology of previous ECs with installed capacity received for HMD site and CTO granted.

Reply: Chronology of Environmental Clearances issued to HMD for Captive Power Generation

Issuing Authority	File No / Letter No /Proposal No	Date of Issue of EC	EC Issued for	CaptivePower Plant Details	Status
MoEF	J-11011/12/90-IA-II	31 Jan '92	Setting up of Petrochemical Complex	Mentioned as Integral part of Petrochemical complex	Captive power plant set up

MoEF	J.11011/32/2005-IA (II) - I	30 June '05	Expansion of Petrochemical Complex and CPP	Increase ofcaptive power generation from 290 MW to 380MW	Capacity increased as approved
SEIAA, Gujarat	SEIAA/GUJ/EC/1(d) & 7(e)/3/2015	28 Jan '15	Coal based CCPP and CoalJetty (3.5 MMTPA)	Coal based CCPP - 360MW	Coal Based PP commissioned in Dec 2016
SEIAA, Gujarat	SEIAA/GUJ/EC/1(d)& 7(e)/584/2016	28 Sep '16	Amendment in EC dated 28 Jan '15 to restrict operating power generation from 360 MW to 470 MW	Installed –499 MW Operating –470 MW	Complied*
MoEF &CC	IA/GJ/IND/24200/2014	10 July '17	Debottlenecking and Expansion of Petrochemical Complex	Gas based – 380 MW*	Captive power generation restricted to below 470 MW at all times.

(*)

1. The power generation from captive source is around 320-330 MW which is as per thepower demand from the complex.
2. In addition to coal based power generation @ 360 MW (installed capacity) GTs andSTGs operated to maximum 110 MW capacity.
3. One GT is yet not established though EC is there. One GT shifted to jamnagar complex of the company where it was required. Balance GTs and STGs preserved for proper upkeep. Thus, total gas based installed capacity currently at HMD is (380– 30 – 30 = 320 MW).

Query 3: Wind rose diagram shall be submitted.

Reply: Wind rose diagram has been submitted for period of 1st March, 2021 and 31st May, 2021. Total 2208 hours were calculated and average wind speed noted was 4.02 m/s.

Query 4: Sampling Monitoring Locations with direction and distance, for EIA within 10 Km of site shall be submit.

Reply: Sampling location for following monitoring has been submitted along with snapshot of marked location on google earth:

i. Ambient Air Quality
ii. Soil monitoring locations
iii. Surface water monitoring locations
iv. Ground Water monitoring locations
v. Noise monitoring locations.

17.6.3 The EAC during deliberations noted the following:

The instant proposal for Terms of Reference for expansion in capacity of power plant is present in Petrochemical complex of Hazira Complex.

It has been submitted that PP has already installed the capacity required for expansion however, since CTO was not granted for the said capacity and due to unavailability of gas, the said units were mouthballed. Now, PP desires to reopen and use the installed capacity for its in-house project utilization.

It was noted that Standard Terms of Reference has been electronically generated through PARIVESH Portal to the project vide letter dated 23rd November, 2021. Accordingly, proposal was considered for grant of additional ToR for the proposed project.

17.6.4 *The EAC, after detailed deliberations on the information submitted by the project proponent* ***recommended*** *the proposal for grant of following specific Terms of Reference to expansion of 470 MW to 680 MW with an additional 45 MW and Debottlenecking of Existing Petrochemical Complex at Hazira by M/s Reliance Industries Limited, under the provisions of EIA Notification, 2006 and as amended:*

i. *PP shall prepare Cumulative Impact Assessment considering all the source of pollution within 10 km of buffer zone by collecting fresh one season baseline data (other than data already collected-if any).*
ii. *PP submit mechanism for burning of Biomass, comparison with coal with efficiency and calorific value shall be carried out and how net -zero emission will be achieved to be incorporate in EIA/EMP report.*
iii. *Public Consultation, including public hearing, shall be conducted through concerned SPCB as per the provisions/procedure contained in the EIA Notification, 2006 for information of the stakeholders inviting comments and their redressal.*
iv. *PP shall submit details of source of biomass and MoU for supply for fuel for biomass based power plant.*
v. *PP shall submit action plan with certain time for carbon sequestration for achieving net -zero emission and same shall be incorporate in EIA/EMP report as separate Chapter.*
vi. *PP shall submit Certified compliance report of all previous ECs from Ministry's Integrated Regional Office-Gandhinagar.*

vii. *PP shall explore all alternatives to use Indian coal as a fuel source rather than imported coal for existing coal-based power plant.*

viii. *PP shall submit plan with time line for 100% fly ash utilization, generated from coal based power plant.*

ix. *PP shall submit CRZ clearance and Stage I Forest clearance for forest land (if applicable) for the project.*

x. *PP should submit the real time aerial footage by using Drone and video of the project area.*

xi. *The PP should submit the photograph of monitoring stations & sampling locations. The photograph should bear the date, time, latitude & longitude of the monitoring station/sampling location. In addition to this PP should submit the original test reports and certificates of the labs which will analyze the samples*

xii. *Project proponent to prepare Environmental Cost Benefit Analysis for the project in EIA/EMP Report.*

xiii. *PP shall submit plan of action for usage of renewable source of energy in order to replace conventional source of energy.*

xiv. *PP shall propose to transport coal through conveyor belt from jetty itself. No road transportation of coal shall be permitted.*

The meeting ended with vote of thanks to the Chair.

****

Annexure - A

ATTENDANCE

S. No	Name	Role	Attendance
1.	Shri Gururaj P. Kundargi	Chairman	P
2.	Dr. N.P Shukla	Member	P
3.	Shri SuramyaVora	Member	P
4.	Dr Santosh Kumar	Member	P
5.	Dr. Umesh Jagannathrao Kahalekar	Member	P
6.	Shri K.B. Biswas	Member	P
7.	Dr. Nandini. N	Member	P
8.	Dr. Unmesh Patnaik	Member	P
9.	Shri M.P. Singh	Member (Representative of CEA)	P
10.	Prof S. S. Rai	Member Representative of IIT/ISMDhanbad	P
11.	Shri Yogendra Pal Singh	Member Secretary	P

***

APPROVAL OF THE CHAIRMAN

From: gpkundargi@gmail.com
To: "Yogendra Pal Singh" <yogendra78@nic.in>
Cc: "Munna Kumar Shah" <munna.shah@gov.in>, "Sourabh Kumar" <sourabh.9@govcontractor.in>
Sent: Wednesday, December 15, 2021 5:22:45 PM
Subject: Re: Draft Minutes of 17th EAC meeting held on 30th Niovember, 2021- Reg

Dear yogendra ji
Revised draft minutes are in order & approved.you may take further needful action.
G P Kundargi

On Wed, 15 Dec, 2021, 10:07 am Yogendra Pal Singh, <yogendra78@nic.in> wrote:

> Dear Sir,
> As per telephonic discussion held on 14.12.2021 with you. Necessary correction has been done in the draft MOM of Agenda item no. 17.2 and Agenda item no. 17.3. The same are highlighted in Yellow. The modified draft MOM is attached herewith for approval please.
>
> ---
>
> **From:** "suramya vora" <suramya.vora@gmail.com>
> **To:** "Yogendra Pal Singh" <yogendra78@nic.in>
> **Sent:** Tuesday, December 14, 2021 6:47:48 PM
> **Subject:** Re: Draft Minutes of 17th EAC meeting held on 30th Niovember, 2021- Reg
>
> Dear Sir,
> I have gone through the draft minutes of the EAC meeting (Thermal Sector) held on 30/11/ 2021 . i have no further comments to offer as the issues and aspects discussed in the meeting are covered accurately.