Expectations of Expert Appraisal Committee, MOEFCC in Environmental Clearance Process of Upstream Petroleum Sector & Critical Issues

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PRESENTATION OVERVIEW:

- Core Values
- Submission of information.
- Certified Compliance Report
- Water Consumption
- Maps
- EIA Reports
- Exploratory & Development Activities
- Baseline Data , Social Environment
- Biodiversity and CER Issues
- Applicable Regulatory Requirement
- Public Hearing
- Risk Assessment
- CRZ
- Critical Issues
- Way Forward

EAC LOOK FOR 3 CORE VALUES

1. **INTEGRITY** :*EIA process should be fair, objective, unbiased & balanced*
2. **UTILITY** :*Capable of providing credible information for decision making*
3. **SUSTAINABILITY** : *Process should result in environmental safeguards*

UNIFORM AND CONSISTANT INFORMATION

- INFORMATION SHOULD BE CONSISTANT IN ALL THE SUBMITTED DOCUMENTS (FR,FORM 1 & II,EIA etc.)
- DO NOT CONCEAL THE FACTS
- PRESENT FACTS OF PH,ACTION PLAN,BUDGET
- PROJECT PROPONENT SHOULD COME PREPARED WITH CONSULTANT ABOUT THE PROJECT
- FORM-1 SHALL BE CLEARLY FILLED INLINE WITH INFORMATION GIVEN IN FR .

CERTIFIED COMPLIANCE PROJECT

- **All Expansion Projects or New Projects if likely to come in the same area requires Certified Compliance Report (CCR) from Regional Office/SPCB of the MoEF&CC .**
- **This is a mandatory requirement, required by the MOEF& CC at the time of submission of EIA report for grant of EC .**
- **The compliance certificate is issued only after physical verification of all the stipulations by the Official of R O,MOEF&CC.**

[Compliance of Stipulations shall be implemented]

- **Certified Compliance Report from Regional Office of MoEF (w.e.f 30.05. 2012)**

WATER CONSUMPTION

IN CASE OF PROCESSING FACILITIES

ZERO LIQUID DISCHARGE

with

PROPER WATER BALANCE

WATER CONSUMPTION

- **Source of water**
- **Formal Permission of the water withdrawal from the concerned authority**

WASTE WATER GENERATION & HANDLING

- **ETPs (Primary , Secondary & Tertiary treatment)**
- **CHEMICAL TREATMENT-BIOLOGICAL TREATMENT**
- **WET AIR OXIDATION**
- **STPs**
- **STORM WATER HANDLING**

EAC DO CHECK ESSENTIAL MAPS

- A map specifying **locations of the state, district and project location**
- A map of covering **aerial distance of 15km** from the proposed project location delineating **environmental sensitive areas as specified in Form 1 of EIA notification dated 14th Sept. 2006**
- **Land use map** of 5 km from of the boundary of the project site to 1:25,000 based on recent satellite imagery
- **Layout plan to a scale of 1:5000 scale for the proposed development covering administrative and operational buildings, storage yards, township, green belt development etc, boundaries of proposed activity with latitude and longitude is to be submitted**
- If the project is **located within 10km of the national parks, sanctuaries, biosphere reserves, migratory corridors of wild animals, then map duly authenticated by Chief Wildlife Warden showing these features vis-à-vis the project location and the recommendations or comments of the Chief Wildlife Warden thereon (at the stage of EC)**

EIA REPORTS SHOULD HAVE

- EAC **expect that very first page of Project description – PROJECT AT A GLANCE** be given mentioning details of new or expansion . Details be given in a table on e.g. capacity , water consumption, HSD-fuel type , cost of the project , forest or sensitive area ,CRZ ,wildlife, public hearing, nearest coastal city, distance from coast etc. be given .
- Compliance of TOR along with their placement in the EIA report shall be given page no. wise.

DRAINAGE PATTERN

Components	Requirement	Methodology
Drainage pattern	Survey of India topo sheet Supplemented by Satellite Imagery (NRSA) Type of Drainage, number of streams of various types) To know the impact of change of drainage pattern and runoff discharge	SOI toposheet 1: 50000 and Satellite Imagery from NRSA

EXPLORATORY DRILLING

- B2 Category
- EMP is required
- Risk Assessment Required
- NO EIA
- NO PH
- NO BASELINE DATA
- STATE LEVEL APPRAISAL
- OTHER STATE LEVEL CLEARANCES NEEDED(CTO/CTE etc.)

DEVELOPMENT PROJECTS

- **EAC desires that EIA studies shall mandatorily covers details of existing process facilities with their design capacity, operation capacity etc.**

DEVELOPMENT PROJECTS

- **Clear picture about the pipelines passing through Wildlife and Forest areas.**
- **Net increase in pollution load if any shall be accounted for while preparing EIA report .**
- **Is there any location falls with in Critically polluted area.**

BASELINE DATA

- EAC takes a view on Baseline data reporting methods , specially units , duration, annual average,24 hrs. or 8 hrs. or 1 hrs. average or percentile values. These should be 100% correct.
- SO2 value shall not be higher than NOx value in ambient air.
- CO values and unit shall always be checked.
- CO value shall not be extremely low.
- There should be reasonable balance in THC and NMHC & MHC. VOC, BTX, nil not possible if above are reported.

BASELINE DATA

- Air quality data from down stream monitoring station(predominant wind direction) under normal condition will be higher than the data of upstream.

- S content in HSD to be checked. Whether it is 10 ppm(as per Bharat VI) for incremental value.

Micrometeorology data

Components	Requirement	Methodology
Meteorology	Wind speed Wind direction Ambient temperature Relative humidity Cloud cover (optional) Solar radiation (optional)	Using automatic instruments (data generation continuous and hourly average calculated) Using manual stations (by employing field staff)
Micrometeorology data for air quality modeling	Mixing height Stability class (Generated at site only for specific case)	Data obtained from season-wise hourly from CPCB and IMD Stability class calculated from wind speed and cloud cover

AMBIENT NOISE QUALITY

Components	Requirement	Methodology
Ambient Noise Quality	Sampling at 4-8 locations in study area for all projects. Covering all categories (residential, industrial and commercial) Once in the season	Using integrated sound level meter in dB(A) (Calibrated) 24 hours: day time 6 AM to 6 PM Night time: 7 PM to 5 AM

BASELINE DATA

- Surface water analysis- have reasonable balance between cation & anion.
- BOD and COD values shall in order. Trend values of BOD and DO shall be in reasonable ratio.
- BOD values in subsurface water usually not expected under normal conditions.
- Toxic metal contents in water shall not be abnormally high. If high then source need to be given.

SOCIAL ENVIRONMENT

- **Social Survey to be carried out.**
- **Documentary evidence is required.**
- **Social need be identified of the respective area.**
- **Social Action Plan to be prepared.**
- **Accordingly CER Budget may be proposed.**

GREEN BELT

- 33 % area shall required to be kept for GREEN BELT development .
- Only Native Species are required to be planted.
- If the area falls with in critically polluted area then the requirement for green belt is 40%.
- Cutting of trees shall be avoided.

BIODIVERSITY INDEX/CER ISSUES

- In Biological Environment Shannon-Wiener diversity index to be given.

- EAC desires that commensurate to project's cost , the environment protection funds - CER funds should be created & be spent on the project.

REGULATORY REQUIREMENT

- **MoEF&CC , New Delhi, the 30th August, 2005 G.S.R.546 (E)-Guidelines for Disposal of Solid Waste, Drill Cutting and Drilling Fluids for Offshore and Onshore Drilling Operation.**
- **The Environment (Protection) Rules, 1986, No. 72. OIL DRILLING AND GAS EXTRACTION INDUSTRY A. STANDARDS FOR LIQUID EFFLUENT.**

PUBLIC HEARING (PH)

- **Public hearing (PH) shall be chaired by the designated officer only .**
- **PH can be exempted if it is proved that pollution load is not increasing.**
- **PH can be exempted under section 7.2 of EIA notification after due diligence of EAC**

PUBLIC HEARING (PH)

- **Status of PP's commitment on CER issues raised during Public Hearing should be mentioned specifically in the EIA report and also in presentation to EAC with monitorable targets ,budget & action plan.**

CRITICAL ISSUES

AUTHORIZATIONS

- Connecting Road
- Flood Level
- Drainage
- Hazardous Waste handling & Disposal
- Membership of TSDF
- Land Lease
- Oil Spill Response & Management

CRZ ISSUES

- By mere falling PP's location or Prospective well location in CRZ area THE CRZ NOTIFICATION IS NOT APPLICABLE
- There shall be permanent structure with in CRZ area
- OR there shall be some construction of permanent nature from coast to the proposed location
- CRZ map is required to be prepared from the approved agency in 1:4000 scale covering minimum 7 km. front
- Application will route from state to central and will be cleared through two EACs

RISK STUDIES & DISASTER MANAGEMENT

Hazardous Substances

List of Hazardous Substances and quantity stored.

Assumptions and Worst case scenario.

Risk assessment be done by 3-D (CFD)Capable Software.

Risk Assessment

Prevailing Risk from existing facilities

Perceived risk from the proposed facilities.

Societal Risk

Cumulative risk

Details of Onsite mitigation measures/ DMP

Way Forward:

- EIA should serve some purpose of EP/EMP
- Enormous data generated shall be validated and be utilized for other purpose

Thanks for Your Kind Attention

AMBIENT AIR QUALITY MONITORING

Components	Requirement	Methodology
Ambient Air Quality	Sampling at 4 – 8 locations in study area upwind and down direction of site, location of max.GLC selected using screen model Parameters: PM2.5, PM10, SO2, NO2 (all projects) / as per TOR CO and Pb (Urban projects) As, Ni, BAP, Benzene, NH3 (specific projects) Frequency: 2 samples per week spread over the study area	Using PM10 and PM2.5 sampler (Calibrated) CPCB/BIS methods for PM10, SO2, NO2, NH3, CO EPA method (CFR) for PM2.5 CPCB procedure for Pb, As, Ni, Benzene, BAP Precautions to locate the sampler: CPCB document “Guidelines for Locating AAQ Monitoring Stations”.

Note : Refer TOR given to specific projects by EAC / SEIAA

Air Quality Network Requirements

Pollutant	Region Population	Minimum No. of Air Quality Monitoring Stations
Particulate matter	Less than 100,000	4
	100,000-1,000,000	4+0.6 per 100,000 population
	1,000-001-5,000,000	7.5+0.25 per 100,000 population
	Above 5,000,000	12+0.16 per 100,000 population
SO_2	Less than 1,00,000	3
	1,00,001-5,00,000	2.5+0.5 per 1,00,000 population
	5,00,001-10,00,000	6+0.15 per 1,00,000 population
	Above 10,00,000	20
NO_2	Less than 1,00,000	4
	1,00,000-5,00,000	4+0.6 per 1,00,000 population
	Above 1,000,000	10
CO	Less than 1,00,000	1
	1,00,000-5,00,000	1+0.15 per 1,00,000 population
	Above 5,000,000	6+0.05 per 1,00,000 population

Region means the study area around the project boundary area decided in scoping Additional monitoring locations should be set up if sensitive sites such as places of archeological importance and biosphere reserves exist

Source : National Ambient Air Quality Series : NAAQMS/25/2003-04-CPCB)

Surface Water Quality

Components	Requirement	Methodology
Surface Water Quality	Sampling at upstream and downstream of all natural streams in the study area (Max: 8) Parameters: CPCB Criteria pH. TSS, TDS, Hardness, Alkalinity, Cl, SO4, NO3, F, Ca, Mg, Metals like Fe, Zn, Ni, Hg, As, Cd, Cu, Ni, Co, Mn, Coliform, O&G. Frequency: Once in a season	Lab should be NABL / EPA approved Analysis as per BIS / APHA methods Calibrated instruments and use of CRM

Ground Water Quality

Components	Requirement	Methodology
Ground Water Quality	At least 8 villages in the study area depending upon the geology, hydrology . Parameters: BIS 10500 (all parameters except radioactivity) Frequency: Once in a season	Lab should be NABL / EPA approved Analysis as per BIS / APHA methods Calibrated instruments and use of CRM

SOIL QUALITY

Components	Requirement	Methodology
Soil	Soil samples from surrounding agriculture fields Parameters: pH. Cl, Conductivity, WHC, Porosity, Texture (sand, silt, clay), Bulk density, CEC, Metals,NPK. Organic Matter Frequency: Once in a season	Lab should be NABL / EPA approved Analysis as per IARI methods ? Methods by Johnson / Black Calibrated instruments and use of CRM

LANDUSE

se	Land use of project area and study area Project area. Parameters as per Standard Classification like forest, irrigated land, un-irrigated land, barren land, culturable wasteland, fallow land, current fallows, grazing land, chote-bade jhar ka jungle, road and pagdandis, ponds, water bodies, non-agriculture use land.	a. Collected and collated from Tehsildars office b. Satellite Imagery from NRSA (IRS P6, LISSIV Pan Sharpened, georeferenced) c. Ground truthing In order to know the trend in change Dist Statistics Handbook can be referred

Way Forward :

Strategic Collaboration with Indian National Centre for Ocean Information Services (INCOIS), MoES

- Offshore Block specific Oceanographic and Meteorological data is not available in public domain
- High Sea going vessels are not available in market or with consultants at the time of EIA requirement and most of the vessels travels upto few kilometres from the sea.
- To overcome from these problems CHSE from 2009 taking technical help from INCIOS without any cost being Government of India Centre
- It is proposed to have a MoU with INCIOS for Climatological, Oceanographic and Meteorological data for the purpose of preparation of EIA.
- Besides they also provide early warning system day to day basis and many parameters online

Land Use / Land Cover Classification System

Level -I	Level -II	Level -III
1. Built - up land	1.1. Built -up land	1.1.1. Urban (towns & cities)
2. Agricultural land	2.1. Crop land (i) kharif (ii) rabi (iii) double cropped	2.1.1. Irrigated crop land 2.1.2. Unirrigated crop land
	2.2. Fallow	2.2.1. Fallow
	2.3. Plantation	2.3.1. Types of plantation, casuarina, coconut, tea etc.
3. Forest	3.1 evergreen/semi-evergreen	3.1.1. Dense / closed 3.1.2. Open
	3.2. Deciduous	
	3.3. Degraded scrub land	
	3.4. Forest blank	3.4.1. Degraded forest 3.4.2. Forest blank
	3.5. Forest plantation	3.5.1. Types of plantation eg. teak, sal etc.
	3.6. Mangrove	
4. Wastelands	4.1. Salt affected land	
	4.2. Water logged land	
	4.3. Marshy / swampy land	
	4.4. Gullied / ravinous land	
	4.5. Land with or without scrub	
	4.6. Sandy area (coastal & desertic)	Minimum mappable unit IS 2.25 hectares on 1:50,000 scale
	4.7. Barren rocky / stony waste / sheet rock areas	
5. Water bodies	5.1. River / stream	
	5.2 Lake/reservoir/tank/canal	
6. Others	6.1. Shifting cultivation	6.1.1. Current 6.1.2. Old / abandoned
	6.2.grassland / grazing land	6.2.1. Grassland / grazing land
	6.3. Snow covered/glacial area	6.3.1. Snow covered / glacial area
	6.4. Mining area	6.4.1. Mining dumps

CROPPING PATTERN

Components	Requirement	Methodology
Cropping Pattern	Main crops (cereals, pulses, oilseeds, cash crops, plantation, fruits, vegetables) grown in study area Yield, Productivity	Collected and collated from Tehsildars office, District Statistics Handbook (latest) Earlier DSH can be referred to know the trends