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Performance Appraisal of Environmental Clearance in Gujarat in 2016

The analysis of the EIA process for the year 2016 in the State of Gujarat reveals that a total of 583 different projects were considered by SEIAA in 52 meetings spread over the year 2016. Out of the 583 projects, 434 projects were granted environmental clearance; where as 13 projects were not granted environmental clearance by SEIAA[1]. The analysis of the SEIAA and SEAC proceedings reveal inadequate scrutiny by the members of these committees. Given the fact that many parts of the states are severely polluted, there is an urgent need to not only review the approvals granted but also to adopt a more scientific and holistic appraisal of the projects.

Summary of Key findings

An attempt has been made to do an in-depth analysis of the environmental clearance process followed by various State Environment Impact Assessment Authority (SEIAA) and the State Level Expert Appraisal Committee (SEAC) constituted under the provision of Environment Impact Assessment (EIA) Notification 2006. The present paper focuses on the State of Gujarat, wherein all the minutes of meetings of SEIAA and the relevant SEAC minutes for the year 2016 were examined . A total of 583 different projects were considered by SEIAA in 52 meetings spread over the year 2016. Out of the 583 projects, 434 projects were granted environmental clearance; where as 13 projects were not granted environmental clearance by SEIAA[1]. One of the key findings is that the SEIAA met almost on a weekly basis. The frequency of meeting should have also led to most indepth scrutiny of the projects. Unfortunately, the minutes reveal that projects were approved in haste. No emphasis was given as to how the addition of new projects will cause incremental increase in pollution. There was no effort to consider the cumulative impacts as well as interlinked components of the project.

The Building and Construction sector accounts for nearly 40 % of the projects appraised. Clearly, the given the huge natural resource needs of this sector, there is bound to be impacts on other sector. It is natural therefore that mining of minor minerals, which are inputs for the construction sector, accounts for another 26% of the projects appraised. There was no effort to undertake cumulative impact assessment given the close linkage with the mining of minor minerals and building and construction. Synthetic chemicals projects account for nearly 27% of the project appraised and granted environmental clearance. This sector has very high pollution potential, yet there is nothing in the proceedings of the SEIAA as well as SEAC which reflects that there was any seriousness on the part of the Authority to undertake a 'detailed scrutiny' with respect to the pollution potential or incremental increase in pollution as a result of the setting up of new projects or expansion of existing ones.

The information provided in the SEIAA minutes was inadequate to the extent that none of the minutes mentioned the corresponding SEAC minutes in which the projects were discussed in detail. Moreover, the description of the project in the SEIAA meetings was very cryptic as only type of project and the district in which the project was proposed. The minutes of meeting lack data on what type of mining projects came for appraisal.

Insufficient data on the appraisal procedure itself is the violation of EIA Notification dated 14th September 2006, which states that "*the minutes of the EAC/SEAC meeting shall be finalised within 5 working days of the meeting and displayed on the website of the concerned regulatory authority. In case the project or activity is recommended for grant of EC, then the minutes shall clearly list out the specific environmental safeguards and conditions. In case the recommendations are for rejection, the reasons for the same shall also be explicitly stated*"[1].

It is evident from the minutes of the meetings of SEIAA that it has without discussion and deliberation accepted the recommendations of the SEAC. While the EIA Notification 2006 does specify that the authority shall normally accept the recommendation of SEAC, this however does not imply that SEIAA blindly and without deliberation should accept the recommendations of SEAC.

Further, the EIA Notification states all decisions of the SEIAA shall be taken in meeting and shall ordinarily be unanimous; provided that, in case a decision is taken by majority, the details of views, for and against it, shall be clearly recorded in the minutes and a copy thereof sent to MoEF[2]. An instance of this is however not seen in even one of the minutes of SEIAA meeting. They are merely, without application of mind, accepting the recommendations of SEAC.

Even after the project proponent of mineral beneficiation plant was asked to submit details of vehicles involved in transportation of hazardous waste which they did not comply with, the project was recommended for granting EC to SEIAA in the 284th SEAC meeting.

[1] Para 6 of Appendix V of EIA Notification 2006

[2] Sub-Para 7 of Para 3 of EIA Notification – State level Environment Impact Assessment Authority

None of the minutes of meetings listed the various general and/or specific conditions while granting and/ or recommending the project for Environmental Clearance . The extent of discussion with respect to air pollution were generic and only extended to dust suppression, green belt, parking area and ambient air quality being below the prescribed CPCB standards.

The minutes also did not specify any height upto which barricading of the construction site will be carried out, in the absence of which escape route remains open for the proponent.

The 281st meeting of SEAC referred about the baseline data of winter season, in which they have given the timeframe as 16th March 2015 to 15th June 2015, which is very much contradictory to each other.

Air Pollution Issues and Appraisal

The entire years' environmental clearance granting procedure was analysed in the light of air pollution perspective, so as to assess how much priority has been given during the discussion of projects at SEIAA-SEAC meetings. It was found that, the discussion on air pollution and its mitigation measures was limited to the water sprinkling during construction phase of any project, parking and traffic management details for building and construction sector without focusing on the potential impacts on air quality, which might arise from the increased vehicular movements; consideration of only criteria pollutants (PM10, PM2.5, SO_2, NOx) for monitoring of baseline concentration as well as future impact modelling and ignorance toward the concentration of other process related pollutant emission are some of the features that has been observed during the analysis.

The overall analysis of the proceedings before the SEAC and SEIAA clearly reveals a lack of seriousness on the part of the members of these bodies to undertake the detailed scrutiny which is required under the EIA Notification. The projects were considered in a mechanical manner and approval were granted without consideration of any key environmental issues. Issues concerning air pollution specially with respect to mining projects as well as synthetic organic chemicals were not even discussed. Only cursory mention were made with reference to key pollutants such as VOC's without addressing issues with respect how it will impact the environment and health of the people. There is thus an urgent need to review the functioning of both SEIAA as well as SEAC in order to ensure that they comply with the aims and objective of the EIA Notification, 2006.

SECTOR WISE ANALYSIS

1. Building and Construction Projects

Building and construction projects are appraised as Category 8 (a) as well as category 8 (b) under EIA Notification, 2006[3]. The SEAC appraises category 8 (a) project. A total of 231

[3] Building and construction projects having built-up area of more than or equal to 20,000 sqm and less than 1,50,000 sqm is considered as 8(a) projects and townships and area development projects covering an area of greater or equal to 50 ha and or built up area of greater or equal to 1,50,000 sqmis considered as Category 8(b)

projects out of 583 projects which were appraised by SEAC, during the period of one year in 2016 were building and construction project. Out of these, 201 projects were granted Environmental Clearance by State Environment Impact Assessment Authority (SEIAA), 14 were referred back to SEAC, 1 was rejected EC, 14 granted amendments in EC and 1 project was granted TOR, which was appraised under the category of 8(b) project (54th SEIAA meeting dated 30th January, 2016). A close look at the clearance granting procedure of building construction sector found that following discussions took place which has direct/indirect consequences on air environment.

- The parking space provided as part of the proposed project and the traffic management plan for entry and exit to the proposed complex has been given, however the information in terms of present level of transport infrastructure and measures proposed for improvement was not detailed out in the minutes of SEAC. In spite of this the SEAC did not ask for those information while deciding to appraise the project further (***Box 1***);
- Adoption of dust control measures including spraying of water, peripheral barricading, covered shedding for cement and other raw material handling and loading area, covering of theexcavated earth with tarpaulin sheet etc;

Analysis

It has been found that, the majority of the units are planning to dispose of the solid waste at the landfill site run by the local authority. According to the Solid Waste Management Rules 2016, all gated communities and institutions with more than 5,000 sqm area shall, within one year from the date of notification of these rules and in partnership with the local body, ensure segregation of waste at source by the generators as prescribed in these rules, facilitate collection of segregated waste in separate streams, handover recyclable material to either the authorised waste pickers or the authorizsd recyclers. The bio-degradable waste shall be processed, treated and disposed off through composting or bio-methanation within the premises as far as possible. The residual waste shall be given to the waste collectors or agency as directed by the local body[4].

All resident welfare and market associations shall, within one year from the date of notification of these rules and in partnership with the local body ensure segregation of waste at source by the generators as prescribed in these rules, facilitate collection of segregated waste in separate streams, handover recyclable material to either the authorised waste pickers or the authorised recyclers. The bio-degradable waste shall be processed, treated and disposed off through composting or bio-methanation within the premises as far as possible. The residual waste shall be given to the waste collectors or agency as directed by the local body[5].

[4] Para 7 of Rule 4 (Duties of Waste Generators) of Solid Waste Management Rules 2016
[5] Para 6 of Rule 4 (Duties of Waste Generators) of Solid Waste Management Rules 2016

In absence of such provision in the minutes of the meeting will pave the way for the proponent to increase landfill burden, which is already a source of methane gas emission into the air.

Insufficient details on existing traffic movement as well as the impact of increased vehicular movement from the proposed project on air environment were not detailed out in the minutes. In absence of this information, change in the air quality can hardly be determined; the minutes of meeting have also not detailed out the background air quality level as well as the incremental increase based on the dispersion model taking into consideration the increased traffic level and the impact of DG set operation on the air quality around the project site. This is a gross violation of Appendix II to be read with Para 6 of the EIA Notification[6]

Since, none of the minutes of meetings of SEIAA noted the corresponding SEAC minutes date, SEAC meetings of 2016 were checked separately and it was found that, no information has been furnished on the potential cumulative impacts that may arise from the projects of concern, which is a mandatory pre-requisite of conducting EIA study[7].

2. Synthetic Organic Chemical Project

Synthetic organic chemicals industries are appraised as Category 5 (f) under EIA Notification, 2006. A total of 158 projects, out of 583 projects were Synthetic Organic Chemicals Project. Out of these, 127 projects were granted EC, 15 were referred back to SEAC, 8 approved for TOR and for 8 projects amendments of EC were allowed.

It is important to note that no application was rejected under this category in the year 2016. A close look at the minutes of meeting of both SEAC and SEIAA found that the discussion related to air pollution matter was limited to the details of locations where in ambient air quality monitoring was carried out and the parameters which were monitored, per se PM10, PM2.5, SO_2, NOx, HCl, Cl_2 & VOCs. As a mitigation measure, the units proposed to install scrubbing system for control of these process gaseous emissions. However it is surprising to see that the monitoring results of VOCs were either not discussed at all or reported as normal; however no data was given in the minutes of meeting to substantiate the fact. Further, according to the United State Environment Protection Agency (US EPA)[8] the equipment leaks in chemical processing unit is also a major contributor of emission of pollutant in the air. No discussion took place about this, neither the units were asked to install Leak Detection And Repair (LDAR) system.

It is important to note here that VOCs refer to a group of chemicals. Each chemical has its own toxicity and potential for causing different health effects. Common symptoms of exposure to HIGH levels of VOCs include eye, nose and skin irritation, its various toxic and

[6] Air Environment of Form 1 A
[7] Para 9 of Form 1 of Appendix I of EIA Notification
[8] Chapter 4 of the document

neurological effects; carcinogenicity, teratogenicity and mutagenicity[9]. . It has the potential to cause photochemical ozone at ground level and damage to stratospheric ozone as well[10].

VOCs do have direct and indirect adverse effects on plants which include epinasty, chlorosis, curling, leaf abscission and growth retardation[11], with general implications for the well being of natural ecosystems. VOCs which are persistent in nature have the potential to remain in the ecosystem for long and can pass through numerous possible environmental mediums, for example through contamination of the natural water cycle.

3. Common Effluent Treatment Plant (CETP)

Common Effluent Treatment Plant (CETP) is category 7 (h) under EIA Notification, 2006. A total of 6 projects out of 583 projects were CETP. Out of these 4 were granted EC and two were approved for TOR. No application was rejected under this category.

When checked the minutes of meeting, it was found that, unit has monitored ambient air quality for the parameters like PM10, PM2.5, Sulphur Dioxide and Oxides of Nitrogen.

Analysis

Though the unit is meant to ensure treatment of liquid effluent, its operation contributes to the emission of volatile organic carbon (VOC) and pathogens into the atmosphere[12], especially at sites of gaseous releases or mechanical agitation, such as de-nitrification, aeration, mechanical oxidation, or at the exit of pipe transport, a study claims. No monitoring system has been put in place to check the emission of VOCs into the environment. Neither the expert committee asked for any remedial measures that need to be adopted to reduce the emission.

4. Mining of Minor Minerals

A total of 148 projects out of 583 projects were mining of minor minerals. Out of the total 148 projects, 92 projects were given clearances, 33 were allowed amendment of EC, 12 were not granted EC, 4 projects were referred back to SEAC and 7 were granted TOR. Minor minerals included mining of riverbed sand, ordinary sand, ordinary clay, silica sand, hard murrum, lime stone, bentonite, white clay, black trap, quartize, fire clay, gravel, chalk, marble, dolomite and sand[13].

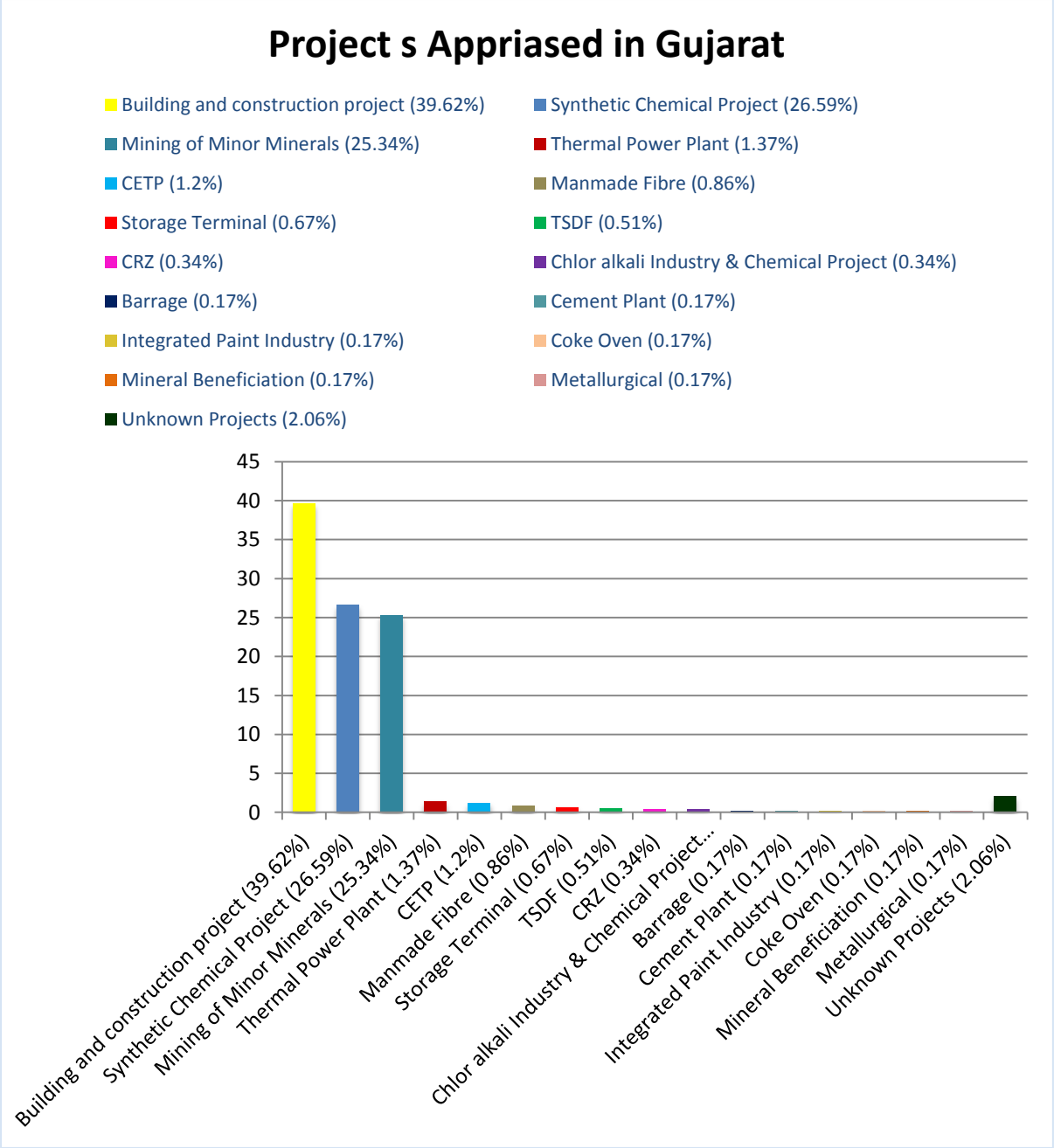
Minor minerals were appraised as Category B-2 Project under the EIA Notification, 2006. The discussion on air pollution were limited to the water sprinkling at haul road to reduce dust emission and covering of vehicle top carrying mined out materials.

Analysis

[9] http://www.health.state.mn.us/divs/eh/indoorair/voc/
[10] http://www.ultralast.com.au/the-harm-of-VOCs-in-our-environment.pdf
[11] http://www.eng.utoledo.edu/~akumar/Health%20Effects.htm
[12] http://plaza.ufl.edu/lariemen/WWTP%20Website/WWTP%20website.htm
[13] Difference between ordinary sand and sand decided on the mineralogical or textural characteristics as stated in Journal of Sedimentary Research (http://jsedres.geoscienceworld.org/content/31/4/514)

The entire mining process involves various activities in phased manner, which includes drilling, blasting, loading and unloading, haul road, transportation of raw materials and products, crushing of ore, waste/top soil handling and last but not the least DG set operations and therefore are responsible for fugitive dust emission into the atmosphere.
Merely setting up of conditions of water sprinkling and that to only along the haul roads does not help in controlling air pollution.

Cumulative Impact Assessment study must be needed to carry out to estimate the potential impacts of all the activities listed and their contribution to fugitive air pollution, which was missing while checked information from SEAC meetings. This is a gross violation of EIA notification 2006, which mandates submission of detailed information on cumulative impacts from a proposed as well as existing project[14].



[14] Para 9 of Form 1 of Appendix I of EIA Notification

5.Storage Terminal Projects

A total of 4 projects were appraised under this category of Storage Terminal Projects. Of these 2 were granted EC, 1 was referred back to SEAC to verify the status of compliance of previous EC granted and to verify the categorization of unit and 1 approved for TOR. No application was rejected under this category.

The project was intended to increase capacity of cargo handling by increasing the storage capacity of the terminal. This involves construction of marine structure and handling of chemicals and gases for their storage. The likely environment impact involves spillage and leakage into the sea water during handling of hazardous materials and gases like ammonia into the atmosphere. As precautionary measures, the unit reported to have arrangement for selling of hazardous waste to authorised recyclers and installation of ETP for treatment of industrial waste water.

Though not directly contributing to air pollution, the existing as well as any expansion of ports and harbour projects near the coastline of Gujarat affects its marine health and diversity and causes threats to coastal biodiversity of the state. A study, published in Research Gate, titled Status of Coastal and Marine Protected Areas in Gujarat reveals the threat posed to the marine protected areas due to the various industrial pollutions[15].

6. Thermal Power Plant

A total of 8 projects out of 583 projects were thermal power plant projects. Of these 5 were granted EC and 3 were granted Amendment in EC. Not a single application was rejected under this category.

The conditions and discussion related to air pollution mitigation was limited to the

- Collection of Fly ash resulting from the combustion of coal in the boiler in ESP hoppers and transportation of the same in fly ash silo to finally sale it off to the bricks/cement manufacturing unit or land filling within and outside the premises and for road construction.
- Prediction of total incremental GLC of PM, SO_2 and NOx for various type of coal consumption (Indian or imported) and efficiency of ESP, which invariably shows that the predicted ambient air quality in terms of PM, SO_2 and NOx after commissioning of the proposed project will be within the NAAQM standards.

Analysis

The unit as well as expert committee member failed to comply with the need for cumulative impact assessment covering all the potential sources of air pollution which includes movement of vehicles to the site, contribution of other industries located in the close vicinity and also contribution of fugitive dust emission to the air pollution of the area.

The appraisal on thermal power plant projects lacks any information on the sourcing of coal, which is a violation of Ministry of Environment and Forests' O.M F.No. J-11013/41/2006-IA-I

15 https://www.researchgate.net/publication/265642791_Status_of_Coastal_and_Marine_Protected_Areas_in_Gujarat

(I) dated 5th February 2013, which clearly states that, the proposals for environmental clearance would be considered, if the information on the coal quality parameters, i.e. (i) calorific value (ii) sulphur content and (iii) ash content in respect of the mines in the basket, is provided in the EIA/EMP report.
In absence of the same, it is hard to assess the extent of the impact and check the adequacy of the proposed air pollution control devices, as the quality of flue gas emission largely varies from Indian and imported coal and also on the quality parameters of the raw coal used in thermal power plant operation.

7. Manmade Fibre Project

A total of 3 projects, were manmade fibre project, of which one was manmade fibre and a captive power plant. Of these 2 were granted EC and 1 was granted amendment in EC. No application was rejected under this category.
When looked at the minutes from the perspective of air pollution issue, it was found that, the concerned units had conducted ambient air quality monitoring for the parameters like PM10, PM2.5, SO_2, NOx, CO and VOC concentrations, which remains well within the prescribed NAAQS.
The impact prediction by using Industrial Source Complex (ISC3) model developed by USEPA was taken the captive power plant as the only source of pollutant emission and leave behind the other potential sources which include various process emission as well as to and fro vehicular movement (carrying raw materials as well as finished product) to the site.

Analysis

It is important to mention here that, the process emission during synthetic fibre manufacturing largely depends on the type of spinning method and the type of fibre produced. Other emission sources include dope preparation (dissolving the polymer, blending the spinning solution, and filtering the dope), fiber processing (drawing, washing, and crimping) and solvent recovery.

For example, dry and wet spinning method involves use of solvents and thereby is the major contributor to the VOC emissions. The various air pollutants include volatilized residual monomer, organic solvents, additives, and other organic compounds used in fiber processing. Unrecovered solvent constitutes the major substance. The largest amounts of unrecovered solvent are emitted from the fiber spinning step and drying the fiber.
The SEAC during their appraisal procedure did not discuss the processes involved in the manufacturing and therefore without focusing on that, any discussion on impact prediction and mitigation measures is of no use.

Further the impact prediction was only limited to the case of captive power plant installation, where as the potential cumulative impacts generated from the process which include volatilized residual monomer, organic solvents, additives, and other organic compounds used in fiber processing was not at all considered while granting the EC.
In addition to that, the minutes of the meeting lacks any information on the sourcing of coal for the captive power plant, which is a violation of Ministry of Environment and Forests' O.M F.No. J-11013/41/2006-IA-I (I) dated 5th February 2013, which clearly states that, the

proposals for environmental clearance would be considered, if the information on the coal quality parameters, i.e. (i) calorific value (ii) sulphur content and (iii) ash content in respect of the mines in the basket, is provided in the EIA/EMP report.

8. Metallurgical Industries

One project was there in this category, which was granted EC. The various discussion and conditions on air pollution mitigation includes the following

- Use of air pollution control equipment such as cyclone bag filter, rockwool filter and bag filter at stack attached to cupola furnace.
- Enclosure for transport vehicles, spraying of water at raw materials storage area will be effectively implemented to control the dust/fugitive emission.
- Vehicles used for transportation of raw materials/finished product will be covered by tarpaulin to prevent the dusting.
- Enhancement of existing greenbelt area shall be planned by proponent and adequate budget shall also be provided for the same.
- The unit has to install online monitoring facility for other parameters like SO_2, NOx, H_2S (as they had facility for PM10); however no timeline has been given for installation

Analysis

It has been found that, the unit will use natural gas and coke as fuel and the various equipments responsible for process emission include (1) Cupola furnace/Spinning chamber / Curing Oven (2) Cupola-melt flow equipment (3) Curing oven hood in (4) Curing oven hood out (5) Cooling zone (6) Line de-dusting; however, no impact modelling study has been conducted considering these source of pollutant contributors before suggesting for mitigation measures.

Pet coke is already documented as a biggest source of pollutant as it The coking process emits particulate matter (PM); volatile organic compounds (VOCs); polynuclear aromatic hydrocarbons (PAHs); methane[16]. , and way back Delhi Pollution Control Committee (DPCC) termed this as an unacceptable fuel due to release of pollutants. It seems that, the fuel which is not acceptable in cities like Delhi owing to its contribution to the air pollution, can easily be set forth for use in other States, in the absence of any conversation on air pollution, unlike Delhi. In the likely event of so, the use of pet coke as fuel is not at all desirable.

EMP suggested for air environment mentioned air pollution control equipments shall not be required at exhaust vents as only hot air of high temperature shall be discharged through vent to atmosphere for proper dispersion. This clause was not contested by the SEAC members during the 284th meeting dated 23rd March, 2016, rather, the committee after detailed deliberations on various aspects, unanimously decided to recommend the project to SEIAA, Gujarat for the grant of

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https://www.researchgate.net/publication/258138356_EFFECTIVE_MANAGEMENT_OF_COKE_OVEN_SOLID_WASTE_AND_BY-PRODUCTS_IN_STEEL_PLANT?enrichId=rgreq-b2c1b78003d7e10f2a56a15d2d8554a3-XXX&enrichSource=Y292ZXJQYWdlOzI1ODEzODM1NjtBUzoxMDIzNjk1MDk1MTExNzBAMTQwMTQxODIwMTY2Mw%3D%3D&el=1_x_2&_esc=publicationCoverPdf

Environmental Clearance. The 83rd SEIAA meeting said "after detailed discussion, it was decided to grant expansion in environmental clearance with all the conditions recommended by the SEAC". If implemented, this will be a disaster from air pollution point of view, as many of metallurgical industries like iron and steel industries, ferro-alloy industries, smelting of ores etc will lead to the emission of very fine fume, which will require scrubbing, electro-static precipitation and bag filtration as a mitigation measure.

In spite of the fact that the proposed project was an expansion project from 30000 MTPA to 72000 MTPA, the SEAC member did not look into the compliance condition of the previously existing project.

9, Mineral Beneficiation Project

One project was there under the category of Mineral Beneficiation Project. The project was granted EC. A detailed analysis of all the SEAC meetings found that, the proponent conducted air quality monitoring study for the parameters PM2.5, PM10, SO_2, NOx and CO and all of which are within the prescribed limit, as reported in the minutes of meetings. The proponent had also conducted estimation of emissions from the plant using Industrial Source Complex (ISC3) model of USEPA. As per the dispersion modelling studies, the resultant ground level concentrations of PM10, PM2.5, NOx and SO_2 at various locations were well within the prescribed NAAQS.

Analysis

During the various stages of appraisal, the SEAC members had asked the proponent to submit detailed information on the type and quantity of fuel to be used for each utility, flue gas emission rate and emission from each utility, air pollution control measures proposed to each of the utility along with its adequacy and the possible sources of fugitive emission along with its quantification and proposed control measures, details regarding provision of Continuous Emission Monitoring System (CEMS). It is surprising to see that, none of the information sought by SEAC had been documented in the subsequent minutes of meeting; rather there was a mere mention about the complete submission of the additional information by the proponent.

In such a system, efficacy and adequacy of the information is beyond analysis and therefore, it is highly desirable that, minutes of the meeting must clearly reflects all the information pertaining to the various component of the project.

284th SEAC meeting dated 23rd March 2016

The additional information received from the project proponents, which was sought during various SEAC meetings for granting Environmental Clearance to the projects. The said submissions by the project proponents were considered by the committee during the meeting and as it was found satisfactory, the committee decided to recommend the following projects for grant of environmental clearance.

One such project was of M/s: Ashapura Perfoclay Ltd., S.No.167,Vill:Ler, Bhuj, Kutch.

10. Coke Oven Plant

In the year 2016, there was only one Coke Oven Project, which granted EC. The various conditions imposed on the project include:

- Increase in greenbelt area from 9089 sqm to 30000 sq. m.
- Collection and recycle of coal dust and coke breeze
- Water sprinkling system for coal stockyard and vehicle movement area. De-dusting system and water sprinkler will be provided to control fugitive emissions

Analysis

According to a paper titled "Effective Management of Coke Oven Solid Waste and By-Products in Steel Plant" published in the Journal of Materials Processing Technology in 2011[17], coke oven is a major source of fugitive air emissions. The paper lists out the different types of emissions from the coking coal plants during the coking process, mentioning particulate matter (PM), volatile organic compounds (VOCs), polynuclear aromatic hydrocarbons (PAHs), methane among others. Significant amount of VOCs may also be released in by-product recovery operations. For every ton of coke produced, approximately 0.7 to 7.4 kilograms (kg) of PM, 2.9 kg of SOx (ranging from 0.2 to 6.5 kg), 1.4 kg of nitrogen oxides (NOx), 0.1 kg of ammonia, and 3 kg of VOCs (including 2 kg of benzene) may get released into the atmosphere if there is no vapour recovery system. Coal-handling operations may account for about 10% of the particulate load. Coal charging, coke pushing, and quenching are major sources of dust emissions.

Under this scenario, it is surprising to find out that, neither the baseline monitoring, nor the impact modelling talked about the emission of these pollutants and therefore it is hard to believe that, operation of this plant will not cause any adverse impact on the surrounding environment and on the human health. An article in the National Toxicology Program states that the emissions from coke oven plant are known to be human carcinogens based on sufficient evidence of carcinogenicity from studies in humans[18] (). VOCs and Benzene emitted from coke oven plants are also known carcinogens.

11. Integrated Paint Industry

Only a single project was there under this category, out of the total 583 projects appraised during the year 2016 and the project was granted EC.

An analysis of the minutes revealed the fact that, the SEAC members asked for various details during one of their meeting. The details sought were largely focused on process gas emission from each unit process with its quantification, Air Pollution Control Measures proposed for controlling process gas emission along with the adequacy of those devices, details of the utilities required, type and quantity of fuel to be used for each utility, flue gas emission rate from each utility and also details about the sources of fugitive emission along with its quantification and proposed measures to control it.

Analysis

[17] https://www.researchgate.net/publication/258138356_EFFECTIVE_MANAGEMENT_OF_COKE_OVEN_SOLID_WASTE_AND_BY-PRODUCTS_IN_STEEL_PLANT?enrichId=rgreq-b2c1b78003d7e10f2a56a15d2d8554a3-XXX&enrichSource=Y292ZXJQYWdlOzI1ODEzODM1NjtBUzoxMDIzNjk1MDk1MTExNzBAMTQwMTQxODIwMTY2Mw%3D%3D&el=1_x_2&_esc=publicationCoverPdf

[18] https://ntp.niehs.nih.gov/ntp/roc/content/profiles/cokeovenemissions.pdf

The project was recommended by SEAC for granting clearance on the ground of satisfactory submission of all the additional data, however, the type of data furnished to SEAC remains unknown.

Given this circumstance, it remains unclear, whether the proponent had taken any impact assessment study for assessing VOC emissions, as the releases of volatile organic compounds from paint manufacturing include those from the process steps and from cleanup operations. The batch process production of paint which involves pigment grinding /milling also lead to generation of pigment dust as well[19]. .

12. Cement Plant

One cement plant project was appraised for approval of TOR, which was granted the TOR. This is a new unit proposes to set up standalone clinker unit for manufacturing of Ordinary Portland Cement (OPC) and Pozzolona Portland Cement (PPC) with the production capacity of 200 MT/Day (Stand-alone Clinker Grinding unit).

Analysis

The approved TOR had asked to furnish details about all possible sources of air pollution including the process emission as well as fugitive emission along with the mitigation measures and the technical specifications of the proposed air pollution control equipment proposed to control the air pollution and the capability of the management to maintain and run the same during the operational phase of the project in the form of an undertaking.

The TOR condition further had asked to carry out modelling indicating the likely impact on ambient air quality due to proposed activities along with the details of model used and input parameters used for modelling should be provided; however, the condition did not specifically asked to carry out cumulative impact assessment considering the other likely sources of air pollution.

LIFE
Legal Initiative for Forest and Environment

Project Team: Kankana Das, Deskit Angmo, Sreeja Chakraborty, Arunita Bose

N-71 Greater Kailash -1 , New Delhi, 110048

Ph 01149537774, Email. infor@lifeindia.org

eRc
EIA Resource & Response Centre
...for accountability in EIA

[19] https://www3.epa.gov/ttncatc1/dir1/ink_paint.pdf