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Analyzing the performance of the environmental clearance process in the State of Punjab



Legal Initiative for Forest and Environment

LEGAL INITIATIVE FOR FOREST AND ENVIRONMENT

## 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 Punjab, wherein all the minutes of meetings of SEIAA and the relevant SEAC minutes for the year 2016 were examined.

A total of 141 different projects were considered by SEIAA in the year 2016. Out of the 141 projects, 100 projects were granted environmental clearance while only 4 projects were rejected. It is pertinent to note here that, not a single project has been rejected on environmental ground.

The Building and Construction sector accounts for nearly 39% of the projects appraised. Clearly, given the huge natural resource needs of this sector, the impacts on other sectors are bound to be noticed. Thus, the category of mining of minor minerals, which provide the raw materials for the building and construction projects, accounts for 53.9% of the projects appraised, with mining of brick clay projects grabbing the maximum number. In spite of the high pollution potential of these sectors no discussion in the proceedings of the SEIAA as well as SEAC reflects that there was any seriousness on the part of the authority to undertake a

'detailed scrutiny' with respect to the pollution potential. There was no effort to undertake cumulative impact assessment given the close linkage with the mining of minor minerals and building and construction sector. It seems that, the expert members of SEAC have remained blissfully ignorant to the Column 9 of Form I of EIA Notification 2006.

The minutes of meeting do not reflect whether due importance was given to the existence of District Survey Report while considering appraisal of minor minerals, which was mandated vide S.O.141 (E) dated 15.01.2016.

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"*<sup>1</sup>.

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

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<sup>1</sup>Para 6 of Appendix V of EIA Notification 2006

without deliberation should accept the recommendations of SEAC. SEIAA therefore has the duty to accept or reject a project after deliberation and unanimous agreement.

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<sup>2</sup>. 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.

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 existing vehicular traffic and the potential impacts on air quality, which might arise from the increased vehicular movements; consideration of only criteria pollutants (PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub>, NO<sub>x</sub>) for monitoring of baseline concentration as well as future impact modelling and ignorance toward the concentration of other process related pollutant emission.

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 was granted without consideration of any key environmental issues. Issues concerning air pollution especially 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 to, 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.

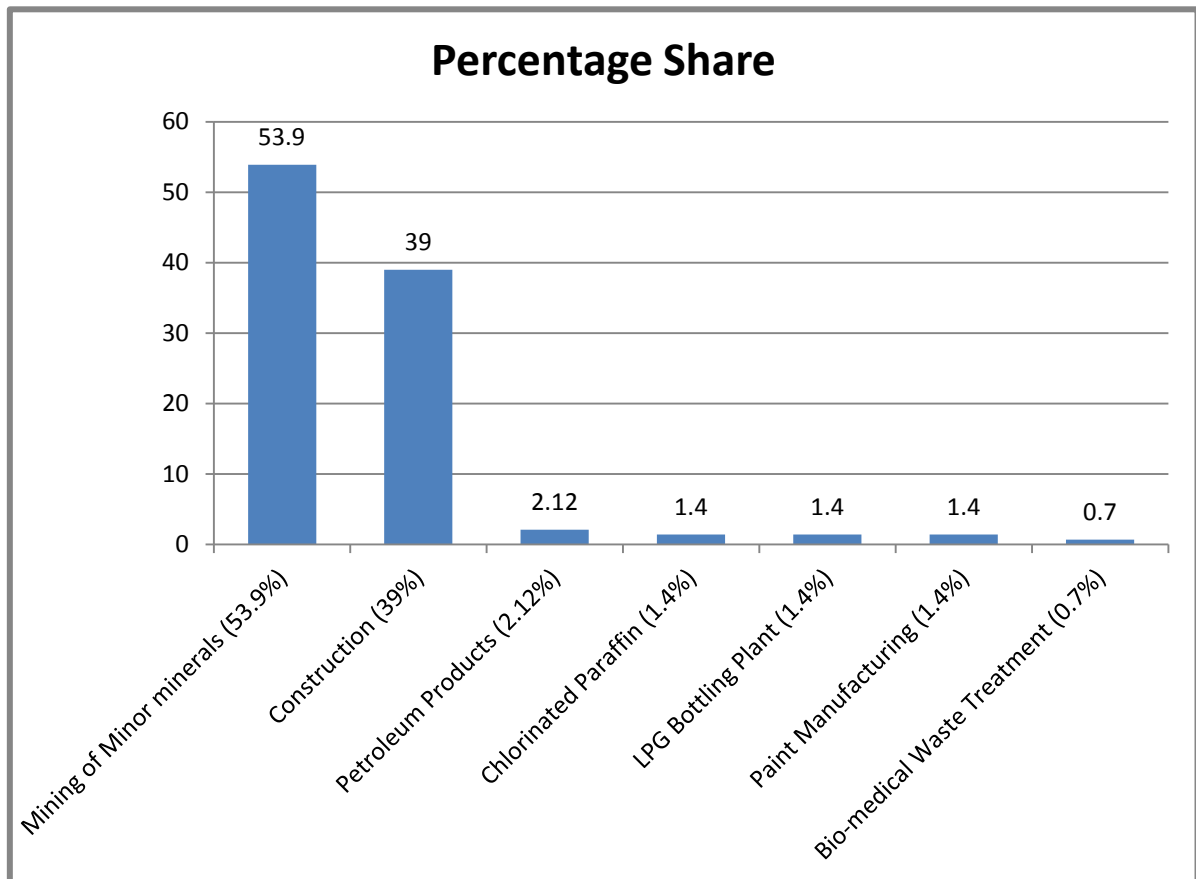
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<sup>2</sup>Sub-Para 7 of Para 3 of EIA Notification – State level Environment Impact Assessment Authority

## Categories of Project Appraised

A total of 141 projects were appraised through the whole year of 2016, the composition of which is presented in the Figure 1.

Fig 1: Types of Projects Appraised in 2016



# 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<sup>3</sup>. The SEAC appraises category 8 (a) project. A total of 55 projects out of 141 projects were building and construction projects, which were appraised by SEAC, during the year 2016.

Out of the total of 55 projects in the construction sector, 43 projects were given clearance and not a single project was rejected. Several instances of violation by project proponents, by initiating construction before obtaining EC were noted. 6 applications were deferred, 3 projects were referred back to SEAC due to unfurnished documents or violation in the view of SEIAA and 3 applications were withdrawn by the project proponent due to change in the built up area. 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.

- Use of good quality vehicles for transport of construction materials and adoption of adequate pollution control measures to control fugitive emissions
- Monitoring of incremental pollution loads on the ambient air and noise quality during construction phase
- Solid waste should be properly collected and stored at the onsite facility.
- Traffic congestion should be avoided, especially near the entry and exit points; however no information was given on the existing vehicular movement in that area. Neither any incremental pollution load has been calculated
- Monitoring of pollutants namely PM2.5, PM10, SO2, NOx, CO, Pb, Ozone (ambient air as well as stack emissions) and display at a convenient location near the main gate of the company in the public domain.

### ***Analysis***

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

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<sup>3</sup> 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 sqm is considered as Category 8(b)

project site. This is a gross violation of Appendix II to be read with Para 6 of the EIA Notification<sup>4</sup>.

It has been found that, the majority of the units are planning to collect and store the waste onsite, however no discussion on final disposal of this waste, which pave the way for the proponent to increase landfill burden, which is already a source of methane gas emission into the air.

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 authorized 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<sup>5</sup>.

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<sup>6</sup>.

Use of vague terminologies like vehicles with “Good condition”, “Adequate pollution control measure” needs to be relooked into more specific meaningful manner.

## ***2. Mining of Minor Minerals***

Minor minerals were appraised as Category B-2 Project under the EIA Notification, 2006. A total of 76 different projects have been appraised under this category, which included brick clay and sand / gravel. 64 projects out of the total of 76 projects were for mining of Brick Clay and the remaining 12 projects were for mining of Sand / Gravel.

Out of the total 76 projects, 52 projects were given clearance, 4 projects were transferred to DEIAA, 6 applications were deferred, 11 applications were delisted and 3 applications were withdrawn by the proponent.

The air pollution prevention related discussion was limited to regular sprinkling of water; maintenance of vehicles in good condition; transportation of materials in covered trucks/trolleys; monitoring of RSPM and NOx in the ambient air and displaying of the results on the website of the company and mining department; monitoring of incremental pollution loads on the ambient air and noise quality.

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<sup>4</sup> Air Environment of Form 1 A

<sup>5</sup> Para 7 of Rule 4 (Duties of Waste Generators) of Solid Waste Management Rules 2016

<sup>6</sup> Para 6 of Rule 4 (Duties of Waste Generators) of Solid Waste Management Rules 2016

### **Analysis**

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 is responsible for fugitive dust emission into the atmosphere.

Merely setting up of conditions of water sprinkling does not help in controlling air pollution. There has been no mention of high efficiency dust extraction system in mineral handling area and no mention of wind reduction by plantation, so as to prevent particle dispersion.

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.

The effective safeguard measures to be taken by the project proponent to reduce worsening of ambient air quality levels need to be specified. The various locations which would be under regular monitoring also need to be specified. The areas most prone to air pollution, like loading and unloading points must be constantly monitored and any increase in particulate matter level should be immediately reported and worked upon.

### **3. Increase in production capacity of Chlorinated Paraffin Wax**

2 projects seeking environmental clearance for increase in the production of chlorinated paraffin were considered and discussed in the minutes of the meeting of SEIAA in the year 2016, both of which were given clearance. This type project is appraised under Category 5 (f) under the EIA Notification, 2006.

The discussion on air pollution was focused on greenbelt development; emission control from vehicular movement; transportation of raw material and finished product in covered trucks; monitoring of pollutant levels namely PM2.5, PM10, SO<sub>2</sub>, NO<sub>x</sub>, CO, Pb, Ozone in ambient air as well as stack emissions; detection of gas leak and mitigation measures to handle it.

In the 107<sup>th</sup> SEIAA meeting, it was noted that the proponent submitted ambient air data for only one week and not the entire season, however they were not asked further to submit the complete season data and was appraised based on one week's data.

#### **Box 1**

**107<sup>th</sup> SEIAA Meeting held on 27<sup>th</sup> May, 2016, Item No. 107.03,**

#### **Increase in the production capacity of Chlorinated Paraffin by M/s Ajanta Chemical Industries**

The Chandigarh Pollution Testing Lab, who had conducted the seasonal study for the project proponent, had been issued a show cause notice based on inspection report by SEAC team, making the seasonal study null and void. Instead of being asked to conduct fresh seasonal data study, the SEAC asked the proponent to carry out the ambient air monitoring for all the locations at least for one week on request of the project proponent to consider their case sympathetically and recommend the same for environmental clearance. It must be noted however that the project got appraised based on

### ***Analysis***

Chlorine is the chief component use in the production of chlorinated paraffin wax. The use of chlorine and its compounds in the process involves the potential risk of release of several chlorine compounds, especially Persistent Organic Pollutants (PoPs), most of which are toxic in nature and have severe environmental and health impacts. The PoPs persist in the environment for long periods without breaking down and are recognized among the most dangerous pollutants resulting from human activities.<sup>7</sup> Some chlorine compounds also result in the formation of PoPs. In spite of such dangerous implications, there is no mention or discussion on monitoring and testing for Persistent Organic Pollutants (PoPs). The PoPs leaked may include short-chain chlorinated paraffin, increased exposure to which may lead to significant reduction of cell viability.<sup>8</sup>

## ***4. Installation of Common Biomedical Waste Treatment, Storage and Disposal Facilities***

One application was there for the installation of common bio-medical waste treatment, storage and disposal facilities in the year 2016, which got Terms of Reference. The project proponent has proposed to install alkali scrubber as air pollution control device on incinerator. The project was appraised under Category 7 (da) under the EIA Notification, 2006.

### ***Analysis***

The SEAC members did not ask the proponent to retrofit the design of incinerator in order to increase the gas retention time from 1 to 2 second in secondary chamber of the incinerator. Although, the TORs assigned to the project proponent asked for complete details regarding the incineration system, no details about the emergency systems to be applied in case of a leakage has been asked from the project proponent.

According to the Guidelines for Bio-medical Waste Incinerator ([Revised Draft](#)), incomplete combustion from incinerators may result in the release of carbon monoxide and elemental chlorine, the monitoring and studies regarding which have not been mentioned in the TORs assigned. When the SEAC had recommended the project for granting of TORs, the Bio-Medical Waste Management Rules, 2016, had not come into force. The Bio-Medical Waste Management Rules, 2016 came into force on 28<sup>th</sup> March, 2016. So, on the date of the SEIAA meeting on 1<sup>st</sup> April, 2016, the Bio-Medical Waste Management Rules, 2016 could be enforced. But the TORs assigned asked the project proponent for monitoring of pollutants at source as per the Bio Medial Waste (Management & Handling) Rules 1998. This shows that the SEIAA blindly accept the recommendations of the SEAC, without giving much thought to the project recommended. Further, the details of the air pollution control devices to be installed in the incinerator have not been asked in the TORs.

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<sup>7</sup>[http://cpcb.nic.in/upload/NewItems/NewItem\\_137\\_chlorine\\_package.pdf](http://cpcb.nic.in/upload/NewItems/NewItem_137_chlorine_package.pdf)

<sup>8</sup> <http://pubs.acs.org/doi/abs/10.1021/es505802x>



## **5. Enhancement in Storage Capacity of petroleum product**

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3 projects were appraised in the year 2016, all of which were granted Terms of Reference. These projects were appraised under Category 5 (e) under the EIA Notification, 2006.

The set TORs asked to carry out assessment of increase in PM levels due to loading and unloading activities of trucks, regular monitoring of ambient air and their display at a convenient location near the main gate, regular monitoring of VOC and hydrocarbons in addition to quarterly monitoring for fugitive emissions, gas detectors to identify gas leaks, hiring of vehicles in good condition and development of adequate greenbelt as per CPCB standards.

### **Analysis**

Volatile organic compounds (VOCs) emitted during crude oil and petroleum product terminal storage activities have the potential to cause significant damage to the environment.<sup>9</sup> Although the TORs assigned mention the details of devices in place for monitoring of VOCs, no measures were asked to put in place to reduce the VOC emissions, if present in the air more than the permissible limits. Installation of various measures like vapor condensing and recovery units, catalytic oxidizers, vapour combustion units, or gas adsorption media, use of gasoline supply and return systems, vapour recovery hoses for control of VOC emissions have not been mentioned during the discussion on assignment of TORs.

## **6. LPG Bottling Plant**

The LPG bottling plant units were appraised under Category 5 (c) under the EIA Notification, 2006.2 projects were considered and discussed in the minutes of the meeting of SEIAA in the year 2016 under this category. One was given clearance and the other project was issued Terms of Reference. The TORs set for this project category was similar to that prescribed to the project falling under the Enhancement in Storage Capacity of petroleum product projects category (5 e).

The discussion on air parameter was largely concentrated on regular monitoring of ambient air quality for PM<sub>2.5</sub>, PM<sub>10</sub>, SO<sub>2</sub>, NO<sub>x</sub>, CO, VOCs & HC (Methane & Non Methane) and its displaying at company gate and at important public locations; periodic monitoring of incremental pollution loads on ambient air quality; hiring of vehicles in good condition and development of greenbelt of adequate width.

### **Analysis**

In time of appraising the proposal, the SEAC members failed to impose any conditions regarding control of the released hydrocarbon and its mode of release. Mere monitoring of

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<sup>9</sup> <http://www.ifc.org/wps/wcm/connect/81def8804885543ab1fcf36a6515bb18/Final+-+Crude+Oil+and+Petroleum+Product+Terminals.pdf?MOD=AJPERES>

the parameter, without suggesting any control measures completely nullify the purpose of monitoring.

*109<sup>th</sup> SEIAA Meeting held on 15<sup>th</sup> June, 2016*

*Item No. 109.11, Indian Oil Corporation Ltd.*

Polycyclic Aromatic Hydrocarbons (PAHs) and their related molecules, nitro-polycyclic aromatic hydrocarbons (NPAHs) are known to be highly carcinogenic and mutagenic, capable of triggering genetic mutations in living organisms.<sup>10</sup> Furthermore, the [research published in 2003](#), revealed role of diesel fuel PAHs in disrupting the testosterone and estrogen effects in men and women, respectively, a condition which can lead to prostate cancer and genetic reproductive disorders. The terms “adequate width” and “good condition” for greenbelt development and vehicles used are extremely vague and needs clarification. Exact width for greenbelt development must be stipulated in the conditions.

## ***7. Integrated Paint Manufacturing Facility***

The paint manufacturing units were appraised under Category 5 (h) under the EIA Notification, 2006. 2 applications were considered and discussed in the year 2016 under this category. Both the applications were granted environmental clearance. The following factors relating to air pollution were discussed and mandated:

The discussion on air pollution perspective was focused on installation of separate cyclone followed bag filters and fume extraction system to control the particulate emissions; regular monitoring of gaseous emission levels from all the sources; covering of vehicles carrying materials, water sprinkling, dust screens, maintenance of engines & exhaust systems of vehicles and use of vehicles having “PUC” certificates; monitoring of pollutants (PM2.5, PM10, SO<sub>2</sub>, NO<sub>x</sub>, CO, Pb, Ozone); development of green belt as per the CPCB standards and use of wind breaks to inhibit the transport of dust.

### ***Analysis***

There are mainly 2 types of air emissions that occur during the paint manufacturing process – VOCs and pigment dust. The use of pigment pastes to reduce the pollution by pigment dust and measures to keep down the level of VOCs released during the process of paint manufacturing should be properly specified while granting EC. The conditions did not stipulate monitoring of Volatile Organic Compounds from the Integrated Paints Manufacturing Facilities. The ambient air quality monitoring parameter must be extended to the monitoring of VOC as well, as 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 leads to generation of pigment dust as well<sup>11</sup>.

<sup>10</sup> <http://cdn.intechopen.com/pdfs/22712.pdf>

<sup>11</sup> [https://www3.epa.gov/ttnecatc1/dir1/ink\\_paint.pdf](https://www3.epa.gov/ttnecatc1/dir1/ink_paint.pdf)

***Conclusion***

Submission of insufficient data, lack of importance to the cumulative impact assessment, lack of synchronisation between the previous and subsequent meeting discussion and generalised listing of conditions irrespective of the type, location and capacity of the project are some of the gaps that has been observed while analysing the appraisal procedure. Also, the discussion with respect to air pollution seems to be lacking in most cases with the SEAC recommending projects for environmental clearance even after some glaring gaps. The entire appraisal process must be made more effective and stringent, so as to ensure that the projects given clearance do not cause adverse impacts to the environment.