

Second “Recover your environment” training programme for activists: People’s environmental impact assessment of thermal power plants

Organized by: Platform for Sustainability & Equity (South India), Forum for Sustainability & Equity (Eastern Platform), National Alliance for People’s Movements, Nature & Human Centric People’s Movement, Yuva Bharat, Save Our Urban Lakes and Ecologise

2-4 March and 30 March-1 April 2018, Hyderabad

Introduction

In the last two decades, conflict between managements of polluting and hazardous facilities and populations affected by such facilities has risen, e.g., Nandikur, Singur, Plachimada, Koodankulam, Jaitapur, Sompeta, Kakrapalli, etc. This has been particularly intense in the case of thermal power plants, which is one of two top polluting industries in the world.



Thermal power plants emit massive quantities of particulate matter (a small fraction of which are highly toxic heavy metals), and acid gases (SO₂, NO₂) which impact not only the local environment, but also the regional one in a radius of 2,000 km around the plant due to long range transport of its pollutants, e.g., emissions from power plants in Krishnapatnam on India’s east coast (the red line at the bottom of the map) reach Kudremukh National Park in the Western Ghats, a distance of over 500 km, in 24 hrs.

Thermal power plants severely impact sensitive receptors around them—respiratory tract illnesses increase, crop and milk yields dip, structures are eroded (picture on left shows collapsed building of the South-central Railway’s Colony located adjacent to the Ibrahimpatnam power plant; the entire colony was condemned and its 3,000 residents relocated), soils and water bodies are acidified, forest diebacks occur, salt pans are contaminated with heavy metals.



One reason for conflict is that bystander populations around a proposed polluting or hazardous project are not told the risk that they and their environment will be at because of the project. Environmental impact assessment (EIA) is done by project proponents and the reports they produce have been termed as “engineered impact assessment” even in industry circles. Not only is the baseline data of study areas wanting and bad, there is hardly any impact analysis done. Moreover, there are no criteria for what is “acceptable/ unacceptable impact,” so all impact that is admitted to in the EIA reports, if at all any is, becomes acceptable impact by the regulatory authorities.

Impacted communities should be legally empowered to do EIA studies of polluting and hazardous facilities. Only then will the impact assessment be closer to the truth. It will also be more acceptable to people. Communities should fight for this right. For that they should learn to do EIAs on their own and with the help of social activists and sympathetic professionals who can help them do such studies. This will help assess the environmental soundness of a proposed project, and also assert their right to make decisions about their environments.

As a sequel to a recent workshop on Energy (26-28 Jan 2018, Hyderabad organized by NAPM), the Platform for Sustainability & Equity (South India), Forum for Sustainability & Equity (Eastern Platform), National Alliance for People's Movements, Nature & Human Centric People's Movement, Yuva Bharat, Save Our Urban Lakes and Ecologise are jointly organizing a training programme to equip activists and sympathetic professionals with the knowledge and skills to do EIAs around power plants.

The methods that will be taught will be based largely on data collection from bystander populations, professionals such as practicing doctors and data banks. Some parameters will be measured using simple instruments that can be easily acquired.

Objectives of the training programme

Doing an EIA requires an understanding of: Development processes; Terrain & land use; Geomorphology; Physical environment—Meteorology, air, water; Ecology—terrestrial, aquatic; Socio-economics and cultural systems; Identifying sensitive receptors; Major hazards; Environmental health; Occupational health & safety; Eco-footprinting; Energy and environmental accounting; Applied geography; Vulnerability mapping; Risk assessment; Conflict assessment; EIA/ environmental clearance procedure laws; Understanding EIA studies; Making presentations to authorities; etc. Though some of these topics will be touched upon, this training programme is not designed to cover all these topics in any depth.

The objective of this training programme is limited to help activists to:

- Understand how EIAs are done in India
- Do an environmental impact appraisal around power plants
- Quantify and assess certain impacts of a proposed project in scientific and economic terms
- Arrive at decisions regarding acceptance/rejection of the proposed project and if accepted, the conditions that people should ask the project to comply with so that the community and its environment are protected
- Make presentations to impacted people and regulatory authorities on the adverse impacts of the proposed projects and ask for

Training programme dates and design

The training programme will be broken into three phases as follows:

2-4 March, Hyderabad: Classroom work in Hyderabad

5-29 March (for any 7-10 days during this period), **Home state of participant:** Participants will do field data and information collection around power plants in their home states, and do data collation

30 March-1 April, Hyderabad: Analysis & interpretation of data and information, further classroom work and report writing in Hyderabad

Training programme agenda

2 March

- Morning
- o Introduction to the workshop
 - o EIA methodology in India
 - o Meteorology, air pollution, air pollution monitoring and control equipment
 - o Sensitive receptors and possible impacts on them
- Afternoon
- o Power plant pollution load assessment—coal requirement, emission quantification
 - o Air quality dispersion modeling with simple models
 - o Practicals on air quality modeling using calculators, computers
 - o Biological indicators, passive samplers
- Evening
- o Impact of air pollution on crop yield/milk losses and net primary production (NPP) loss computation
 - o Design of crop, milk and NPP loss surveys, including of data collection sheets

 - o Opening dinner

3 March

- Morning
- o Impact of air quality and human health
 - o Demonstration of peak flow meters,
 - o Design of health effects surveys
 - o Secondary data sources for health status of populations from health department, hospitals, doctors
- Afternoon
- o Impacts of air pollution on water bodies, forests, terrestrial and aquatic ecology, structures, salt pans, aqua farms and other sensitive receptors
 - o Design of observation sheet for data collection on above receptors
- Evening
- o Discussion on topics covered in the 1st two days

 - o Movies on power plants (if time permits)

4 March

- Morning
- o Other data to be collected—soils, ash ponds, ETP, water requirement of plant & water sources, groundwater levels, air and water quality data from plant, etc
 - o Secondary data sources—agriculture, forest, ground water departments, hospitals, doctors, educational institutions
 - o How to plan and do field work around specific power plants in participants' states
 - o Discussion on information support and guidance while doing field work
- Afternoon
- o Major hazards
 - o Maximum credible accident analysis
 - o Hazard identification
 - o Dense gas dispersion modeling

30 March

- Morning
- o Review of data and information collected on human health effects
 - o Computing injury burden
 - o Computing economic loss to community
- Afternoon
- o Writing section on impact of air pollution on human health
- Evening
- o Review of data and information collected on crop, milk yield and NPP losses
 - o Computing crop, milk yield and NPP losses
 - o Computing economic loss to community

 - o Movies (if time permits)

31 March

- Morning
- o Writing section on impact of air pollution on crop, milk yields and NPP losses
- Afternoon
- o Review of data and information collected on water bodies, forests, terrestrial and aquatic ecology, structures, salt pans, aqua farms and other sensitive receptors
 - o Computing economic loss (where possible) to community
 - o Writing section on water bodies, forests, terrestrial and aquatic ecology, structures, salt pans, aqua farms and other sensitive receptors
- Evening
- o Understanding of long-range transport of air pollutants and its implications
 - o Trajectory analysis
 - o Monitoring acid depositions

 - o Closing dinner

1 April

- Morning
- o Writing the entire environmental appraisal report
- Afternoon
- o Making a presentations to communities, regulatory authorities and courts
 - o How to review EIA studies/ risk analysis studies for sections pertaining to air pollution and major hazards

Who may apply for the training programme

Participants should:

- Have a 12th Std science background.
- Have a track record to show that knowledge and skills gained in the training programme will be used not for personal gain, but for the benefit of communities impacted thermal power plants.
- Have a working knowledge of English.
- Be comfortable with number crunching with a calculator.
- Have a basic knowledge of working with computers, though not necessarily any package.

Materials and language

- Simple computer models and other literature pertaining to the above topics will be distributed by the organizers

- Participants should carry a scientific calculator or a mobile phone which has one, and a laptop (tabs won't do), and stationery.
- Depending on participants' language mix, the working language of the training programme is likely to be a mix of English, Telugu and Hindi.

Organizational aspects

The training programme is being done in public interest and is not funded by any funding organization. Participants will have to bear their travel costs and stay in Hyderabad. A course fee of Rs 1,000 per person will be charged. The fee will include course material (CDs, photocopies of course literature, copies of modeling software, etc).

Arrangements for low-cost accommodation, and meals will be made by the organizers and the costs shared by all the training programme participants.

The course will be quite rigorous, demanding and highly participatory. Several real life examples will be used as case studies and for doing practicals. Only serious persons who feel that the training programme will benefit their work with affected communities around power plants should consider applying.

Further information regarding the programme's logistics will be posted to participants later.

If you wish to apply to attend this workshop, please fill form given below and email to: Sagar Dhara at sagdhara@yahoo.com and Hema Vaishnavi at vaishnavi.hema@gmail.com by 15 February.

Upcoming workshops

This is the second training programme of this kind. The next two workshops after this one will be on:

- a) How to make an alternate energy plan for a state that will move the state towards greater sustainability and equality,
- b) How to write people's energy and environment manifestoes.

Participant application form
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1. Name: 2. Age:
3. Organizational affiliation (if any):
4. Are you attending the workshop as an individual or on behalf of an organization: *Ind/ For an org*
5. If you are attending *on behalf/sponsored by* (strike off non-applicable phrase) an organization, please provide the name, contact details and the primary nature of work (grievance redress, organizing people, information systems,) and work disciplines (welfare, environment conservation, education,) of the sponsoring organization:

6. Your Address:

7. Tel Nos (with STD codes) Work: Home: Mob:
8. Formal education, including courses (mention only last degree, eg, BSc):
9. Nature of work done till now, with approximate dates:

10. How will you use this workshop in your future work? (Plans that are concrete in time and space will be given greater weightage than mere expression of interest that you will use what you may learn in the workshop for contributing to environmental protection or equity):

11. Through whom did you learn about this workshop?