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PRESS RELEASE

Mercury in Drinking water 250 times the permissible limit in village near NLC mines and thermal power plants: Study

Soil and drinking water in villages surrounding the NLC and ITPCL power plants and mines in Cuddalore district have failed to meet the Bureau of Indian Standards drinking water acceptable limits and other relevant standards; study recommends immediate stop to alarming pollution.

A village near the NLC India Ltd's lignite mines and thermal power plant in Cuddalore district has recorded 250 times the permissible levels of mercury in its drinking water supply, in what appears to be a clear manifestation of the unchecked pollution and blatant violation of environmental laws, a new study has found. According to the Central Pollution Control Board (CPCB), "Mercury is the most toxic substance known to mankind" and "may be fatal if inhaled and harmful if absorbed through the skin. It may cause harmful effects on the nervous system, digestive and respiratory systems and kidneys."

In line with this, the study has found the prevalence of respiratory issues, kidney disease/failure, skin issues, hairfall, vision related problems, cancer and blood pressure amongst the residents of villages near the power plant and mines.

Detailed assessments of villages in Neyveli have further shown that the water supply, air quality, soil and livestock health have all been severely affected by fly-ash, coal dust, high concentration of heavy metals in surface and groundwater due to discharge of mine water and effluents from the thermal power plant.

These findings are part of a comprehensive assessment titled '**POWERing Pollution : The Environmental and Pollution Impacts of Thermal Power Stations and Mining Operations in Neyveli & Parangipettai'**. The report studies the concentration and impact of pollutants due to thermal power plants and mines on the communities and ecosystem in **Neyveli and Parangipettai in Cuddalore district**.

The study was conducted by **Poovulagin Nanbargal, Manthan Adhyayan Kendra,** in the Neyveli region with the involvement of the local communities. This study comes at a time when residents of Neyveli could face displacement from their properties for the third time since the mines and plants were set up in 1956 as efforts to expand the existing facilities are underway. There are already vocal protests and demonstrations underway in Cuddalore district over lack of adequate compensation given to landowners who were forced to previously part with their property and NLC India Ltd's failure to provide promised employment to the local residents. This report now further justifies the unwillingness of residents to be displaced again to accommodate the planned expansion.

Detailed village-level surveys were done in 7 villages (Athandardollai, Akhilandakangapuram, Kallukkuzhi, Thenkuthu, Vanadhirayapuram, Vadakuvellur, Thoppalikuppam) in the Neyveli area spread around the plants and mines, with Focused Group Discussions (FoGD). 101 household interviews were also done as part of the survey. Two rounds of collection and testing of water (surface and ground) and soil samples were carried out with 20 locations in the first round and 11 locations in the second. The pollutants in the water bodies, drinking water sources and soil as well samples of illegal effluent discharge were determined. The study team carried out field visits to Neyveli in December 2022 and again in April 2023 to see and understand and record the status of the pollution and other impacts.

In Parangipettai, a questionnaire-based survey as well as focused group discussions were carried out in two villages (Karikuppam, Pudukuppam) around the ITPCL. One round of sample collection and testing was carried out in the area with a total of six samples, 5 of water and 1 of soil.

The study's outcomes are deeply disconcerting, as out of the 31 surveyed locations around NLC, 17 were found to be Seriously Contaminated, with 11 places Significantly Contaminated. Particularly alarming was the revelation that groundwater samples taken from Tholkappiyar Nagar in Vadakkuvellur village, near the NLC mine I, contained mercury levels exceeding the permissible limit by 250 times. Several surface as well as groundwater sources as well as soil in Neyveli have detected the presence of elements like Aluminium, Fluoride, Iron, Manganese, Magnesium, Mercury and Selenium in high concentration in the soil, water bodies including drinking water sources and effluents. Moreover, soil samples from agricultural lands affected by NLC's effluent discharge revealed an alarming presence of heavy metals, including nickel, zinc, and copper, beyond permissible levels.

An in-depth survey involving 101 households near NLC's mines and power plants further highlighted the severity of the situation. In 89 households, at least one family member suffered from kidney, skin, or respiratory diseases. Additionally, the quality of drinking water deteriorated in 66 households, while 59 households experienced a decline in water quality for agricultural irrigation. The majority of respondents attributed these health problems to NLC effluents contaminating water sources, coal ash mixing into water bodies, toxic fumes emitted from power plant stacks, and coal dust from mines. Shockingly, water samples collected from five direct discharge sites at NLC's mine and power station were heavily contaminated, surpassing the legal limits prescribed by the Environmental Protection Act. Some of these samples also contained excessive levels of mercury, selenium, and other hazardous substances. The research team's assessment confirms that these chemicals and heavy metals continue to infiltrate water bodies used for human consumption and pollute the air, significantly impacting public health and the environment.

Of the five water and one soil samples taken from villages near ITPCL's thermal power plant in Parangipettai, three locations displayed serious contamination, and two were significantly contaminated. The presence of boron in the soil sample at levels 30 times higher than permissible suggests its origin from a nearby power plant, rendering the land unsuitable for agriculture.

Interviews with the affected people illuminated the extent of distress, with many farmers forced to abandon their fields and switch to alternative occupations. The study also unveiled the presence of fluoride, iron, calcium, magnesium, silicon, hardness, alkalinity, TDS, chloride, and other substances in the water samples, exceeding permissible levels.

Shripad Dharmadhikary, of Manthan Adhyayan Kendra, and one of the authors of the study said, “In our study, we were shocked to observe many cases of unchecked pollution like effluent discharges from TPPs visibly contaminated with dark colour and oil and grease, and ash dumps on common land. This visible pollution was revealed to be the tip of the iceberg as laboratory tests showed extensive, serious contamination of water and soil in the area with heavy metals and other pollutants, exposing the hidden part of the pollution iceberg. What is of serious concern is the large number of serious health problems being reported by the people in the area, health issues which are known to be linked to the pollutants found, and whose spread often aligns with the spread of the visible and invisible pollution.”

Already addressing these violations in a judgment, the Southern Region of the National Green Tribunal had ordered in May 2022 that an investigation should be carried out on the health of the people around the

Neyveli project site. But so far, no health study has been conducted by the state government in the affected villages and there seems to be no efforts to control further expansion.

Prabhakaran Veeraarasu of Poovulagin Nanbargal said, "NLC plans to set up two new power plants of 1320 MW capacity at Neyveli and a new lignite mine with a capacity of 11.5 million tonnes per annum. About 54,000 people in more than 30 agricultural villages will be affected by this new mine, which will be implemented in an area of 4841.99 hectares. The environment, livelihood and health of people in the area have been severely affected by the existing 3640 MW thermal power plants, and three big lignite mines in Neyveli. Further expansion of NLC will make the Neyveli area uninhabitable". Several effluent discharge streams coming from mines and thermal power stations have critical parameters exceeding the legally binding limits set by the Environment Protection Rules (1986) and thus stand in violation of extant laws.

The team conducting the research has called for an immediate halt to the discharge of pollutants from the power plants and ash ponds. The research also strongly suggests that all prior pollution-related harm be cleaned up under the supervision of a commission comprising local community and civil society members, as well as independent experts. They have also asked that strict action be taken against the power plants/mines including fines and penalties or temporary suspension of plant operations if the pollution persists.

G Sundarrajan of Poovulagin Nanbargal said that**,** "Scientific evidence unequivocally demonstrates that the utilization of fossil fuels stands as the primary driver of climate change, drastically disrupting people's lives worldwide. Presently, the report sheds light on the severe environmental degradation caused by the existing thermal power plants and mines in Neyveli and its vicinity. Due to this, the Cuddalore district is confronted with the dual threats of climate change and environmental degradation.

To address this critical situation, comprehensive studies must be conducted in the proximity of thermal power plants and mines in Neyveli, with a particular focus on environmental impact restoration. Furthermore, an urgent halt to the mining expansion in Neyveli is important to safeguard the environment."

Considering the critical findings of this study, we strongly urge the Government to take the following measures:

1. Conduct a comprehensive health survey in Neyveli and its surrounding areas.
2. Initiate immediate actions to stop the pollution in the affected areas.
3. Halt the establishment of new and expansions of power plants and mines, and land acquisitions.
4. Develop a well-defined action plan to phase out existing mines and power plants.
5. Ensure fair compensation to the affected communities, acknowledging the adverse impact on their lives and livelihoods.

Download the full report here.

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