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## The International POPs Elimination Project

*Fostering Active and Effective Civil Society Participation in  
Preparations for Implementation of the Stockholm Convention*

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### Global Day of Action

Toxics Link (India)

H2 (Ground Floor), Jungpura Extension, New Delhi 110 014

T: +91-(0)11-24328006, 24320711 F: +91-(0)11-24321747

E: [tdelhi@toxicslink.org](mailto:tdelhi@toxicslink.org) /: [www.toxicslink.org](http://www.toxicslink.org)

India

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Toxics Link  
for a toxics-free world

## **About the International POPs Elimination Project**

On May 1, 2004, the International POPs Elimination Network (IPEN <http://www.ipen.org>) began a global NGO project called the International POPs Elimination Project (IPEP) in partnership with the United Nations Industrial Development Organization (UNIDO) and the United Nations Environment Program (UNEP). The Global Environment Facility (GEF) provided core funding for the project.

IPEP has three principal objectives:

- Encourage and enable NGOs in 40 developing and transitional countries to engage in activities that provide concrete and immediate contributions to country efforts in preparing for the implementation of the Stockholm Convention;
- Enhance the skills and knowledge of NGOs to help build their capacity as effective stakeholders in the Convention implementation process;
- Help establish regional and national NGO coordination and capacity in all regions of the world in support of longer term efforts to achieve chemical safety.

IPEP will support preparation of reports on country situation, hotspots, policy briefs, and regional activities. Three principal types of activities will be supported by IPEP: participation in the National Implementation Plan, training and awareness workshops, and public information and awareness campaigns.

For more information, please see <http://www.ipen.org>

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The views expressed in this report are those of the authors and not necessarily the views of the institutions providing management and/or financial support.

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Toxics Link coordinated a series of activities around the Global Day of Action, observed on the Earth Day on 22 April 2005. Toxics Link, along with several other civil society groups in the city, seized this opportunity to direct the attention of authorities as well as the masses to the grave health and environmental consequences resulting from the decision of the Municipal Corporation of Delhi (MCD) to install Waste to Energy plants in the city of Delhi.

## **THE BACKGROUND...**

The Municipal Corporation of Delhi (MCD) has agreed to install Refuse Derived Fuel (RDF) incineration plants in the city of Delhi. These plants propose to openly burn pellets of mixed waste, including all types of plastics, under completely uncontrolled conditions. This decision is seen as a grave violation of the standards for incineration under the Municipal Waste (Management and Handling) Rules, 2000, as well as the Bio Medical Waste (Management and Handling) Rules, 1998, in case this fraction is also mixed, as is often the case on the ground. The waste incineration is also contrary to Kyoto Protocol, Stockholm Convention and United Nations Environment Programme (UNEP)'s recommendations because it is one of the emitters of green house gases and Persistent Organic Pollutants (POPs) and Mercury.

The proposal by MCD in effect amounts for open burning of mixed waste. It proposes to convert mixed waste (along with plastics and paper etc. and also rice husk) into pellets, which are then sold as household and industrial fuel. This will lead to all types of emissions including dioxins and furans, heavy metals, and others, with no check.

MCD's own Feasibility Study and Master Plan for Optimal Waste Treatment and Disposal for the Entire State of Delhi of March 2004 says, "*Incineration of RDF is considered waste incineration.*"

As per the 'White Paper on Pollution in Delhi with an Action Plan' prepared by Union Ministry of Environment and Forests, "*the experience of the incineration plant at Timarpur, Delhi and the briquetting plant at Bombay support the fact that thermal treatment of municipal solid waste is not feasible, in situations where the waste has a low calorific value.*"

The feasibility study by a Danish firm, COWI, whose report the MCD has used to opt for revival of the project, the costs of RDF are often high for societies with low calorific value because energy is used to dry the waste before it becomes feasible to burn it. RDF is often an option when emission standards are lax.

Pelletisation means garbage cannot be segregated as this would lower the calorific value and the chlorinated garbage cannot be separated from plastics. What is more problematic is that the technology is coming from Technology Information, Forecasting and Assessment Council (TIFAC), Union Ministry of Science and Technology and Infrastructure Leasing & Financial Services Limited (IL&FSL), the company, a Public Sector Undertaking has proposed it unmindful of its adverse environmental consequences.

The civil society groups believe that the more feasible option to improve waste management in the city would be to route waste for recycling, safer disposal through bio-methanation or composting, as has also been the recommendation of the High Powered Committee set up by the Supreme Court of India. The proposed technology supported by the Department of Science and Technology, Government of India, is certainly not seen as advancement but a technologically backward move and therefore necessitates action.

## **THE ACTIVITIES...**

Exactly a month before the Global Day of Action (GDA), Toxics Link launched a campaign following the signing of agreement between Municipal Corporation Delhi (MCD) and Infrastructure Leasing & Financial Services Limited (IFLFSL) on 15 March 2005 to create a RDF based waste to energy project at Okhla and to revive the Timarpur plant.

## **ROUNDTABLE DISCUSSIONS**

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A Round Table to discuss ***“Feasibility and sustainability of RDF Incineration Plants proposed in Okhla and Timarpur”*** to deal with waste management in Delhi was organised by Toxics Link on 22 March 2005. This Round Table was an attempt to reflect and respond to this decision as a unified civil society voice.

Groups which participated in the Round Table included Chintan Environmental Research and Action Group, Centre for Education and Communication, Centre for Environmental Education, Society for Citizen Concerns, Centre for Science and Environment, Indian Institute of Technology, Delhi and others.

All expressed their dismay and disappointment with the agreement and called upon the MCD to take note of the benefits of non-burn technology as an alternative sustainable method for waste disposal before promoting any polluting technology, which has adverse impact on both the environmental health and renders recycling workers jobless.

## **JOINT PETITION**

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Joint petitions by the various civil society groups in and around Delhi were submitted to the authorities urging Municipal Corporation Delhi (MCD) and the Government to exclude waste incineration from qualifying as a renewable source of fuel and power.

Letters were submitted to the President of India, Chief Minister of Delhi, Urban Development Minister, Government of India, Commissioner MCD, UNEP, UNOPS and UNICEF, MNES, Central Pollution Control Board, IL&FSL, SCWTE, Department of Science and Technology (DST), Lt Governor of Delhi and the others.

## **STREET PLAY**

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A street play on ***“Waste and POPs”*** was organised at Dilli Haat. Situated in the heart of Delhi, the unique Dilli Haat is an upgraded version of the traditional weekly market offering a delightful amalgam of craft, food and cultural activities. It is visited by thousands of people on the daily basis. The play was performed by a theatre group called STEPS in a popular ‘street play’ format. It aimed at creating awareness among the common masses about the issue of POPs largely focusing on the proposed RDF

plants in Delhi and its anticipated adverse affects on the community health.

### **PANEL DISCUSSION**

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A Panel discussion was organised on '*Delhi's waste future: Landfills in the Sky!*' at the India International Centre on 27 April 2005. The panelists include Rakesh Mehta, Commissioner, Municipal Corporation of Delhi (MCD) and Dr SK Khanna, Former Adviser, Planning Commission on Agriculture. Responding to the issue of 'waste minimisation' and 'segregation at source' as the cardinal principles of waste management, Rakesh Mehta commented, "Waste is a sign of progress". MCDs empty talk about Zero Waste as a philosophy on one hand and promotion of technologies, which distorts waste management on the other outraged the residents of Delhi. Dr S. K. Khanna, Former Adviser, Planning Commission on Agriculture expressed dismay at the total lack of consultation with civil society group from India in the preparation of the Master Plan Report for MCD drafted by consultants who were hired by United Nations Environment Programme (UNEP). Khanna expressed further surprise that UNEP, which has been central to the Stockholm Convention, hired consultants who encourage incineration technology.

### **ROUNDTABLE DISCUSSIONS**

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Another Round Table to discuss the proposed Burn technology based waste to energy plant in Delhi with reference to MCD's Feasibility Study and Master Plan for Optimal Waste Treatment and Disposal for the Entire State of Delhi based on Public Private Partnership Solutions, Master Plan Report, April 2004" was organized by Toxics Link on 13 May, 2005. One of the positive outcomes from the discussion during the roundtable was the launch of a full-fledged campaign against the proposed RDF plant. The participants stressed the need for involvement of school children and householders. TL also stressed on the involvement of women groups and livelihood groups to make the public system accountable.

The participants at the Round table included groups such as PRASAR, Earth Care Foundation, Centre for Education and Communication (CEC), Chintan, Centre for Environment Education (CEE), Centre for Science

and Environment (CSE) - Down to Earth, The Financial Express and the Former Advisor Planning Commission. Hazards Centre, Pragma Foundation, Society for Citizen Concerns sent in their letter of support.

### **FORMATION OF A CIVIL SOCIETY COALITION**

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The momentum built around the Global Day of Action shall be sustained through the “**Delhi Campaign for Safe Environment (DCSE)**”, a coalition of likeminded organisations launched to protect residents of Delhi from toxics released from incineration based waste to energy plants and the loss of jobs of the waste pickers. The campaign is meant to uphold the cardinal principles of safe waste management and caution the residents against the consequences of distortion in the sustainable waste management practices.

The members of DCSE include Chintan Environmental Research and Action Group, Centre for Education and Communication (CEC), Centre for Environment Education (CEE), EARTH CAARE Foundation, Hazards Centre, PRASAR, Pragma Foundation, Dr SS Khanna & Society for Citizen Concerns, Toxics Link, Vatavaran. More organisations continue to join the campaign.

### **MEDIA ADVOCACY**

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A Panel discussion was organised on All India Radio to highlight the issue of RDF plant and its adverse affects on the health and environment with special focus n POPs. In addition several press releases were issued to raise the issue in the media. The issue got covered by the print as well as the electronic media including Indian Express, Financial Express, Channel 7, Sahara, Rajasthan Patrika and Amar Ujala.

### **THE OUTCOMES...**

Some of the immediate positive outcomes from the activities have been the formation of a coalition of civil society groups (Delhi Campaign for Safe Environment), to take up environmental issues in Delhi. A mass awareness was created on the issues of incineration, waste management and POPs. As a result of sustained criticism and protests from environmental groups IL&FSL has announced a "fresh look" on the Waste to Energy Plant proposed for the Capital. In a related development, the Supreme Court asked the Central Government (Ministry of Non-

conventional Energy Sources) on 6th May, 2005 to form a Committee to look into the issue of waste to energy in Lucknow and Hyderabad. More positive results are expected as a result of sustained civil society efforts.

Report compiled by Upasana Choudhry  
Toxics Link  
Email: [upasana@toxicslink.org](mailto:upasana@toxicslink.org)



## PRESS COVERAGE

### INDIAN EXPRESS

#### **MCD cracks garbage problem: Smoke it Karn Kowshik**

**New Delhi, April 24:** Environment-friendly MCD. Selling carbon points to developed countries as per the Kyoto protocol. But that was the story about a month ago. Now, the MCD is getting into the thick of incineration smoke — apparently to solve the Capital's garbage problem. At least, trade it for a pollution problem.

Refuse-derived fuel (RDF) is the MCD's latest venture. The civic agency has signed a MoU with a private company, International Leasing & Finance Limited, last month to revive the now defunct waste incinerator at Timarpur and build a new one at Okhla. The company will compress garbage into pellets and sell them as fuel to industry which, in Timarpur, will be incinerated to produce electricity.

Environmental Organisations say incineration of RDF will release deadly pollutants in the air, violating international protocols. The MCD's own Feasibility Study and Master plan for Optimal Waste Treatment and Disposal for the Entire State of Delhi of March 2004 equates burning RDF with waste incineration. The most worrisome of the emissions — Persistent Organic Pollutants (POPs), mercury and greenhouse gases.

Director of NGO Toxic Links and member of Centre's Hazardous Waste Standards Committee, Ravi Agarwal, says POPs are highly carcinogenic and do not disintegrate.

MCD Commissioner Rakesh Mehta defends the plant saying, "we will trap all the pollutants", but Agarwal says dioxides and furans cannot be completely trapped. While the MCD chief says the plant is anyway coming up on a landfill site, with no human habitation. Agarwal, however, counters that POPs are carried across the air rapidly and spread quickly. That is borne out by a UN Environment Program as well.

Agarwal says there is another problem as well — the low calorific value of garbage in India means the costs of RDF will work out higher. This was the reason, he says, for the Refuse Incineration cum Power Generation Station at Timarpur originally being rendered inoperable after trials in 1990. "If the waste was unsuitable for burning then, how did it become suitable now?" he says.

A feasibility study by a Danish firm, COWI, whose report the MCD has used to opt for revival of the project, says: "The costs of RDF are often high for societies with low calorific value because energy is used to dry the waste before it becomes feasible to burn it. RDF is often an option when emission standards are lax." Further, pelletisation means garbage cannot be segregated as this would lower the calorific value further. Thus, chlorinated garbage cannot be separated from plastics.

The project may have some explanation to do, set against international conventions but Mehta brushes off the suggestion — India does not have any standards for POP emissions, he points out. Besides, the MCD claims RDF won't cost it anything besides ensuring supply of waste. It might cost the Capital something, though.

#### **Hyderabad example that ended in 2001**

MCD might have taken a look at Gandhamguda village in Rangareddy district of Hyderabad which had an incineration plant on the lines of Timarpur.

Indian Express Article continued.

Prof. K. Purushotham Reddy of the Citizens Against Pollution, a Hyderabad-based NGO, says while the incinerator was in operation, the village was covered by a heavy shroud of dark smoke. Originally a pelletisation plant with a furnace, Reddy says that after the plant came up, local doctors started detecting case of problems not found before — skin rashes, asthma, respiratory problems and some cases of stillborns.

Other activists including B.V. Subba Rao of the Centre for Resource Education echo the concerns and Capt. J.Ramarao of the Forum for Better Hyderabad agree. In a statement last year, Gandhamguda sarpanch D. Shakuntala said: “Everyone in Peerancheru Gram Panchayat and its adjoining regions is now contaminated with harmful pollutants and symptoms are visible in the form of brain fever, vomiting, jaundice, asthma, miscarriages, infertility.”

Fields were also hit due to groundwater pollution. Gopal Krishna of Toxic Links says the plant has also polluted Hyderabad’s Hussein Sagar and Himayat Sagar lakes. It took a mass movement to shut the plant down four years ago.

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## **THE FINANCIAL EXPRESS**

### **A DEADLY RECIPE**

*Power from municipal waste sounds great but it's not safe for environment*

**Sunil Kumar**

Power from municipal waste, once touted as a win-win solution addressing the problems of environmental pollution as well as shortage of electricity, and may actually be only compounding the problems, on both fronts. According to environmentalists, while waste dumped at the landfill site is a hazard as it destroys the land and pollutes the groundwater of the adjoining area, burning the waste releases the pollutants in air and can have deadlier consequences.

"All burn technologies for energy from mixed municipal wastes are dangerous because of the uncontrolled presence of chlorinated hydrocarbons like PVC in our wastes which yield dioxins and heavy metals like mercury," says Almitra H Patel, member, Supreme Court Committee for Solid Waste Management.

Dioxins are the most lethal carcinogens known to humans that produce adverse effects even at extremely low doses. Burn technologies include incineration, gasification, pyrolysis, plasma technology and refuse-derived fuel.

Her views are seconded by Ravi Agarwal from Toxic Links, an NGO fighting environmental degradation. "Incineration in all form is burning waste. Segregation is the key here and the kind of segregation needed to ensure no pollution is virtually impossible," he says.

The charges are obviously denied by those associated with the plants. For instance, IL&FS, the company operating of the claimed successful pelletisation plant in near Hyderabad, insists that proper segregation is done at its plant but fails to detail how. The company also claims that proper trap mechanism is in place to ensure that pollutants are not released in air and the emission norms are strictly maintained. <sup>10</sup>

But experts refute the claim. "Testing facilities for the dioxins and furans emitted from the waste-to-energy facilities are not available in India. These tests cost \$1,000 to \$50,000 for complete profiling of dioxins and furans. In fact very few developed countries have dioxin measuring facilities," says Patel, adding, "Therefore it will also not be possible for pollution control boards to certify with confidence." Municipal and medical waste incineration have been listed as the primary sources of dioxin production worldwide.

"The inert and ash from the plant still have to be dumped which again are environmental hazards," says Shyamala from the Centre for Science and Environment.

The Energy and Resources Institute too agrees that power from municipal waste remain a threat to environment, however it still supports the programme. "Experiments have to continue only then can we come across a successful model," says Kusum Lata, research associate, Teri.

Power from municipal waste has not been a very successful experiment even abroad. The few successful ones are cost exorbitant and unthinkable for a country like India. "Since burn technologies are being phased out in the West, and are banned in many countries, they are being transported to India," says Agarwal's colleague Gopal Krishna. "The only reason the concept makes its way into the Indian market is because of the lax emission norms and the absence of testing facilities for some of the deadlier pollutants like dioxins," he adds.

Barring a couple, all experiments at electric generation from municipal waste in India have failed. Yet, new projects using the same technology keep coming up. In fact, considering the spate of failures, recently the Supreme Court too has questioned the viability of such projects and has set up a committee to review the performances of some of the projects. It has also stated that under the present circumstances, the government should not sanction any further subsidies.

Often, it is the quality of waste, as in the case of Delhi's Timarpur plant, that leads to the failure. The constituents of Indian waste differs considerably from municipal waste in the West. "Indian domestic wastes contain 60-80% moisture and 70-80% biodegradables and 7-10% combustibles by wet weight. This compares with relatively dry wastes in the West, where the reverse is true: 16-24% biodegradables and the rest mostly combustibles. Hence, burn technologies are unviable here," says Patel.

Indian municipal solid waste has low calorific value, high moisture content, high proportion of organic matter, and considerable inerts like earth, sand and grit. "Burn techniques are technically inappropriate for Indian garbage which has a calorific value of about 800 cal/kg. Burning the waste would require at least 1,500 cal/kg, else auxiliary fuel is needed," says Agarwal.

"The projects are energy intensive. In fact, there has been a few case in which more energy was consumed in running the plant than what was produced," S S Khanna, former advisor, planning commission and a senior consultant.

Thus the net result is hardly beneficial. Electricity generation from such projects is also not cost effective. The cost of generating electricity from a waste-to-energy plant is at least twice that of a thermal power plant.

The Ministry of Non-Conventional Energy Sources (MNES) has had success with biomethanation options for homogeneous finely divided wastes like slaughter-house waste, sewage sludge and industrial wastes like those from starch factories, distilleries, and paper, leather and pharmaceutical industries. The ministry is promoting energy from municipal wastes by offering subsidies and other facilities, merely on principle, expecting similar successes, without understanding the special problems of non-homogeneous wastes described above.

"The subsidy offered by the government for such projects is the big lure. But subsidising burn technologies is an invitation to both failure and disaster," says Patel.

MNES, on its part absolves itself of all responsibility. "Our concern is exploring other sources of energy and hence we offer subsidy for such projects. There are other agencies which are responsible for environmental clearances," says an official from the ministry.

#### **...and the recipe for success**

The mixed nature of India's urban wastes is a major obstacle to any sensible waste processing and disposal. There is no separation of wet biodegradable wastes (e.g. cooked and uncooked foods and flowers) and dry recyclables (mostly combustible), which are much sought after and removed on the street or at open dumps by waste-collectors. There is a universal tendency of cities to collect such mixed domestic wastes along with inerts like dust and ash from street sweepings, silt removed from open drains, and scattered piles of debris or road diggings.

Despite legislation to improve matters, cities prefer not to spend anything on processing and disposal, budgeting only for waste collection and transport to beyond city limits. Some cities now go for waste to energy option despite its miserable track record. This, in fact, also encourages people to produce more waste.

Experts insist that waste minimisation is the only way out from the problem. Recycling can eliminate a large chunk of the problem. Further, they point out that wet biodegradable wastes (e.g. cooked and uncooked foods and flowers) make excellent for composting. "Indian soil is deficient in carbon and that is also the need of the hour to enrich the soil," says environmentalist Almitra H Patel.

President A P J Abdul Kalam recently cited the example of an integrated zero waste management at Gandhi Nagar town panchayat in Vellore district. "Here the panchayat in collaboration with non-government organisation has been able to segregate the waste into organic and inorganic items. They have created man self-help groups and women self-help groups for managing the waste in the panchayat. These groups have established roadside dustbins which are being cleared regularly. They also have special services for hotels and marriage halls... A village having 2,400 families generate a garbage of over 48 tonne per year. This garbage is converted into manure and recyclable waste generating over Rs 3 lakh in revenue. All 2,400 families in the village are able to have a clean green village just by paying around Rs 10 per month per family. The scheme provides employment to around 36 persons who are paid employees of the panchayat. Part of the funds required for the payment of these employees are generated by the sale of manure and recyclable waste. This appears to be a self-generating system and is economical..."