

BEFORE THE NATIONAL GREEN TRIBUNAL, NEW DELHI  
PRINCIPAL BENCH, NEW DELHI

ORIGINAL APPLICATION NO. 199 OF 2014

IN THE MATTER OF

ALMITRA H. PATEL & ANR.

APPLICANTS

VERSUS

UNION OF INDIA & ORS.

RESPONDENTS

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(M. K. Choudhury)  
Scientist -E

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Delhi  
18.10. 2016

(Through Counsel)

**BEFORE THE NATIONAL GREEN TRIBUNAL, NEW DELHI  
PRINCIPAL BENCH, NEW DELHI**

**ORIGINAL APPLICATION NO. 199 OF 2014**

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**AFFIDAVIT ON BEHALF OF THE CENTRAL POLLUTION CONTROL BOARD, PARIVESH BHAWAN, CBD-CUM-OFFICE COMPLEX, EAST ARJUN NAGAR, DELHI – 110032, IN COMPLIANCE OF THIS HON'BLE TRIBUNAL'S ORDER, DATED 22.09.2016 IN THE ABOVE MATTER.**

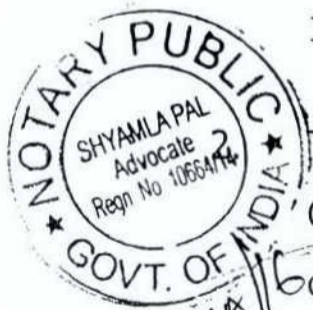
I, Shri Mantu Kumar Choudhury, Scientist- 'E'; in Central Pollution Control Board, Parivesh Bhawan, East-Arjun Nagar, Delhi – 110032 do hereby solemnly affirm and declare as under:

That I, in the capacity of Scientist-'E' of the Central Pollution Control Board (CPCB), am fully conversant with the facts of the case and hence competent to swear this affidavit.

3. That, this Hon'ble Tribunal Vide its order dated 22<sup>nd</sup> September, 2016 issued order as under;

*"We hereby direct Ministry of Environment and Forests and Climate Change and Central Pollution Control Board to file the definite response in relation to the followings;*

*[Handwritten Signature]*

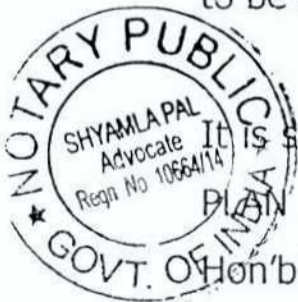


Notary No. 275A/16

- (a) *The various suggestions submitted by the Applicant Almitra H. Patel.*
- (b) *Secondly, as the national policy or with reference to various suggestions whether Waste to Energy, Waste to RDF Plant and Waste to RDF and RDF to power generation, which of the methodology would be acceptable on scientific basis in the various part of the country.*

*The affidavit by a senior most officer of the Ministry and Central Pollution Control Board should be filed within 10 days from today".*

4. It is humbly submitted that the Central Pollution Control Board received the copies of the applications dated 06.05.2016, 30.07.2016 and 07.09.2016 filed by the Applicant (Almitra H. Patel) and filed comments on various suggestions made by the applicant to the Hon'ble Tribunal vide CPCB's affidavit dated 19.09.2016. The summary of the comments on the suggestions are enclosed at **Annexure- A**.
5. That, the Hon'ble NGT in the matter of O/A. 199 of 2014 Almitra H. Patel Vs Union of India &Ors. Vide its order dated February 05, 2015 directed CPCB to prepare a National policy with regard to collection and disposal of municipal solid waste as a Model policy to be adopted; and upload in the CPCB's website.



It is submitted that the CPCB "SUGGESTIVE/INDICATIVE ACTION PLAN FOR MANAGEMENT OF MUNICIPAL SOLID WASTE" to the Hon'ble Tribunal on 13.03.2015. As the Government has revamped the MSW Rules, 2000 and notified the new "Solid Waste Management Rules, 2016"; CPCB has also modified the Nation Action Plan on solid waste management and put in its website.

A handwritten signature in black ink, appearing to be "Shyamla Pal".

It is submitted that the acceptability of process "Waste to RDF", "Waste to Energy" and "Waste to RDF and then RDF to Energy" have been examined as per the Suggestive National Action Plan prepared by CPCB. The acceptability criteria/ parameters are given at **Annexure-B**.

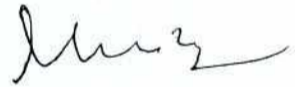


**DEPONENT**

**VERIFICATION :**

Verified at Delhi on this 18<sup>th</sup> day of October, 2016 that the contents of the above affidavit are correct to the best of my knowledge and belief and nothing has been concealed therein.

*Shyam*  
19.10.16  
Identify the Deponent who has Signed  
Thumb Impression before me.



**DEPONENT**

Entry No. *975A/16*

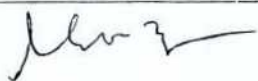
**ATTESTED**

NOTARY PUBLIC DELHI  
GOVT INDIA

**19 OCT 2016**

**CPCB's Comments on the Application dated 06.05.2016**

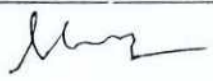
Para	Action required/suggested by the applicant, Almitra H. Patel	Comments of CPCB
1	Ban on short life PVC and chlorinated plastics:	<p>CPCB agrees with the applicant for phasing out short life PVC or chlorinated plastics from packaging materials especially for food/edible items. Rule 9 (3) of the Plastic waste management Rules, 2016 also specify that manufacture and use of non-recyclable multi-layered plastic if any should be phased out in two years time.</p> <p>Rule 4 of the Plastic Waste Management Rules, 2016 (herein referred as PWM Rules) specifies the conditions for the manufacture, importer, stocking, distribution, sale and use of carry bags plastic sheets or like, or cover made of plastic sheet and multi-layer packaging that; the plastic material, in any form including Vinyle Acetate –Maleic Acid- Vinyle Chloride Copolymer shall not be used in any package for packing gutka, pan masala and tobacco in all forms. However, manufacture of PVC or chlorinated plastics is not restricted under PWM Rules, 2016. The applicant has also urged exemption of</p>



		PVC materials for using in construction activities which have a longer life.
2	<b>RDF to Cement Plants:</b>	<p>It is humbly submitted that Rule 18 of SWM Rules, 2016 specifies that Industrial units located within one hundred km from refused derived fuel (RDF) plants and waste to Energy Plants; that such plants shall make arrangement within six months from the date of notification of these rules to replace at least five percent of their fuel requirement by RDF so produced.</p> <p>Also, Rule 11 (a) &amp; (b) of the SWM Rules, 2016 specify the duties of Secretary-In -Charge, Urban Development in the state or UTs to prepare a state policy and solid waste management strategy for the state or the union territory in consultation with stakeholders including representative of waste pickers, self help group and similar groups working in the field of waste management consistent with these rules, national policy on solid waste management and national urban sanitation policy of the ministry of urban development, in a period not later than one year from the date of notification of these rules; while</p>

*[Handwritten signature]*

		<p>preparing State policy and strategy on solid waste management, lay emphasis on waste reduction, reuse, recycling, recovery and optimum utilisation of various components of solid waste to ensure minimisation of waste going to the landfill and minimise impact of solid waste on human health and environment. Such state policy/ strategy should reflect detailed procedures including rate of RDF supply to cement industries/power plants for effective utilization of RDF in the respective state/UT.</p> <p>Rule 6 (b) of the SWM Rules, 2016 specifies duty of Ministry of Urban Development to formulate national policy and strategy on solid waste management including policy on waste to Energy in consultation with stakeholders within six months from the date of notification of these rules. The said national policy on waste to energy may also indicate mode of payment, procedures for supply of RDF to cement plants/ power plants.</p>
3	<b>Buffer Zone:</b>	Central Pollution Control Board is in the process of preparing the 'National Guidelines for Buffer Zone around



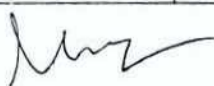
		<p>waste processing and disposal facilities'.</p> <p>It also submitted that 500 meter Buffer Zone around dump yards has been notified by the Municipal authority of Puduchery (UT) and Dhanbad (Jharkhand).</p>
4	<b>Tipping Fee:</b>	<p>It is humbly submitted that though the '<b>Tipping fee</b>' term has been defined in the SWM Rules, 2016, but it is not mentioned in any para /Rule for its application. However, for effective management of Solid waste management, the terminology, 'Tipping Fee' may be included with more clarity in the State Policy/ Strategy linking to output of solid waste management.</p>





**CPCB's comments on the Application dated 30.07.2016**

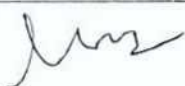
Para	Action required/suggested by the applicant, Almitra H. Patel	Comments of CPCB
1	"SWM Rules, 2016 provide for wet waste to be composted and combustible residue for Waste to Energy."	<p>It is humbly submitted that, Rules 15 (v) of the SWM Rules, 2016 has mentioned that "... Preference shall be given to decentralized processing to minimize transportation cost and environmental impacts such as</p> <ul style="list-style-type: none"><li>(a) bio-methanation, microbial composting, vermi-composting, anaerobic digestion or any other appropriate processing for bio-stabilisation of biodegradable wastes;</li><li>(b) waste to energy processes including refused derived fuel for combustible fraction of waste or supply as feedstock to solid waste based power plants or cement kilns";</li></ul> <p>Thus, the wet waste also can be processed in anaerobic digestion for production of biogas followed by generation of heat energy.</p>
2	applicant at para 2 has praised the new SWM Rules, 2016 as "Excellent" for making provisions in the rules for separate collection, storage, transportation,	CPCB has no comment to make on it.



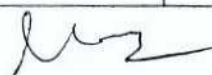
	recycling and processing of segregated wastes.	
3	Rule 15 (zi) specified types of wastes that should go for sanitary landfill and Rule 21 (1) ban on landfilling of non-recyclable waste having calorific value 1500 Kcal/kg or more.	It is submitted that the aforesaid Rules 15(zi) and 21 (1) are in place and have no contradiction. The objective of these rules is to have maximum utilization of solid wastes so that minimum waste goes for sanitary landfill.
4	The para states Regarding misunderstanding on suitable feedstock for WTE especially by burn technologies like incineration of waste that utilizing mixed waste in WTE plants; and misunderstanding of Indian national imperatives to produce more organic manure to revitalize carbon depleted soil that Government of India has announced a Rs. 1500 per ton of Compost Marketing Assistance	It is submitted that Rule 15 of the SWM Rules, 2016 clearly specify the duties of Municipal authorities for separate collection, storage, transportation of segregated wastes to processing or disposal facilities. The rule 21 (1) & (2) of SWM Rules, 2016 specifies that non recyclable waste having calorific value of 1500 Kcal/kg or more shall not be disposed of on landfills and shall only be utilised for generating energy either or through refuse derived fuel or by giving away as feed stock for preparing refuse derived fuel. High calorific wastes shall be used for co-processing in cement or thermal power plants. It is also submitted that Rule 7 of



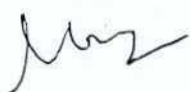
	scheme.	SWM Rules, 2016 specifies duty of Department of Fertilisers, Ministry of Chemicals and Fertilizers through appropriate mechanisms, to provide market development assistance on city compost; and ensure promotion of co-marketing of compost with chemical fertilizers in the ratio of 3 to 4 bags: 6 to 7 bags by the fertilizer companies to the extent compost is made available for marketing to the companies. Rule 8 of SWM Rules, 2016 specifies duty of the Ministry of Agriculture through appropriate mechanisms, to provide flexibility in Fertilizer Control Order for manufacturing and sale of compost.
5	Directions of the Hon'ble Tribunal in the matter in OA 199 of 2014 vide Order dated 20.03.2015 regarding Direction No. 7: "There would be complete segregation of waste into wet waste and dry waste without fail. No wet waste would be directly put into the incinerator or for power generation, except specially permitted.	It is humbly submitted that CPCB agrees with both the orders passes by the Hon'ble Tribunal. The wet waste mostly contained biodegradable wastes that undergo decomposition in natural environment causing nuisance to environment by generating leachate and foul smell. The selected wet waste (food/fruits) also can be processed in anaerobic digester for generation of biogas.



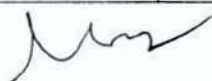
	<p>....The composted waste shall be transported and incentives be provided to farmers to use as a fertilizer." The order issued by Hon'ble Tribunal in OA 199 of 2014 at Direction 11: "...first effort should be made for composting of wet waste."</p>	
6(1)	<p><b>Composting:</b> The applicant at para 6 (1), has cited the Directions of the Hon'ble Tribunal in the matter in OA 199 of 2014 vide Order dated 20.03.2015 regarding Direction No. 8: "the remaining MSW ... shall be further segregated into recyclable and non-recyclable waste, particularly plastic and other wastes... and can be provided to the person or the firm authorized for handling recyclable plastic and allied waste for making RDF". The Hon'ble</p>	<p>It is submitted that the order of the Hon'ble Tribunal dated 20.03.2015 and the Judgement passed in the matter of Capt. Mall Singh Vs Punjab PCB are at par SWM Rules, 2016. The segregation of waste is essential for effective processing and disposal of waste. Biodegradable wastes can be composted and plastic wastes can be recycled for getting valuable products. Plastic wastes are generally bulky and less compactable that occupy larger space in landfills and reduce life span of landfills. Therefore, only inert and processed rejects should go to the landfills.</p>



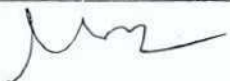
	<p>Trinubal judgement in Capt. Mall Singh Vs Punjab PCB and ors. also directed that "Particularly the plastic would not be put into the dump pits and will be recycled." Rule 15 (r), (zc) &amp; (zg) of SM Rules, 2016 specified duty of local bodies to transport, educate workers and practice segregation of solid waste.</p>	
6(2)	<p><b>Recyclables:</b> That, applicant at para 6(2), has cited duties of waste generators specified in Rule 4 (6, 7 &amp; 8) of SWM Rules, 2016 regarding processing and disposal of biodegradable waste through composting or biomethanation within the premises as far as possible. The applicant also mentioned duties of Department of Fertilizers, Ministry of Agriculture, District Magistrate/District Collector, Secretary-in-</p>	<p>It is submitted the duties specified in the SWM Rules, 2016 are in place. The duties specified to waste generator in Rule 4 (6, 7, &amp; 8) for processing of biodegradable waste through composting /biomethanation are as far as possible, but not mandatory. The objective of processing of biodegradable waste within the premises is to minimize handling of waste by the municipality.</p>



	Charge of village Panchayats and Central Pollution Control Board.	
6(3)	<p><b>Combustibles for Waste to Energy:</b></p> <p>That, applicant at para 6(3), has cited the judgement (Direction 8) passed by Hon'ble Tribunal in Capt. Mall Singh Vs Punjab PCB and ors. regarding use of non recyclable plastic wastes in construction of road or such allied activity, where scientifically possible. Whatever is still un-recyclable, the same shall be put into incinerators for disposal. The above Direction has been read with the Rule 15 of the SWM Rules, 2016 that specify duties of urban local bodies for waste segregation and Rule 21 (2) that specifies "High calorific waste shall be used for co-processing in cement or thermal power plants".</p>	<p>It is submitted that plastic wastes, at the end-of- life after several recycling become non-recyclable. The multi-layered plastics of different materials are also found non-recyclable. Such non-recyclable plastic wastes left no option but to dispose through incineration in WTE plant. The non-recyclable plastic wastes can also be utilized in road construction, making door panels, etc.</p> <p>It is also submitted that Rule 15(h) of the SWM Rules, 2016 the municipalities should setup material recovery facilities or secondary storage facilities for sorting of recyclable materials to separate recyclables waste such as paper, plastic, metal, glass, textile from the source of generation or from material recovery facilities. Thus, it is obvious that mixed waste should not reach WTE plant without segregation.</p>



6(4)	<p><b>Landfilling:</b> That applicant at para 6 (4) cited Rule 15 of SWM Rules, 2016 regarding mandates for landfilling. The applicant also cited the order dated 20.03.2015 of Hon'ble Tribunal regarding disposal of incineration ash in accordance with Hazardous Waste Rules, 2008.</p>	<p>It is submitted that the schedule II of the Hazardous Waste Management Rules, 2016 specifies the minimum concentration of Toxicity Characteristic Leaching Procedure (TCLP) or Soluble Threshold Limit Concentration (STLC) for considering a waste as 'Hazardous waste'. The incinerator ash of a particular WTE plant may be examined as per TCLP/STLC and its disposal may be considered accordingly either in Hazardous landfill or sanitary landfills depending upon characteristics of incinerator ash.</p>
6(5)	<p><b>Chlorinated plastics:</b> That applicant at para 6 (5) cited Rule 3 (11) of SWM Rules, 2016 regarding definition of combustible waste having minimum calorific value exceeding 1500 kcal/kg excluding chlorinated plastics, wood, pulps, etc. read with the rule 3 (1) (38) of SWM Rules, 2016 regarding definition of 'RDF' that fuel derived from combustible waste</p>	<p>It is submitted that CPCB agrees with the applicant for phasing out short life PVC or chlorinated plastics for packaging materials including packaging for food/ edible items. Rule 9 (3) of the Plastic waste management Rules, 2016 also specify that manufacture and use of non-recyclable multi-layered plastic if any should be phased out in two years time.</p>



<p>fraction of solid waste like plastic, wood, pulp or organic waste, other than chlorinated materials, in the form of pellets or fluff produced by drying, shredding, dehydrating and compacting of solid waste. The applicant submits to ensure combustible fraction of waste free from chlorinated plastics by phasing out use-and-throw PVC applications.</p>	
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**CPCB's Comments on the Application dated 07.09.2016**

Para	Action required/suggested by the applicant, Almitra H. Patel	Comments of CPCB
1&2	The Applicant has submitted a comparison chart of various waste processing options.	CPCB has no comment to make on it. The Central Pollution Control Board has also prepared a report on "Selection Criteria for Waste Processing Technologies" and submitted to this Hon'ble Tribunal on 07.09.2016. The said report is also available in CPCB's website.





**SUGGESTIONS ON ACCEPTIBILITY OF WASTE TO ENERGY,  
WASTE TO RDF PLANT AND WASTE TO RDF & RDF TO POWER  
GENERATION BASED ON NATIONAL POLICY**

**Waste to RDF:**

Refused Derived Fuel (RDF) is a fuel extracted from household wastes in form of fluff or pellets. The process involves sorting of incinerable fraction followed by drying and shredding into desirable sizes. RDF so produced are bailed or packed compactly for advantage of storage and transportation. It is suggested to process RDF from non-biodegradable & non-recyclable wastes, which is having calorific value of 1500 Kcal/kg and above.


RDF can be utilized as subsidiary fuel in cement kilns/ power plants along with coal.

The process of 'Waste to RDF' is an intermediate process of 'Waste to Energy'; wherein the RDF is directly fed directly into furnace without bailing /packing.

**Waste to Energy:**

The 'Waste to Energy' process comprises the process of RDF. The RDF so processed is not required for bailing/packing, which can be directly fed into the furnace for heating boiler followed by power generation.

The process of "Waste to RDF' and 'Waste to Energy' have equal importance depending upon the local condition. The acceptability of 'Waste to RDF' and 'Waste to Energy' or both together can be considered analyzing various parameters as given below;



**CRITERIA FOR ACCEPTIBILITY OF 'WASTE TO ENERGY',  
'WASTE TO RDF' AND BOTH OF THE PROCESS**

Sl. No.	Criteria/ Parameters for consideration	Waste to RDF	Waste to Energy	Waste to RDF and then RDF to Energy
1	Infrastructure facility	Segregated collection	Segregated collection	Segregated collection
2	Availability of land including buffer zone	Land required for RDF processing and storage	Land required for RDF processing and power plant	Land required for RDF processing, storage of RDF and power plant
3	Location of existing power plants & cement kilns within 100 km	Acceptable	Not required	Not required
4	State policy on waste to Energy or RDF with financial incentives	As per policy	As per policy	As per policy
5	Quantity of Waste generation	Below 500 TPD	500 TPD and above	500 TPD and above
6	Regional facility/ Cluster approach	Below 500 TPD	500 TPD and above	500 TPD and above
7	Waste quality	1500 Kcal/kg and above	1500 Kcal/kg and above	1500 Kcal/kg and above
8	Moisture content in waste	Up to 60%	Up to 60%	Up to 60%
9	Capital cost	Low	Moderate	High
10	O&M cost	Low	Moderate	High
11	Transportation cost of RDF	Involved	Not involved	Not involved
12	Disposal facility required	For rejects only	For rejects & ash	For rejects & ash
13	Water requirement in the process	Nil	High	High
14	ETP	Not required	Required	Required

NB: Segregation is mandatory. The quantity of incinerable waste after segregation will be less.

