

GOVERNMENT OF INDIA
MINISTRY OF NEW AND RENEWABLE ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 2641
TO BE ANSWERED ON 01.12.2016

SETTING UP OF WASTE -TO - ENERGY PLANTS

2641. SHRI RAJENDRA AGRAWAL :

Will the Minister of NEW AND RENEWABLE ENERGY be pleased to state:

- (a) the total number of waste to energy plants currently operational in the country, State/UT-wise;
- (b) whether the Government proposes to set up more waste-to-energy plants in the country and if so, the details thereof;
- (c) whether the waste-to-energy plants which are currently operational use mixed waste instead of dry waste and if so, whether they are detrimental to the environment and if so, the details thereof; and
- (d) whether the proposed plants are also intended to use mixed waste and if so, whether this could have a further detrimental impact on the environment and if so, the steps being taken by the Government in this regard?

ANSWER

THE MINISTER OF STATE FOR POWER, COAL, NEW AND RENEWABLE ENERGY & MINES (INDEPENDENT CHARGE) (SHRI PIYUSH GOYAL)

(a): 33 Waste to Energy (WtE) Plants with a cumulative installed capacity of over 275 MW are currently operational in the country as per State/UT wise details given at **Annexure – I**.

(b): Ministry of New and Renewable Energy (MNRE) is currently implementing a *Programme on Energy from Urban, Industrial and Agricultural Wastes/Residues*. The programme supports setting up of 5 pilot projects based on Municipal Solid Waste (MSW), besides projects based on urban, industrial and agricultural wastes/residues and provides for Central Financial Assistance (CFA) for projects of different categories as per details given at **Annexure - II**.

In addition to the above, Ministry of Urban Development (MoUD) has also launched Swachh Bharat Mission (SBM) and one of the admissible components under this is Solid Waste Management including establishment of Waste to Energy (WtE) plants with Central support up to 35% of the project cost in the form of Viability Gap Funding (VGF)/Grant.

(c)&(d): WtE plants that are currently operational in the country are based on thermal (mass incineration/RDF burning) technology or on biological (biomethanation) technology. Dry mixed waste is used in projects based on thermal conversion technology whereas source segregated wet waste is used in projects based on biological conversion technology. Both the technologies do not have any adverse impact on the environment and emissions remain within the limits prescribed by Central Pollution Control Board. The details of Environmental Footprints from different WtE technologies, as per report published by NITI Aayog in May 2014, are given at **Annexure - III**.

Annexure I - Referred in reply to Part (a) of the Lok Sabha Unstarred Question No.2641 for answer on 01.12.2016

State-Wise No. of Projects and Cumulative Capacity of Grid Connected and Decentralized Projects installed under Waste to Energy Programme as on 28.11.2016

Sl. No.	Name of State/UT	No. of Projects	Total Capacity in MW
1	Delhi	-	16.00
2	U.P.	4	58.01
3	Punjab	4	19.20
4	Maharashtra	5	35.71
5	Rajasthan	1	3.70
6	Uttarakhand	1	4.52
7	Haryana	-	4.00
8	Tamil Nadu	1	21.15
9	Chhattisgarh	-	0.33
10	Gujarat	1	15.81
11	A P.	8	73.93
12	M.P.	1	4.38
13	Karnataka	3	13.04
14	Odisha	-	0.02
15	Bihar	-	1.00
16	West Bengal	2	2.17
17	Himachal Pradesh	1	2.00
18	Kerala	1	0.23
	Total	33	275.19

Annexure II - Referred in reply to Part (b) of the Lok Sabha Unstarred Question No. 2641 for answer on 01.12.2016

CENTRAL FINANCIAL ASSISTANCE UNDER THE PROGRAMME ON ENERGY FROM URBAN, INDUSTRIAL AND AGRICULTURAL WASTES/RESIDUES

Wastes/Processes/Technologies	Central Financial Assistance
1. Power generation from Municipal Solid Waste	Rs.2.00 crore/MW (Max. Rs.10.00 crore/Project)
2. Power generation or production of bio-CNG from biogas at Sewage Treatment Plant or through biomethanation of Urban and Agricultural Waste/Residues including cattle dung	Rs.2.00 crore/MW or bio-CNG from 12000 m ³ biogas/day (Max. Rs.5.00 crore/project)
3. Biogas generation from Urban, Industrial and Agricultural Wastes/Residues	Rs.0.50 crore/MW eq.(12000 m ³ biogas/day with maximum of Rs.5.00 crore/project)
4. Power Generation from Biogas (Engine/gas turbine route) and/or production of bio-CNG	Rs.1.00 crore/MW or bio-CNG from 12000 m ³ biogas (Max. Rs.5.00 crore/project)
5. Power Generation from Biogas, solid Industrial, Agricultural Waste/residues excluding bagasse through Boiler + Steam turbine Configuration	Rs.0.20 crore/MW (Max. Rs.1.00 crore / project)

Other incentives and support measures

- i) Incentives to State Nodal Agencies: service charge @ Rs.1% of the subsidy restricted to Rs.5.00 lakh per project,
- ii) Financial Assistance for promotional activities: for organizing training courses, business meets, seminars/workshops and publicity/awareness, subject to a maximum of Rs. 3.00 lakh per activity.
- iii) In addition, concessional customs duty and excise duty exemption are also provided for initial setting up of grid connected projects for power generation and/or production of Bio-CNG from waste.

Annexure III - Referred in reply to Parts (c&d) of the Lok Sabha Unstarred Question No.2641 for answer on 01.12.2016

Environmental Footprint of Waste to Energy Technologies

S No.	Associated Factors	Composting	Biomethanation	Incineration and RDF Burning	Gasification	Engineered Landfills #
1	Air Pollution					
(a)	Extent	Low	Low	High	Medium	Medium
(b)	Requirement of Air Pollution Control	-	-	Yes	Yes	-
(c)	Dioxins or Furans Formation	-	-	Possibility exists; but minimized due to removal of chlorinated plastics from waste by Rag pickers	-	-
(d)	Release of Green House Gases	Uncontrolled	Controlled and Utilized	Controlled and utilized	Controlled and utilized	Most uncontrolled. Only in very few cases is controlled and utilized if mechanism for gas recovery exists.
2.	Water pollution					
(a)	Exists	Yes	Yes	Yes (Due to water use in scrubbing and Quenching)	Yes (Due to water used in scrubbing & Quenching)	Yes
(b)	Requirement of Waste water treatment	Yes; for leachate	Yes; for press water	Yes	Yes	Yes, for leachate
(c)	Quality of Treated water	May be discharged into water bodies	May be used in process or discharged into water bodies.	May be used in the process.	May be used in the process.	May be discharged into water bodies.
(d)	Degree of Pollution	Medium -High	Medium	Medium	Medium	Medium -High
3	Solid waste gen. due to rejects/ sludge formation in the process	high	low	low	low	Nil
4	Volume reduction of waste	15- 30%	45 - 50 %	75 - 90%	90%	70 - 80 % if waste contains biodegradables#

Biodegradables are not allowed to be land-filled in India as per MSW - 2000 rules.