GOVERNMENT OF INDIA
MINISTRY OF NEW AND RENEWABLE ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 2774
ANSWERED ON 06.08.2025

BIOGAS PLANTS

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

(a) the details of the total number of biogas plants installed in the country along with their biogas production capacity and the quantity of produced biogas being utilised for electricity generation, State and year-wise;
(b) the details of the rural households benefitted from biogas plants, State and year-wise and the details of the percentage of agricultural and organic waste being utilised for biogas production, year-wise;
(c) the details of the biogas plants set up since 2021, State and year-wise along with the details of the biogas plants operating at their full efficiency along with the reasons for inefficiencies, if any;
(d) the measures taken by the Government to improve the quality and calorific value of biogas produced from organic waste; and
(e) whether any Public Private Partnerships (PPP) or international collaborations are being explored for scaling up biogas projects and if so, the details thereof?

ANSWER

THE MINISTER OF STATE FOR NEW & RENEWABLE ENERGY AND POWER

(SHRI SHRIPAD YESSO NAIK)

(a) The details of state-wise, year-wise, and biogas production capacity-wise installed biogas plants under the National Bioenergy Programme in the country are given in **Annexure-I.**

(b) Under the Biogas Programme of Ministry of New and Renewable Energy (MNRE), a total **35088** number of households benefitted from biogas plants. The State and year wise details are given in **Annexure-II.** The households-based biogas plants utilize only cattle dung (organic waste) as raw material for biogas production.

The year-wise details of organic waste (cattle dung) based biogas plants installed under the Biogas Programme of MNRE are given in **Annexure-III**.

(c): The details of the biogas plants set up since year 2021 is given in **Annexure-I**. As per the third-party evaluation study conducted by MNRE in total 13 number of States during the year 2020, about 96% installed small biogas plants are found as functional. The assessment for operational efficiency of the installed biogas plants since 2021 is being carried out by way of third-party evaluation of National Bioenergy Programme .

(d) The Sardar Swaran Singh National Institute of Bio-Energy (SSS-NIBE), an autonomous Research and Development (R&D) institute of MNRE, is carrying out R&D work using on certain feedstock (Napier grass – energy crop), to enrich biomethane in raw biogas and developing other biogas purification technologies for improving biogas quality.
Government is also working with academic/research institutions and industries to address technical challenges being faced by the industries in Compressed Biogas (CBG) sector.

(e) Under the Swachh Bharat Mission – Urban 2.0, the central financial assistance is provided for setting up all type of municipal waste management projects including Waste to Energy Plants, wherein the projects under Public Private Partnership (PPP) mode are encouraged to invite private capital in urban infrastructure as well as to bring in private sector efficiency in delivery of urban services and Operation & Maintenance.

On International Collaborations side, the United Nations Industrial Development Organization (UNIDO) has collaborated with MNRE on implementing a Global Environment Facility (GEF) funded project *'Organic Waste Streams for Industrial Renewable Energy Applications in India*' to supplement the ongoing Waste-to-Energy program of MNRE by supporting four number of innovative projects in the CBG sector.

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ANNEXURE-I

REFERRED TO IN REPLY TO THE LOK SABHA UNSTARRED QUESTION NO.2774, Part (a) TO BE ANSWERED ON 06.08.2025 ON "BIO-GAS PLANTS".

Table- 1: The number of **small biogas plants** (ranging from 1 to 25 m^3 biogas generation per day capacity) set up under the Biogas Programme of MNRE during the last three years i.e. from 2022-23 to 2024-25 in the country is given as under: -

SN	State/ UT	Year wise number of installed small biogas plants			
		2022-23	2023-24	2024-25	Total
1.	Andhra Pradesh	30	0	58	88
2.	Arunachal Pradesh	0	200	0	200
3.	Assam	0	190	199	389
4.	Bihar	9	29	216	254
5.	Chhattisgarh	118	400	147	665
6.	Goa	11	0	0	11
7.	Gujarat	224	1074	2370	3668
8.	Haryana	116	239	84	439
9.	Jharkhand	0	11	0	11
10.	Karnataka	186	970	242	1398
11.	Kerala	330	201	106	637
12.	Madhya Pradesh	2132	2212	1916	6260
13.	Maharashtra	5180	4707	4581	14468
14.	Manipur	0	0	25	25
15.	Meghalaya	0	0	1	1
16.	Mizoram	0	1	0	1
17.	Nagaland	0	52	0	52
18.	Odisha	97	35	84	216
19.	Punjab	1031	1212	1052	3295
20.	Rajasthan	20	347	200	567
21.	Tamil Nadu	46	65	13	124
22.	Telangana	0	12	11	23
23.	Tripura	0	51	110	161
24.	Uttar Pradesh	172	167	201	540
25.	Uttarakhand	242	815	379	1436
26.	West Bengal	0	75	84	159
	Total	**9944**	**14413**	**12079**	**35088**

Note: (a) Considering the majority of installed household biogas plants are of 2 m^3 per day biogas generation capacity, the cumulative biogas generation per day capacity is 70176 m^3 and these small biogas plants are not used for electricity generation; and

(b) MNRE have not allocated the annual target for the FY 2021-22.

Table- 2: The year wise number of **medium biogas plants** (ranging from above 25 m^3 to 2500 m^3 biogas generation per day capacity) set up under the Biogas Programme of MNRE in the country is given as under:

SN	State/ Union Territories	FY 2021-22	FY 2022-23	2023-24		2024-25		Total	
		No of projects	No of projects	No of projects	Installed Capacity (in m3/day)	No of projects	Installed Capacity (in m3/day)	No of projects	Installed Capacity (in m3/day)
1.	Maharashtra	-	-	-	-	11	8425	11	8425
2.	Odisha	-	-	1	375	-	-	1	375
3.	Punjab	-	-	-	-	1	187.5	1	187.5
4.	Tamil Nadu	-	-	7	16000	-	-	7	16000
	Total	-	-	**8**	**16375**	**12**	**2012.50**	**20**	**18387.50**

Note : 100% biogas being generated in medium size biogas plants is used for power generation.

Table- 3: The year wise number of **large biogas plants** (above 2500 m^3 biogas generation per day capacity) commissioned under the Waste to Energy programme of MNRE in the country is given as under:

State	FY 2021-22		FY 2022-23		FY 2023-24		FY 2024-25		Total	
	No.	Installed Capacity (m3/day)	No.	Installed Capacity (m3/day)	No.	Installed Capacity (m3/day)	No.	Installed Capacity (m3/day)	No.	Installed Capacity (m3/day)
Haryana	-	-	1	6750	1	6200	-	-	2	12950
Odisha	-	-	-	-	-	-	1	10000	1	10000
Telangana	3	48500	-	-	-	-	-	-	3	48500
Uttar Pradesh	-	-	-	-	-	-	1	9091	1	9091
Uttarakhand	-	-	-	-	-	-	1	12960	1	12960
West Bengal	-	-	1	8400	-	-	1	24000	2	32400
Grand Total	3	48500	2	15150	1	6200	4	56051	10	125901

Note : 100% biogas being generated in large scale biogas plants is used for thermal applications.

Table 4: The state-wise and year-wise details of biogas to power projects commissioned under the WTE programme during Phase-I of NBP

SN	State	FY 2021-22			FY 2022-23			FY 2023-24			FY 2024-25			**Total**		
		No.	Installed Capacity (biogas m^3/day)	Installed Capacity (MW)	No.	Installed Capacity (biogas m^3/day)	Installed Capacity (MW)	No.	Installed Capacity (biogas m^3/day)	Installed Capacity (MW)	No.	Installed Capacity (biogas m^3/day)	Installed Capacity (MW)	No.	Installed Capacity (biogas m^3/day)	Installed Capacity (MW)
1	Goa	-	-	-	-	-	-	2	15328	1.60	-	-	-	2	15328	1.60
2	Gujarat	-	-	-	-	-	-	1	24000	1.50	1	18000	1.50	2	42000	3.00
3	Karnataka	-	-	-	-	-	-	1	38400	3.00	1	240	0.40	2	38640	3.40
4	Maharashtra	-	-	-	1	15000	1.56	-	-	-	2	29100	3.12	3	44100	4.68
5	Uttar Pradesh	1	7200	0.64	4	93312	4.40	-	-	-	-	-	-	5	100512	5.04
6	West Bengal	-	-	-	-	-	-	-	-	-	1	24000	1.5	1	24000	1.50
	Total	**1**	**7200**	**0.64**	**5**	**108312**	**5.96**	**4**	**77728**	**6.10**	**5**	**71340**	**6.52**	**15**	**264580**	**19.22**

Note: 100% biogas being generated in large size biogas plants is used for power generation.

ANNEXURE-II

REFERRED TO IN REPLY TO THE LOK SABHA UNSTARRED QUESTION NO.2774, Part (b) TO BE ANSWERED ON 06.08.2025 ON "BIO-GAS PLANTS".

Table : The Year wise number of households benefitted from small biogas plants under the Biogas Programme of MNRE during the last three years i.e. from 2022-23 to 2024-25 in the country is given as under:-

SN	State/ Union Territory	Year wise number of households benefitted from small biogas plants			
		2022-23	2023-24	2024-25	Total
1.	Andhra Pradesh	30	0	58	88
2.	Arunachal Pradesh	0	200	0	200
3.	Assam	0	190	199	389
4.	Bihar	9	29	216	254
5.	Chhattisgarh	118	400	147	665
6.	Goa	11	0	0	11
7.	Gujarat	224	1074	2370	3668
8.	Haryana	116	239	84	439
9.	Jharkhand	0	11	0	11
10.	Karnataka	186	970	242	1398
11.	Kerala	330	201	106	637
12.	Madhya Pradesh	2132	2212	1916	6260
13.	Maharashtra	5180	4707	4581	14468
14.	Manipur	0	0	25	25
15.	Meghalaya	0	0	1	1
16.	Mizoram	0	1	0	1
17.	Nagaland	0	52	0	52
18.	Odisha	97	35	84	216
19.	Punjab	1031	1212	1052	3295
20.	Rajasthan	20	347	200	567
21.	Tamil Nadu	46	65	13	124
22.	Telangana	0	12	11	23
23.	Tripura	0	51	110	161
24.	Uttar Pradesh	172	167	201	540
25.	Uttarakhand	242	815	379	1436
26.	West Bengal	0	75	84	159
27.	Andhra Pradesh	30	0	58	88
	Total	**9944**	**14413**	**12079**	**35088**

Note: (a) considering that one small biogas plant is meeting out the cooking needs of one household; and (b) MNRE have not allocated the annual target for the FY 2021-22.

ANNEXURE-III

REFERRED TO IN REPLY TO THE LOK SABHA UNSTARRED QUESTION NO.2774, Part (b) TO BE ANSWERED ON 06.08.2025 ON "BIO-GAS PLANTS".

Table: The year wise details of cattle dung being utilized for biogas production

Year	Installed biogas plants (numbers)	Quantum of cattle dung being utilized for installed biogas plants (million ton per annum)	Quantum of cattle dung generated in the country (million ton per annum)	cattle dung utilization in percent
2022-23	9944	0.164	554.8	0.03 %
2023-24	13065	0.216	554.8	0.04 %
2024-25	12079	0.199	554.8	0.04 %
Total	35088	0.579	1664.4	0.03 %

Note:

(i) Average dung generation: 10 kg/animal
(ii) Recovery of dung per cattle: 50 %
(iii) Dung requirement for 1 m3 of Biogas Production: 25 kg
(iv) Operational days of biogas plants: 330 days
(v) Size of biogas plants: 2 m3

Source: 20th national livestock census (2019), Ministry of Fisheries, Animal Husbandry and Dairying, Government of India.