

GOVERNMENT OF INDIA
MINISTRY OF POWER

RAJYA SABHA
UNSTARRED QUESTION NO.793
ANSWERED ON 10.02.2025

USE OF BIO-GAS BY THERMAL POWER PLANTS

793 SHRI VIKRAMJIT SINGH SAHNEY:

Will the Minister of **POWER** be pleased to state:

- (a) the quantum of Bio Gas from crop residue stubble being used by various thermal plants in the country, tonnage-wise, thermal power plant-wise;
- (b) whether Government is planning to incentivise the farmers who are not burning stubble and processing it to be sent to Bio Gas/Thermal Plant, if so, the details thereof, if not, the reasons therefor; and
- (c) whether Government is planning to incentivise the stubble processing plants, if so, the details thereof, if not, the reasons therefor?

A N S W E R

THE MINISTER OF STATE IN THE MINISTRY OF POWER

(SHRI SHRIPAD NAIK)

(a) : Biogas from crop residue stubble is not being used in Thermal Power Plants (TPPs). However, Biomass pellets made from crop residue are being co-fired in TPPs along with coal.

(b) & (c) : The Government of India has taken various measures to utilize stubble and tackle air pollution caused by stubble burning, which include:

- (i) Ministry of Agriculture & Farmers Welfare (MoA&FW) in 2018 launched scheme for providing subsidy for purchase of crop residue management machinery and establishment of Custom Hiring Centres (CHCs) in National Capital Territory (NCT) of Delhi and the States of Punjab, Haryana and Uttar Pradesh for in-situ management of paddy straw. The scheme provides 50% financial assistance to farmers for purchasing crop residue management machinery, and 80% assistance to rural entrepreneurs (Rural youth & Farmer as an entrepreneur), Cooperative Societies of farmers, Farmer Producer Organizations (FPOs) and Panchayats for setting up Custom Hiring Centers. It also offers 65% financial support (up to Rs. 1.5 crore) for paddy supply chain projects involving machinery like tractors and balers. During the period from 2018 to 2024-25 (till 31.01.2024), a total of Rs. 3698.45 crores have been released (Punjab - Rs. 1756.45 crores, Haryana - Rs. 1081.71 crores, Uttar Pradesh - Rs. 763.67 crores, NCT of Delhi - Rs. 6.05 Crores and ICAR-Rs. 83.35 crores). The states have distributed more than 3.00 lakh machines to the individual farmers and to more than 40,000 Custom Hiring Centres in these 4 States, which also include more than 4,500 Balers & Rakes which are used for collection of straw in the form of bales for further ex-situ utilization.

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- (ii) Ministry of New and Renewable Energy (MNRE), Government of India notified the National Bioenergy Programme (NBP) on November 2nd, 2022 for the period from FY 2021-22 to 2025-26. The Programme was recommended for implementation with a budget outlay of Rs. 858 Crore. The NBP of MNRE aims to promote the use of bioenergy and waste-to-energy technologies to enhance energy security and support sustainable development in India and sustainable use of biogenic waste for energy production.

MNRE has been implementing the following three Bioenergy schemes under the umbrella of National Bioenergy Programme (NBP):

- a. **Waste to Energy programme:** The objective of the programme is to support setting up of waste to energy projects for generation of Biogas/ Bio-CNG/ Power / producer or syngas from urban, industrial and agricultural waste / residues;
- b. **Biomass Power programme:** The objective of the programme is to support setting up of biomass-based briquettes / pellets manufacturing plants and to support biomass (non-bagasse) based Cogeneration Projects in Industries in the country; and
- c. **Biogas programme:** This programme focuses on supporting small and medium size biogas plants (ranging from 1 to 2500 m³ biogas generation per day) to provide clean cooking fuel and decentralized power and thermal applications by use of animal waste and other suitable waste for anaerobic digestion.

Crop residue stubble is being used as a feedstock for various bioenergy projects such as generation of biogas, manufacturing of briquette & pellets, compressed biogas (CBG) and biomass (non-bagasse) based Cogeneration Projects. The Central Financial Assistance (CFA) being provided under the NBP by MNRE is placed at **Annexure**.

- (iii) Central Pollution Control Board (CPCB) provides one-time financial support under Environment Protection Charge (EPC) funds for establishment of palletisation and Torrefaction plants to promote utilisation of paddy straw. Under this scheme, for setting up of palletisation plant, Rs. 28 lakhs per tonne per hour (TPH), or 40% of the capital cost considered for plant and machinery of a 01 TPH plant, whichever is lower, is provided as one-time financial assistance with a maximum total financial support of Rs. 1.4 crore per proposal. For setting up of torrefaction plants, Rs. 56 lakhs per TPH, or 40% of the capital cost considered for plant and machinery of a 01 TPH plant, whichever is lower, is provided as one-time financial assistance with a maximum total financial support of Rs. 2.8 crore.
- (iv) Ministry of Power revised the biomass policy on 16.06.2023, amending the earlier policy of 08.10.2021. The revised policy mandates a 5% biomass co-firing in Thermal Power Plants (TPPs) along with coal from FY 2024-25, with the obligation increasing to 7% from FY 2025-26.
- (v) Ministry of Petroleum and Natural Gas (MoP&NG) has launched “Sustainable Alternative Towards Affordable Transportation (SATAT)” initiative on 1st October 2018, with the aim of establishing an ecosystem for production and use of Compressed Bio Gas (CBG) produced from various waste/ biomass sources including Agri-residue. MoP&NG has also implemented a Scheme for providing financial assistance to CBG producers for procurement of biomass aggregation machinery. Under this scheme maximum financial assistance of 50% of the procurement cost of biomass aggregation machinery or Rs. 90 lakh per set (whichever is less) is being provided to CBG producers. The financial assistance of Rs. 1.8 crore for 4 tonnes per day (TPD) CBG capacity project would be provided with a capping of Rs. 9 crore per project on pro rata basis.

ANNEXURE REFERRED IN REPLY TO PARTS (b) & (c) OF UNSTARRED QUESTION NO. 793 ANSWERED IN THE RAJYA SABHA ON 10.02.2023

1	Waste to Energy Programme	Central Financial Assistance (CFA) in Rs Crore
1.1	Biogas generation	Rs 0.25 Crore per 12000 Cum/day
1.2	BioCNG generation	Rs 4.0 Crore per 4800 kg/day (for BioCNG generation from new biogas plant) Rs 3.0 Crore per 4800 kg/day (for BioCNG generation from existing Biogas plant)
1.3	Power generation based on Biogas	Rs 0.75 Crore/MW (for power generation from new biogas plant) Rs 0.5 Crore/MW (for power generation from existing Biogas plant)
1.4	Power based on bio & agro-industrial waste	Rs 0.4 Crore/MW
1.5	Biomass Gasifier	Rs. 2,500 per kWe with dual fuel engines for electrical application Rs. 15,000 per kWe with 100% gas engines for electrical application Rs. 2 lakh per 300 kWth for thermal applications

2	Biomass Programme	CFA
2.1	Briquette manufacturing plants	Rs. 9.00 Lakhs/ TPH (Maximum CFA- Rs. 45.00 Lakh per project).
2.2	Non-Torrefied Pellet manufacturing plant	Rs. 21 lakhs/MTPH production capacity or 30% of the capital cost considered for plant and machinery of 1 TPH plant, whichever is lower (Maximum Rs. 105 lakhs per project)
2.3	Torrefied Pellet manufacturing plant	Rs. 42 lakhs/MTPH production capacity or 30% of the capital cost considered for plant and machinery of 1 TPH plant, whichever is lower (Maximum Rs. 210 lakhs per project)
2.4	Non-Bagasse Cogeneration Projects	Rs. 40 Lakhs/ Megawatt Maximum CFA- Rs. 5.00 Crore per project).
