

The Waste-to-Energy Programme

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Topic- Growth and Development [GS Paper-3]

Context- The Centre has recently issued guidelines for rolling out its waste-to-energy programme, paving the way for companies to produce biogas and bioCNG, and electricity from urban, industrial and agricultural waste and residues.

Key Highlights

- Through the programme the government has planned to offer financial assistance to project developers, while implementing agencies, including inspection firms, will be paid service charges for commissioning the waste-to-energy plants.
- The programme is part of an umbrella scheme, the National Bioenergy Programme , which has an outlay of ₹858 crore for phase-I. Nearly ₹600 crore has already been allocated for the waste-to-energy programme.
- The rules were implemented after the President sanctioned the implementation of the umbrella scheme, which also comprises the biogas and biomass programmes.
- The Indian Renewable Energy Development Agency (IREDA) will be the implementing agency for the programme.
- According to the guidelines, standard central financial assistance for the biogas projects will be ₹25 lakh for 12,000 cubic meters a day.
- The maximum assistance for a biogas project was set at ₹5 crore where the Centre will provide financial assistance of ₹75 lakh per MW for new biogas plants and ₹50 lakh per MW for existing units.
- If the waste-to-energy plants are set up in special category states, such as the North

East, Himachal Pradesh, Sikkim, Jammu and Kashmir, Ladakh, Lakshadweep, Uttarakhand, and Andaman & Nicobar Islands, the eligible CFA will be 20% higher than the standard CFA pattern.

- IREDA will be paid a service charge of 1% of CFA to process applications, besides 1% for the CFA (minimum ₹50,000) for implementing, and monitoring the performance once the plants are commissioned.

National Bioenergy Programme

- The Ministry of New & Renewable Energy declared to continue the National Bio Energy Programme till 2025-26 with a budget outlay of Rs 858 crore for the first phase.
- The programme will promote the use of huge surplus biomass, cattle dung, and industrial and urban biowaste available in the country for energy recovery.
- The programme was recommended for implementation in two Phases where
 - Phase-I has been approved with a budget outlay of Rs 858 crore.
- The National Bioenergy Programme will include the three Sub-schemes i.e.
 - Waste to Energy Programme
 - Biomass Programme
 - Biogas Programme.
- The Waste to Energy Programme i.e. Programme on Energy from Urban, Industrial and Agricultural Wastes /Residues will support the setting up of large Biogas, BioCNG and Power plants.
- Biomass Programme i.e. Scheme to Support Manufacturing of Briquettes & Pellets and Promotion of Biomass based cogeneration in Industries will support the setting up of pellets and briquettes for use in power generation and non-bagasse-based power generation projects.
- The Biogas programme will support the setting up of family and medium size Biogas in rural areas.
- The scheme shall help in creating the whole investor-friendly ecosystem based on a circular economy, where biogas plays the central role in impacting the environment, job creation, reduction in crude oil imports, promoting organic cropping, and even energy independence in a positive manner.

Biogas

- Biogas mainly comprises hydro-carbon which is combustible and can produce heat and energy when burnt.
- It is produced through a biochemical process in which particular types of bacteria convert the biological wastes into useful bio-gas.
- As the gas originates from a biological process, it has been termed as bio-gas.
- Methane gas is considered as the main constituent of biogas.

BioCNG

- It is a renewable fuel obtained by purifying biogas in contrast to Compressed Natural Gas (CNG), a non-renewable source of energy.
- Bio CNG is similar to natural gas in terms of its composition and properties, and is a

cleaner alternative to fuels such as petrol and diesel.

Significance of Bio Energy

- The biogas solution can help keep the cities clean and pollution-free.
- It helps in removing toxic substances from landfills that contaminate the groundwater.
- Decomposing organic matter releases huge amounts of methane into the environment, causing air pollution and global warming as methane is a very potent GHG. Hence installing large-scale municipal biogas systems can help cities handle organic waste efficiently to overcome the environmental and socio-economic challenges posed by overburdened landfills.
- Municipal waste can be put into these plants to create clean and green fuel, along with biofertilizers, while keeping the cities clean and hygienic.
- Switching to biogas could be helpful for women because they won't be exposed to harmful smoke and pollution.
- As the female members of a household are affected by indoor pollution as they spend more time inside the house.
- Biogas can also play a critical role in transforming the energy dependence of rural and agricultural communities, which majorly depends on burning wood, dung, charcoal, coal and other fossil fuels for their energy needs.

Indian Renewable Energy Development Agency (IREDA)

- IREDA is a mini ratna company that works under the Ministry of New and Renewable Energy (MNRE).
- The company was set up in 1987 as a specialized non-banking finance agency for the renewable energy sector.
- It plays a key role in the renewable energy project financing which gives confidence to the financial institutions or banks to lend in the sector.