# Incineration and Solid waste management

## Why in news?

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- The Niti Aayog, in its Draft Three Year Action Agenda, has drawn attention to the need for a sustainable plan for solid waste management in Indian cities.
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- The Aayog has taken the stand that incineration or “Waste to Energy” is the best option as a sustainable disposal solution for the solid waste of larger cities.
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## What is Incineration?

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- Incineration is a **waste treatment process** that involves the combustion of organic substances contained in waste materials.
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- Incineration of waste materials converts the waste into ash, flue gas and heat.
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- The ash is mostly formed by the inorganic constituents of the waste, and may take the form of solid lumps or particulates carried by the flue gas.
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- In some cases, **the heat generated by incineration can be used to generate electric power.**
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- Incineration with energy recovery is one of several waste-to-energy (WTE) technologies such as **gasification, pyrolysis and anaerobic digestion.**
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## What are the drawbacks of Incineration technology?

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- WTE is moving fast, regulatory challenges are enormous and the challenges of enforcing emission standards are even greater.
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- The Niti Aayog fails to point out that when incineration plants in cities use unsegregated waste to generate electricity, **they emit toxic gases as by-products** and irresponsibly dispose of these “dangerous by-products” in the air.
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- Incineration technologies require a continuous supply of waste with a sufficiently high calorific value and low moisture content.
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- Researchers found that **Indian waste is not suitable for incineration** because it has **too high a moisture content,** leading to low calorific value.
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- The Niti Aayog is silent on the segregation of wet waste from dry waste at the source of generating waste.
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- No revenue is available for a new Central corporation on solid waste management; the land on which plants will be built also belongs to urban local governments or state governments.
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## What could be done?

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- **Incentives for segregation** and a **penalty for non-segregation** must be the first action point of any agenda on municipal solid waste management.
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- If segregated at source, it can be collected and delivered at a local Bio-methanation plant for anaerobic processing.
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- **Bio-methanation allows the capture of biogas** which can be used for cooking or for electricity generation, it also produces liquid fertiliser.
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- If this practice is followed across the country, 50% of the wastes in urban India need not to be hauled over long distances to waste to energy plants and landfills.
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- The decentralised strategy for treating biodegradable waste is as much relevant for large cities as for small.
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## What is the way forward?

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- The Niti Aayog has recommended setting up a **Waste to Energy Corporation of India** under the Ministry of Urban Development, "Which may set up world-class waste to energy plants through public-private partnerships (PPP) across the country".
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- The policy focus must not sway from examining the financial and environmental costs and benefits of the different alternatives for waste management.
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- India do not have effective mechanisms for monitoring emissions, the health hazard becomes even more challenging.
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- Niti Aayog must follow up with **extensive consultation** with subject experts, stakeholders and practitioners in state governments and urban local governments.
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- Individual households, housing societies, Resident Welfare Associations and bulk generators should be at the centre of the movement to get segregation.
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- The waste must be delivered to the plant in closed containers and processed within a specified short period, while the biogas and liquid fertiliser must be used to derive environmental benefits.
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**Source: Indian Express**

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