TANDA

एनटीपीसी NTPC

Integrated Waste Management at NTPC Tanda

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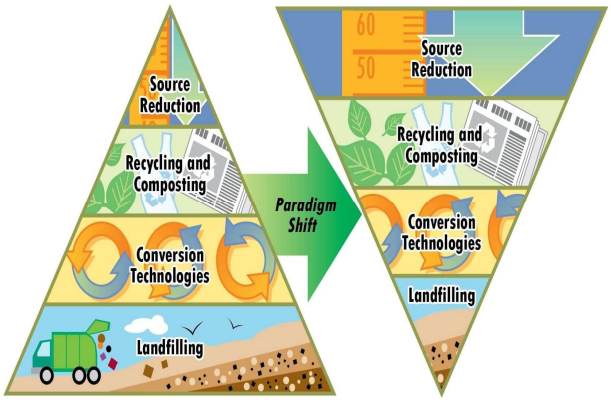
Approach for Waste Management

Integrated Solid Waste Management

'Strategic approach to sustainable management of solid wastes covering all sources and all aspects:

- •generation,
- •segregation,
- •transfer,
- •sorting,
- •treatment,
- •recovery and disposal

The strategy puts emphasis on maximizing resource use efficiency.



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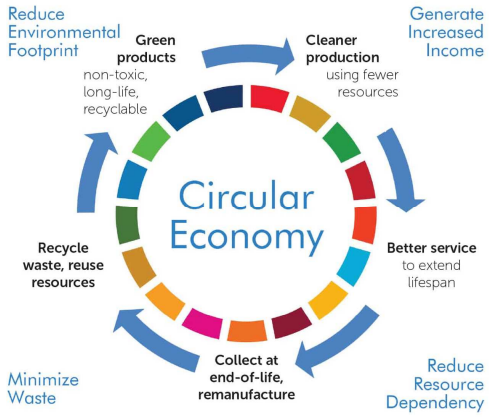
Circular Economy Model for Waste Management



Circular Economy Model

Employs not only waste management, but **reuse, recycling** and responsible manufacture could support the development of new industries and jobs, reducing emissions and increasing efficient use of natural resources (including energy, water and materials

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Waste Management in India

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Solid Waste Management Rules, 2016
By MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE

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NTPC Environment Policy
(latest revision 2021)
Objective: "To provide cleaner energy by committing to highest possible levels of performance in environmental compliance, practices and stewardship."

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Guidelines for Waste Management at NTPC Stations

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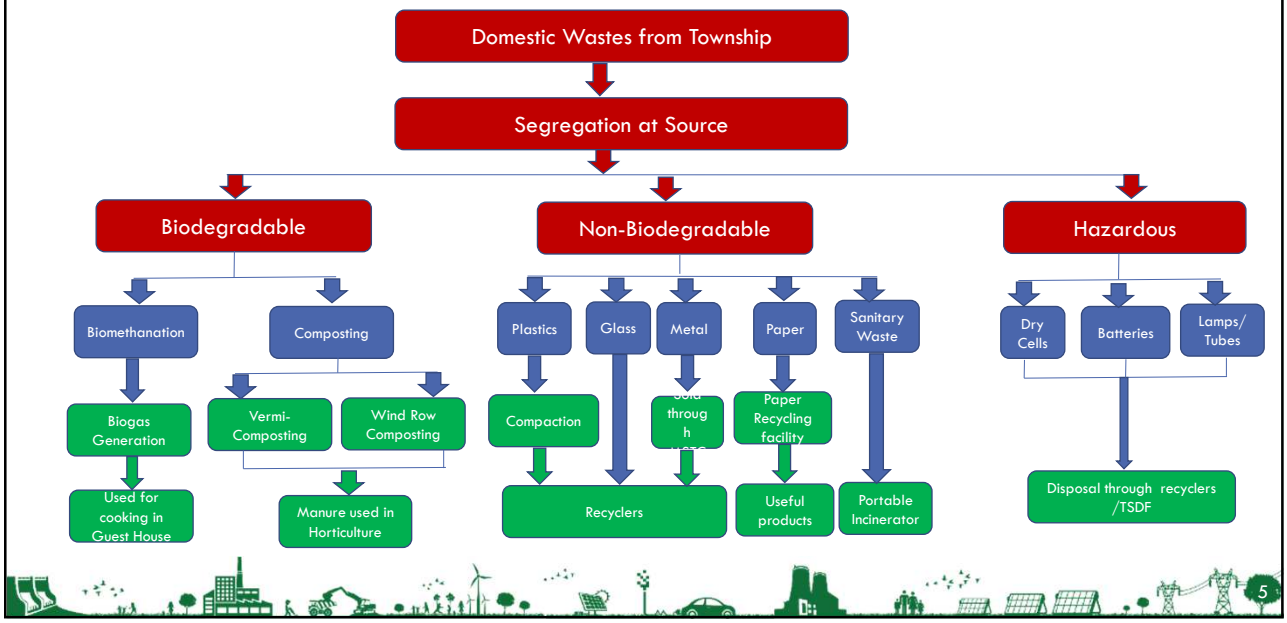

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Domestic Waste Management

HIGHLIGHTS

- **Expert Agency engaged**
- **Source Segregation**
- **Processing Shed**
- **Compaction of wastes**
- **Composting facility**
- **Incinerator for sanitary waste**
- **Disposal to local vendors/ recyclers**

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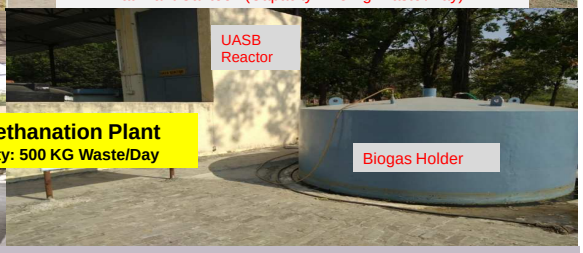
Vermi Composting

Organic Waste Composting Machine
at Plant Canteen (Capacity: 125 Kg Waste /Day)

Acidification Tank

Biomethanation Plant
Capacity: 500 KG Waste/Day



UASB Reactor

Biogas Holder

Waste Management Facilities at NTPC Tanda

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- **Recycling of Waste Paper**
- **Employment to 'Divyang' people**
- **Utilization of Waste**

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Uniqueness of the Project

The solid waste management model employs best technologies and processes to recover energy and useful materials without adversely impacting environment.

In the Bio methanation process, the microbial consortia in UASB destroys more than 90% of the organic content and produces high calorific value biogas (70-75% methane).

Horticulture waste is effectively converted to manure by windrow composting and vermi composting. This manure is consumed in parks, gardens and horticulture management. The manure is also given free of cost to the colony residents for managing the kitchen gardens developed individually.

Sanitary wastes are disposed off in a scientific manner so that there is no adverse environmental impact.

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Tangible Benefits of the Integrated Waste Management

S. No.	Tangible Benefit
1	LPG consumption reduced
2	Green House Gas emission avoided
3	Compost fertilizer Utilization
4	Conservation of Natural Resource Scrap metal reuse
5	Employment Generation
6	Reduction in fresh packaging material procurement

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Intangible Benefits

S. No.	Intangible Benefit
1	Clean & Hygienic Environment
2	Sustainable operations
3	Support to 'Plastic Free Township' campaign
4	Reduces the burden on landfills

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Replication Potential within Group Companies

- The Integrated Waste Management approach has been shared among within and outside the organization to encourage all for better waste management.
- Experience shared through video messages and Technical Paper and Demonstration for successful replication.
- Other NTPC stations have been approaching for adoption of the concept. Waste Processing facilities are being developed at other NTPC stations based on NTPC Tanda model.
- Biomethanation plants are being setup at many stations of NTPC based on NTPC Tanda model.
- Waste Paper recycling facilities are being setup at other NTPC stations based on NTPC Tanda model.
- Local vendors are taking interest in getting recyclable wastes resulting into more and more recycling of non-biodegradable wastes.

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Achieving National Benchmark / standards

- Total control from open dumping, burning of waste.
- Issue of stray animals at open dump sites resolved.
- Successful working of Project on sustainable basis.
- Corporate Centre is recommending other NTPC stations to learn from NTPC Tanda model.
- Compliance to Solid Waste Management Rules is being ensured.

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Major learning from the project implementation

- Biomethanation Plant operational parameters needs to be maintained for maximum gas generation.
- Segregated storage compartments are required for effective segregation of wastes.
- Adequate moisture and ventilation is required at composting sites.
- Shredding of bigger size waste is required before feeding into bio-methanation plant and composting.
- Regular awareness needs to be given to township residents for segregation at source.
- Waste Compactor is very useful in handling the huge amount of plastic and paper wastes.
- Workers engaged in waste management needs to be given gloves, shoes and hygienic environment for working.

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Management of Industrial Wastes at NTPC Tanda

Wastes	Source of Generation	Disposal Method
Misc. Ferrous Scrap	Operation and Maintenance of Power plant	Sold through M/s. MSTC
Non-Ferrous Scrap		Sold through M/s. MSTC
Coal Ash	Coal combustion	Used by Cement Plant, Brick Plants, NHAI Road projects
Used Oil	O&M of Plant Equipments	Sold through M/s. MSTC
Bio-medical waste	Hospital	Disposed through UPPCB approved agency
E-Waste	Computers & Peripherals, Phones, C&I systems	Sold through M/s. MSTC
Insulation Waste	Operation and Maintenance of Power plant	Authorized TSDF
Used Resin	DM Plant	Authorized TSDF

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Biomass Pallet firing with Coal

Cumulative consumption till 30.06.2021 is 996 MT.

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Thank You

Beautiful Bird species at NTPC Tanda

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