

“Nirmal” City Waste Incinerators

Mission: Clean India by

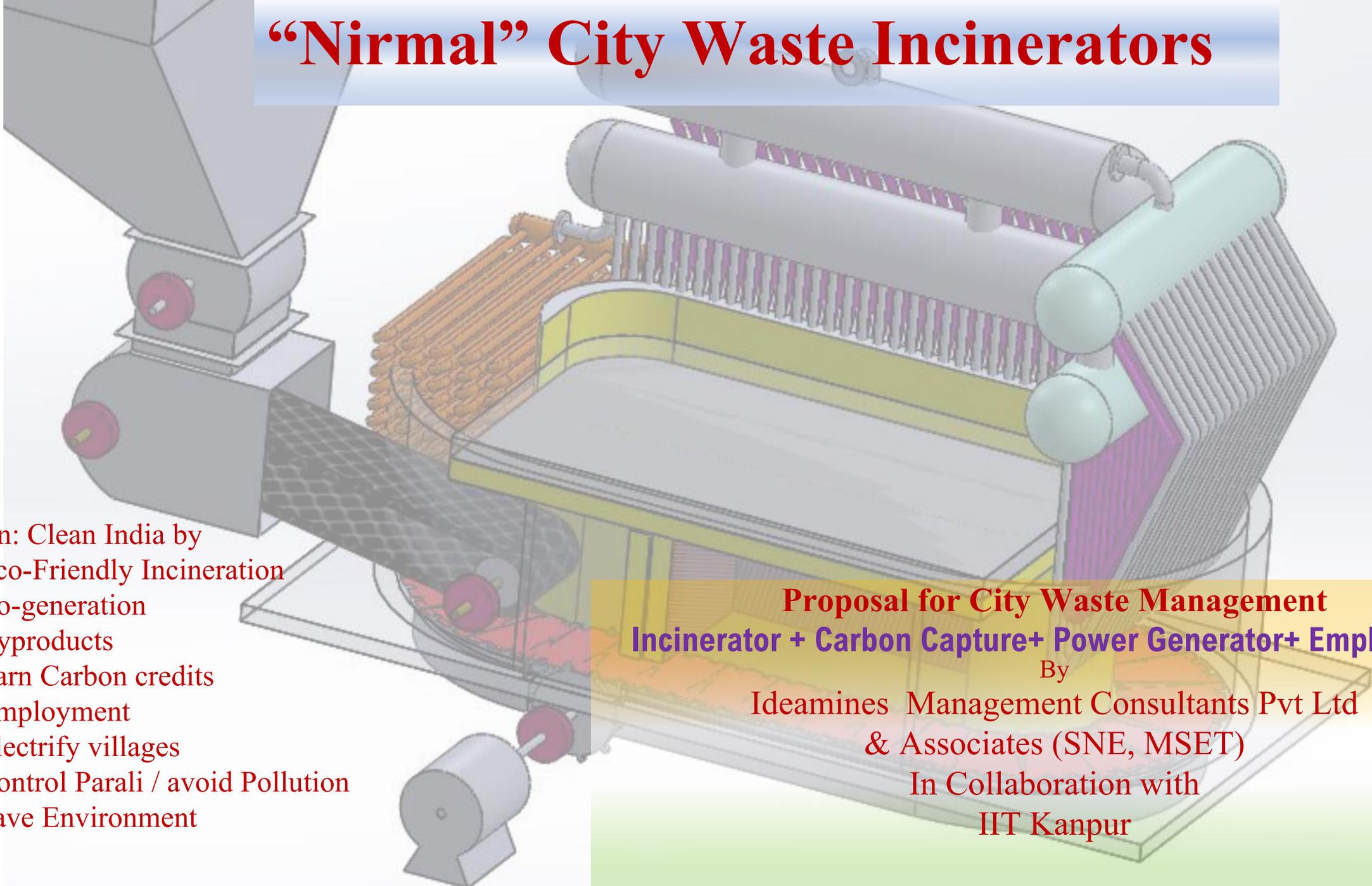
- Eco-Friendly Incineration
- Co-generation
- Byproducts
- Earn Carbon credits
- Employment
- Electrify villages
- Control Parali / avoid Pollution
- Save Environment

**Proposal for City Waste Management
Incinerator + Carbon Capture+ Power Generator+ Employment**

By

Ideamines Management Consultants Pvt Ltd
& Associates (SNE, MSET)

In Collaboration with
IIT Kanpur



Advantage:

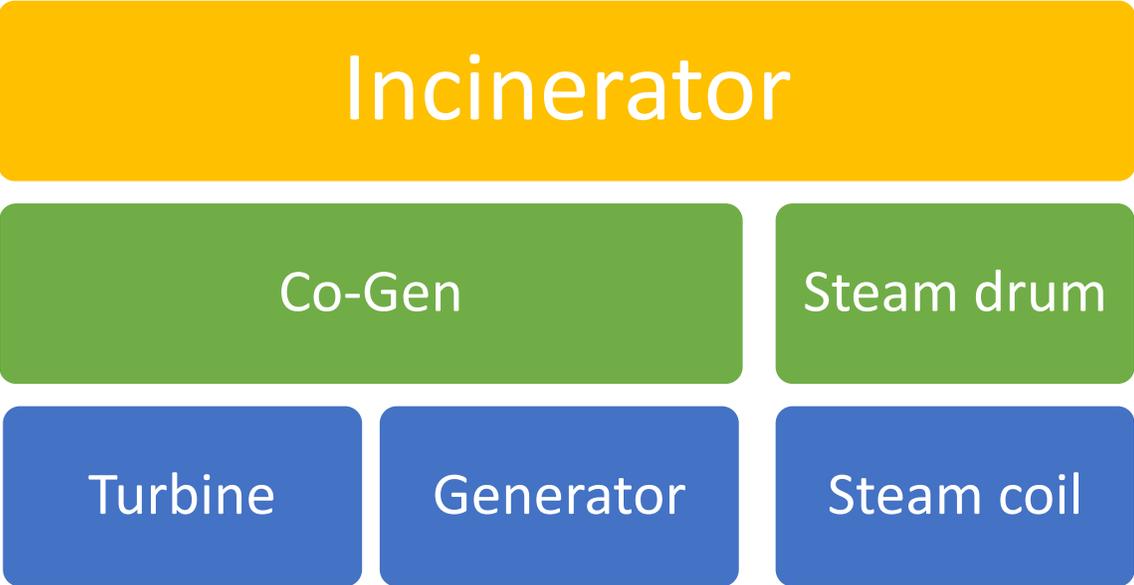
1. **Eco-Friendly Waste Management**
2. **No CO₂, CO, H₂S, NH₃, CH₄, Obnoxious Gases/Odor – KOH/CAO/NaOH based designs**
3. **Homes, Societies, Municipalizes level designs keeps City clean + Generates Power.**
4. **Village *Parali* managed in situ without causing Pollution + Generates Power.**
5. **No Garbage Segregation – *Enhances feasibility***
6. **Small Systems – *Low CAPEX, Low OPEX, increased Economics, simple Operations.***
7. **Mobile Units / Smart Cities – *Rotate in city / keep cities clean by In-situ safe Eco friendly incineration***
8. **By Products for Refractory Industry/Cement/Rural Housing/ EV batteries**
9. **No Odor – *Pre combustion feeder has Activated carbon treater. The area remains sanitized/fresh.***
10. **High Business Potential - *for national/International business***
11. **Increased Employability**

Process & Stages:

Stage 1 – Pilot Test / Externally Powered



Stage 2 – Cogen Added



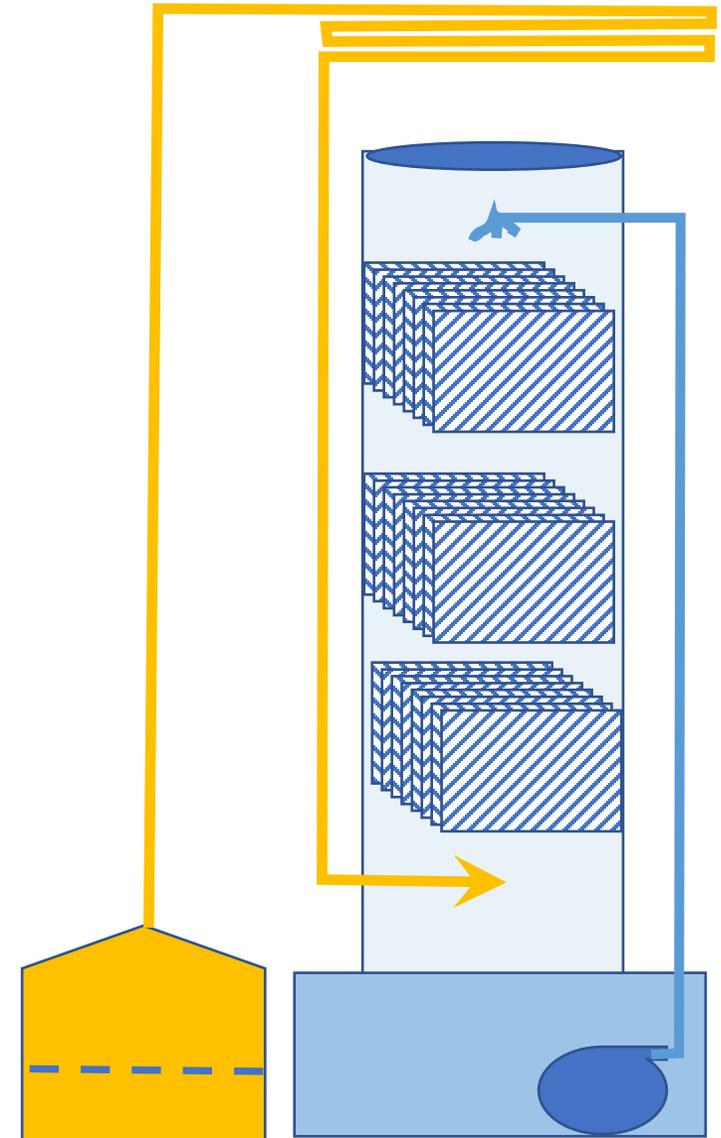
Stage 3 – Mobile Unit



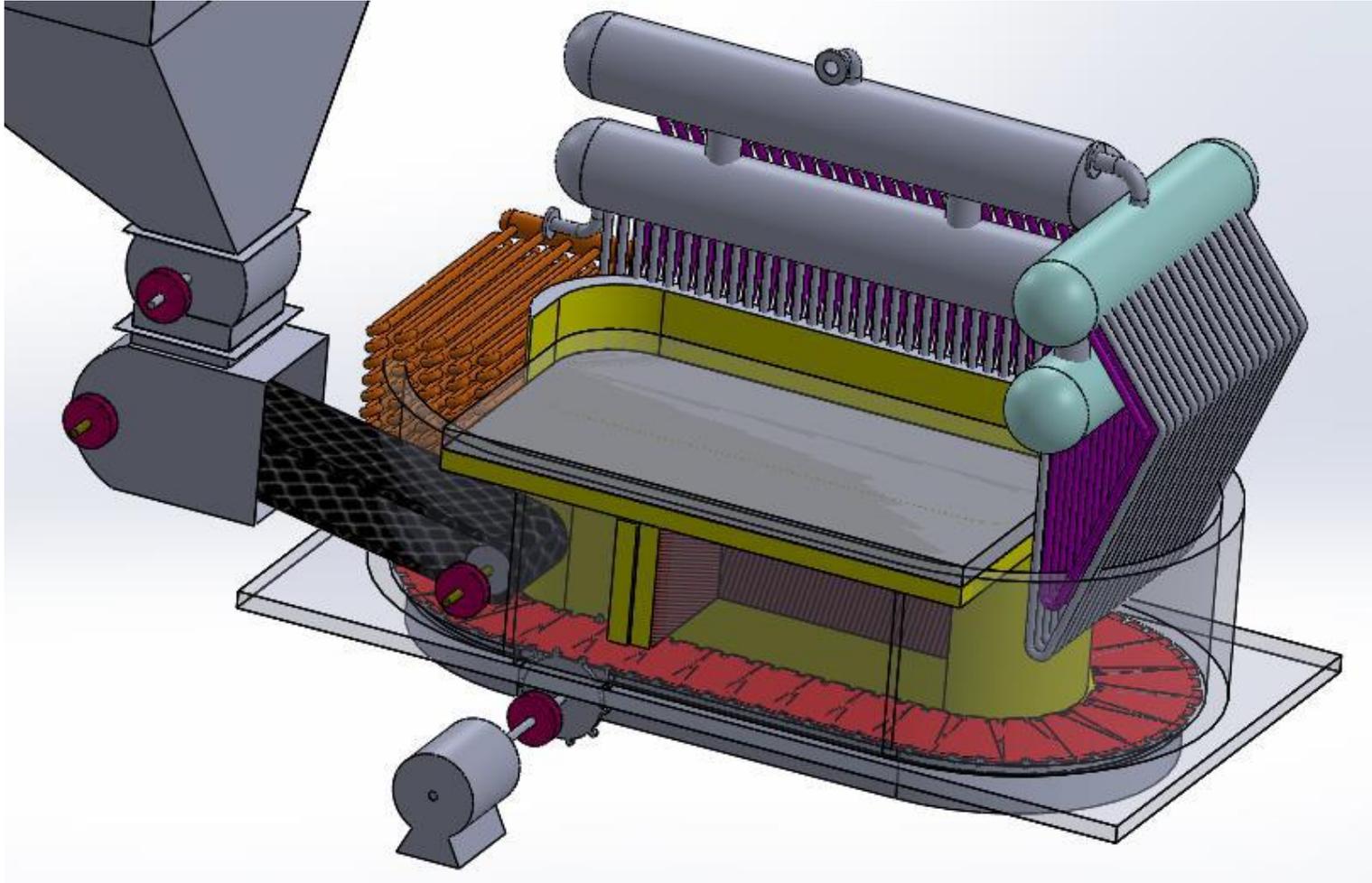
Compact & efficient Design is the Key

Project stages – Stage 1: Prototype Development

- Prototype Development to test the Concept of incineration and CO₂ absorption study using various Chemisorbers, KOH, NaOH, CAO+H₂O (Lime solution) . Li (OH)₃ if battery industry interested to take the LiCO₃.
- Patent will be applied by Concept developer. Royalty may be shared with IITK. Capital investment from TDB or startup financing bodies
- IIT Kanpur contribution needed to provide technical advisory on design development, troubleshooting, Testing & certification and specifications development, like CO₂uptake/measurements, Power consumption, and carbon credit earned.



Project stages – Stage 2: Pilot Plant Development



- Pilot Plant shall be a commercially viable design including power generation unit. Expected 250 KW/ton of waste.
- Designed based on Selected CO₂ Chemisorbers, KOH, NaOH, CAO+H₂O (Lime solution)
- Cost shall be born jointly by Sponsors, IIT Kanpur, TDB, SIDBI or Private Investors. Patent applied by Sponsors to secure business sinterest.
- 2% Royalty paid to IIT Kanpur for 5 years.
- IIT Kanpur contribution to provide technical advisory and certify unit specifications {CO₂ Uptake, Power generation, CC etc}

Economics model					
Column1	Column2	Column3	Column4	Column5	Column6
Unit rate,			Reference		
Consumption, kg/h		Rs/kg	Unit,	Cost Rs/h	
Costs:					
https://www.ottokemi.com/potassium-compounds/1310-58-3-hydroxide-					
Cost of CaO	1.30	10 Kg/h	13 pellets.aspx		
Cost of operations	1 manhour	150	Manhour rate	150	
Finance cost /hr				342	Considerign 10% annual cost of Equity+Debt
Total cost				505	Per hour Basis
\$22 Euro as per :					
https://www.rediff.com/money/2008/feb/05inter1.htm#:~:text=Today%2C%20one%20t					
onne%20of%20carbon,increase%2Fadd%20to%20your%20profit.					
Earnings:					
Power produced	268	6	per KW-hr	1608	
Carbon credit earned	972	\$25	\$CO2/ton	1822	
Total Earnings				3430	
Hourly Profits	Per hour			2925	
Annual Profits, 330 daysX24X7 operations				23,164,394	
Capex	30,000,000	{4 Crores}	Payback perio	1.73	
cost of finance, 10%	3,000,000.0	Annual			
	342.47	per hour			

ECONOMICS:

A thousand ton/hr Plant cost Rs 4 crores, and Payback period is 1.7 Years.

While it keeps City clean, Village parali controlled And Pollution controlled. Are additional Social value earned.

Live Carbon Prices Today

CarbonCredits.com Live Carbon Prices	Last	Change	YTD
Compliance Markets			
European Union	€74.04	+0.72 %	-7.70 %
California	\$28.99	-	-9.46 %
Australia (AUD)	\$32.00	-	-37.25 %
New Zealand (NZD)	\$88.40	+0.17 %	+29.15 %
South Korea	\$13.90	-1.84 %	-42.97 %
China	\$8.11	-0.34 %	+6.60 %
Voluntary Markets			
Aviation Industry Offset	\$3.13	-	-60.88 %
Nature Based Offset	\$5.38	-	-61.79 %
Tech Based Offset	\$1.48	-	-70.87 %

CarbonCredits.com Real-time Pricing (Updates Every 5 Mins)

Click [here](#) to learn how carbon credits are priced.

Applications – Green ways to Manage Waste

- Home Incinerators:
 - Personal Waste management units installed in houses, roof top, or balconies.
 - Society waste management units- without power
 - Village *Parali* Management in situ without causing pollution
- Pilot Size Incinerators:
 - Society Waste Management – with power Generation, and carbon credits.
 - Municipality Waste Management with power generation and carbon credits earned
 - Village *Parali* Management in situ without causing pollution + Power for villages tube wells etc.

GOV of India website, has been promoting Incinerator based power systems. <https://mnre.gov.in/waste-to-energy/current-status>