



# Municipal Waste Management

Concept and Methods

**Noteya**  
INNOVATIONS



VENTURE  
WASTE 2 ENERGY



SNOW STONE

1. OBJECTIVE OF THE PROJECT
2. IDENTIFICATION OF NEEDS
3. OUR APPROACH
4. PROPOSED TECHNOLOGY
5. POSITIVE IMPACTS



**Venture Waste to Energy Pvt. Ltd. (Vw2E)**, proposes an outline for Waste-to-Energy Project for management of Municipal Solid Waste (MSW) in combination of Anaerobic Digestion (Biogas) and Low Thermal Temperature Decomposition (LTTD). We utilize proprietary technologies for both Anaerobic Digestion and LTTD technology, water purification/treatment, gas upgradation/refinery (Bio CNG) and waste segregation process by integrating the innovations of our technical team and partners.

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# OUR PHILOSOPHY

Municipal Solid Waste (MSW) is a **COMMITMENT** to **RESOURCE RECOVERY** to promote **WASTE TO ENERGY (W2E)** through **GREEN TECHNOLOGIES** while ensuring integrated waste management

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# 01. OBJECTIVE OF THE PROJECT

To improve the quality and reliability of waste removal services with **RESOURCE RECOVERY** in compliance with **ENVIRONMENTAL STANDARDS**



# IDENTIFICATION OF NEED



## COLLECTION

Improve / modernize collection



## RESOURCE RECOVERY

Efficient & Effective mining of waste



## MODULAR SYSTEM

A modular waste management solution to cope with increasing population



## DISPOSAL

Reduce downward pressure to landfill even  
**MINIMAL/ZERO WASTE**  
LANDFILL

# OBJECTIVE OF THE PROJECT



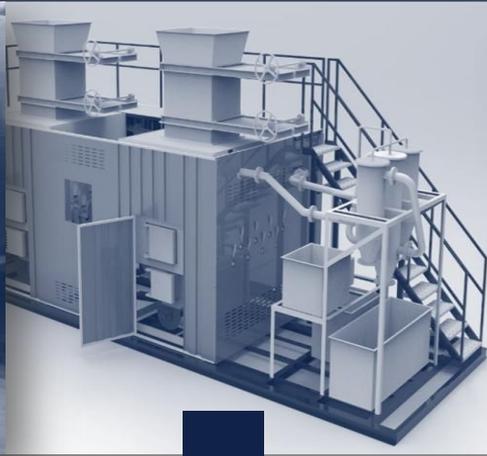
## SEGREGATION

Segregation of Waste for  
**Resource Recovery**



## BIO METHANIZATION

Production of Bio- CNG  
as  
**Renewal Energy**



## LOW TEMPERATURE THERMAL DECOMPOSITION

Decomposition of Waste  
Exothermic Reaction **Green  
Technology**



## ENERGY

Clean/Renewal Energy  
**Electricity, Bio-CNG & Fertilizer**

# IDENTIFICATION OF NEED



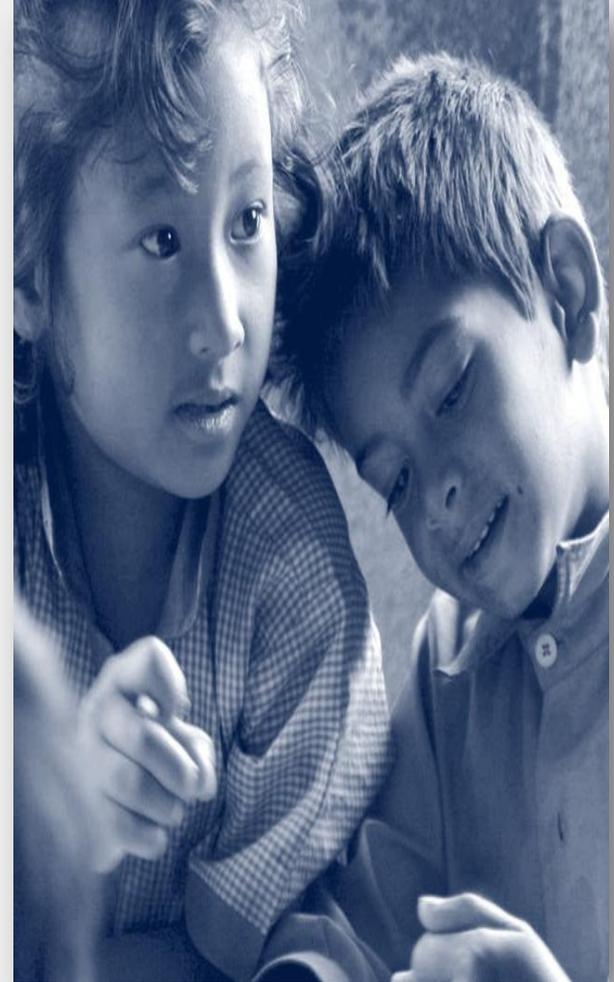
## CLEAN ENERGY

Creation of Certified  
**RENEWABLE ENERGY**

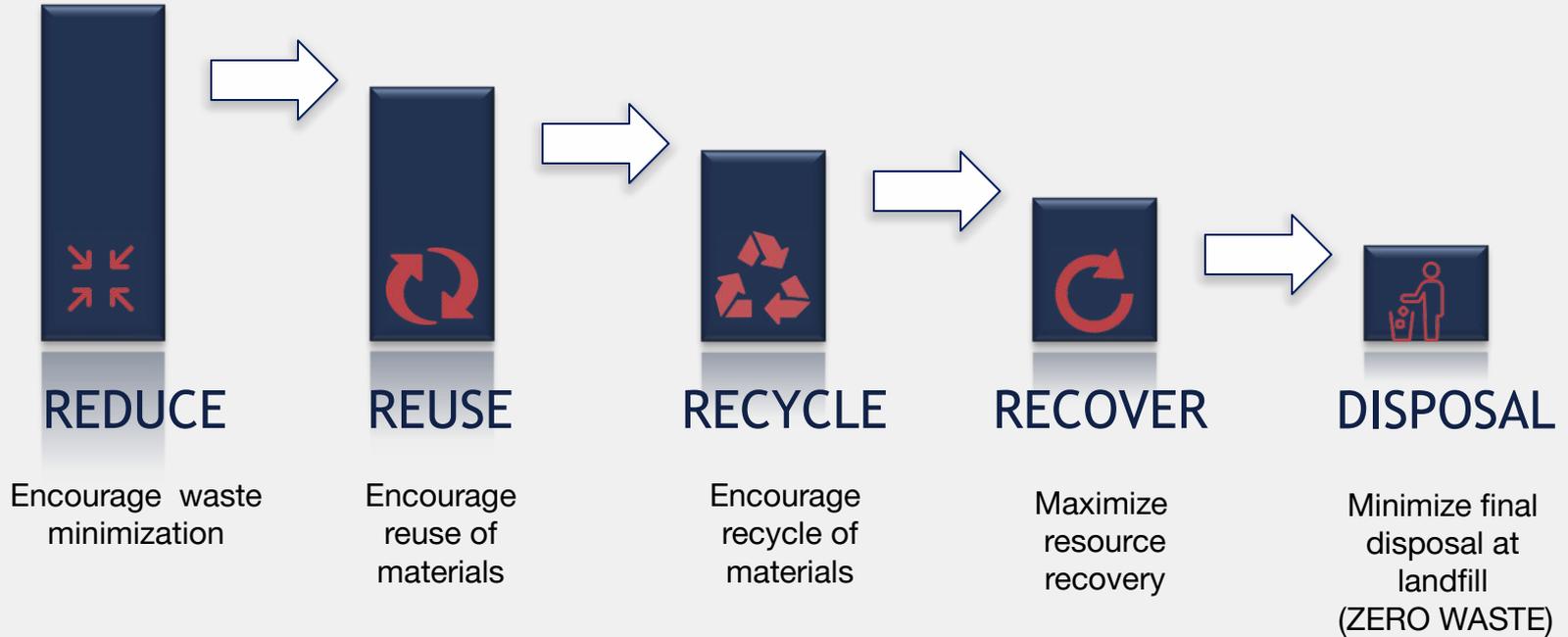
# 03. OUR APPROACH

To be able achieve **ZERO WASTE**  
without compromising the environment

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# 4 R & D APPROACH



# OUR APPROACH

## SCOPE OF WORK - VENTURE WASTE TO ENERGY (P) LTD





- Segregation Unit for Mixed Municipal Solid Waste

30 MT of Mixed Municipal Solid Waste is segregated and processed in 8 Hours Daily. 20% of the remaining waste is taken to the landfill site



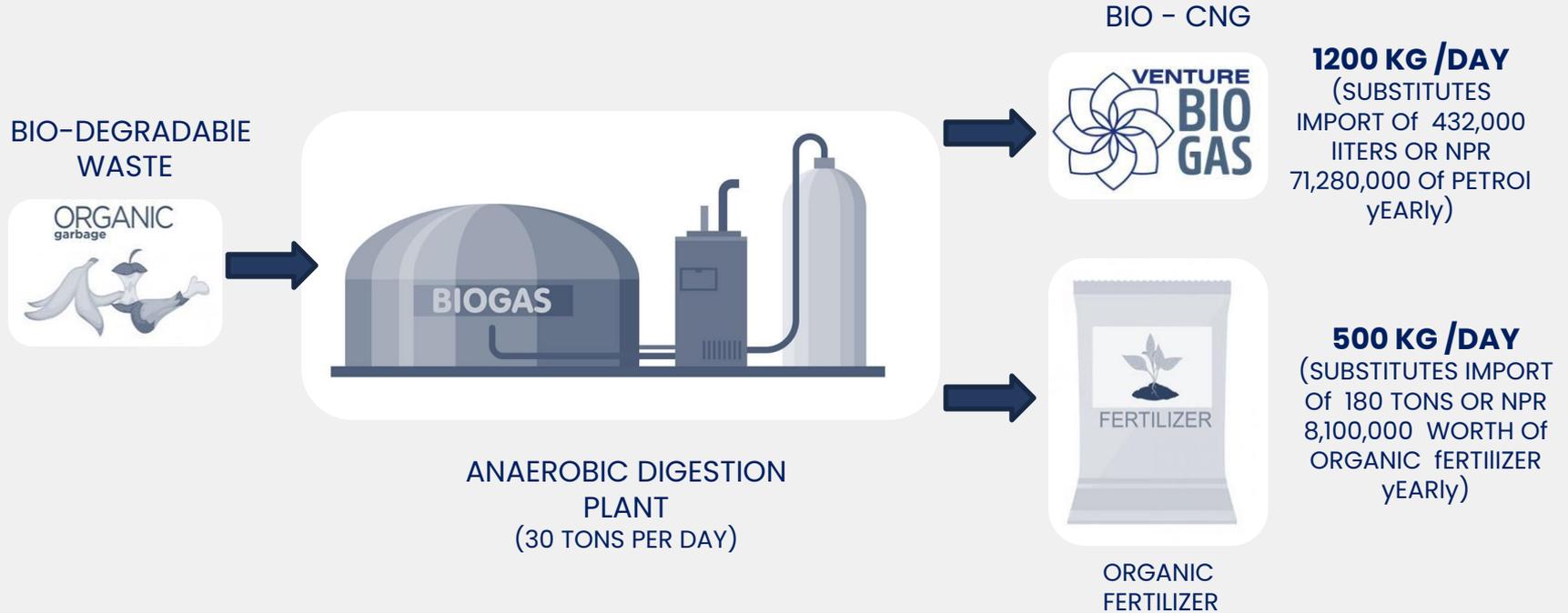
ISOLATION OF UNWANTED ELEMENTS (STEEL,  
IRON, METALS, .....



SIMULTANEOUSLY IS GOING A GLASS  
SEPARATION



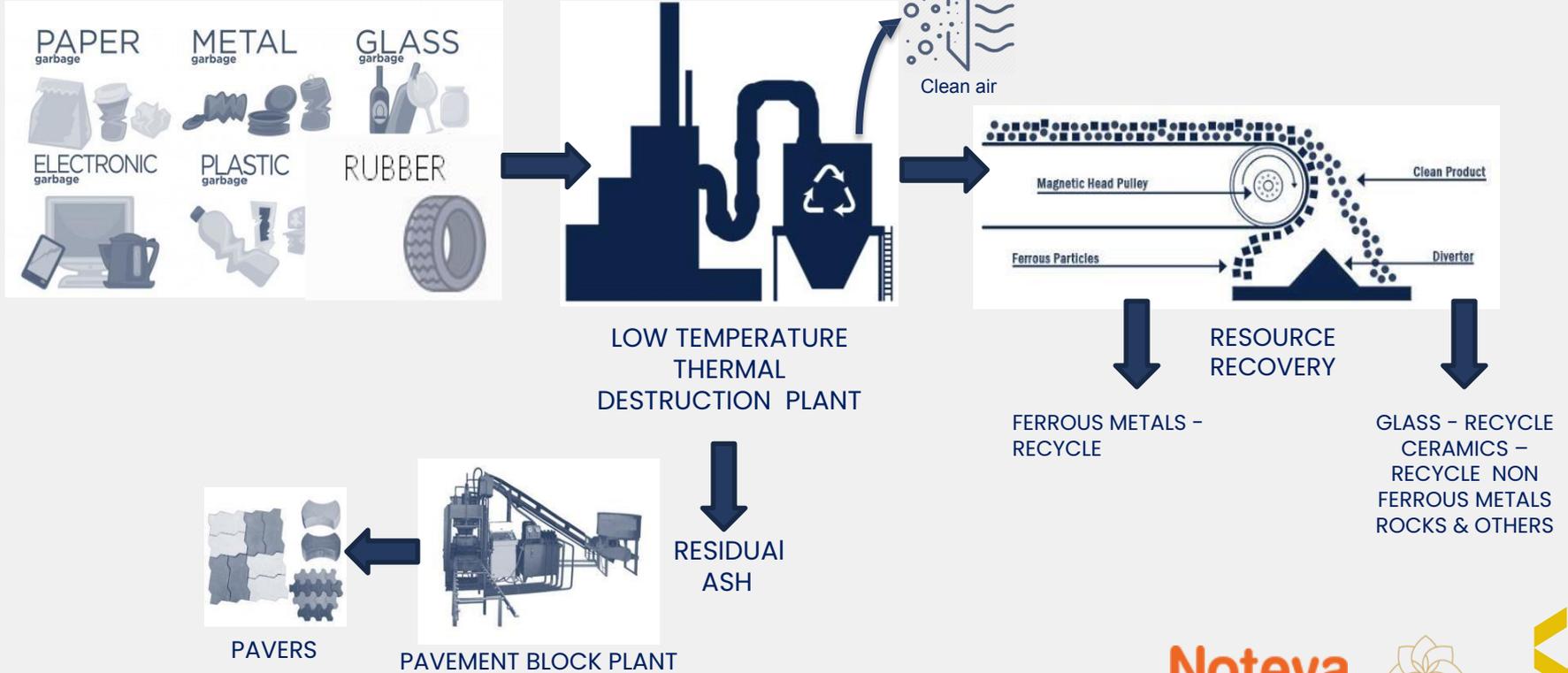
# OUR APPROACH



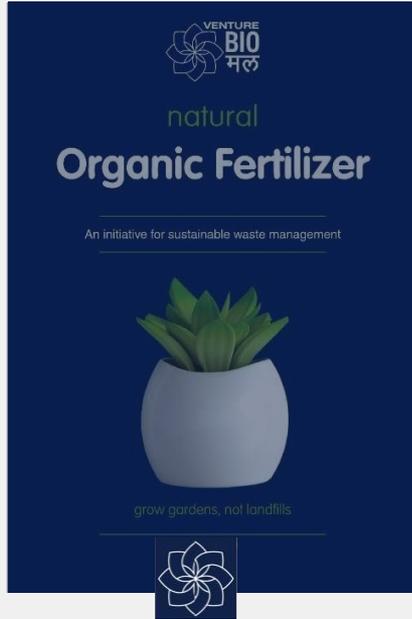
# OUR APPROACH

NON BIO DEGRADABLE

APPROX 1/2  
MW – ELECTRICITY POSSIBILITY



# PROCESS – ENERGY CONVERSION FROM BIO-DEGRADABLES



**BIO FERTILIZER**  
(500 Kg of Organic Fertilizer/Day)



**BIO-CNG**  
(Natural Gas for use in TAXI/CARS/BUS) approx.  
350 Auto Rickshaw /day on BIO CNG



**ASHOK LEYLAND**

*Koi Manzil Door Nahin*



## BIO-CNG

(Natural Gas for use in TAXI/CARS/BUS)  
approx. 25 BUS /day on BIO CNG

# 05.

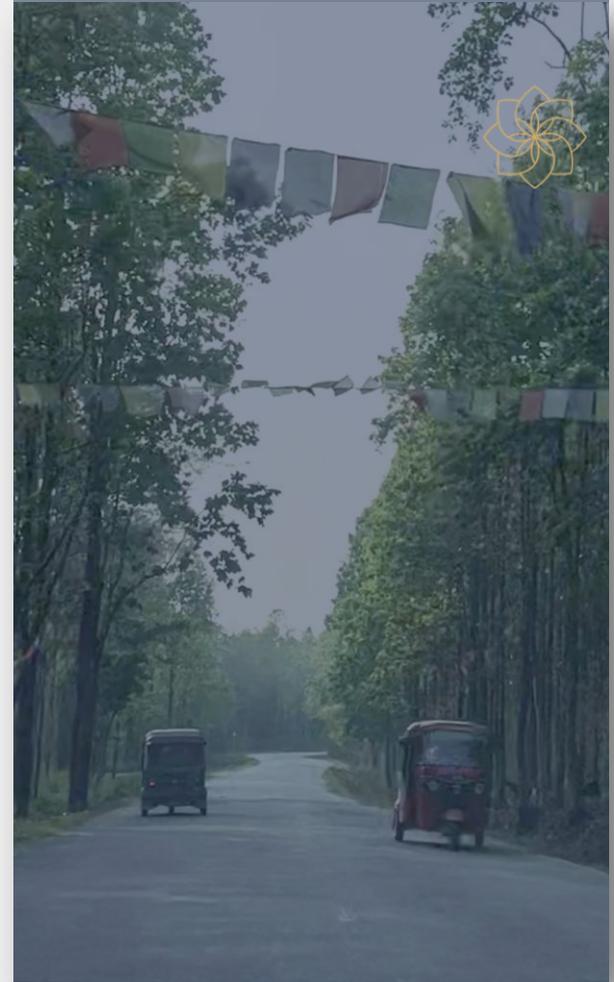
## POSITIVE IMPACTS

To be able to provide a wide range of ecological, social, and economic benefits to our community

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## PROCESS BENEFITS

- Zero liquid/solid discharge
- Zero emission of harmful gases
- Carbon negative process





natural

# Organic Fertilizer

An initiative for sustainable waste management



grow gardens, not landfills

net contains

2<sub>kg</sub>

## PRODUCT BENEFITS

- 100% local production
- 100% natural organic fertilizer
- NPK Value 2 : 2 : 2

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# Resources Support

The Project was initiated by AEPC through SERP which had a component to provide 40% subsidy on Anaerobic Digestion Equipment supported by World Bank and Matching fund from Government of Nepal (20/20%) for establishment of Municipal Solid Waste to Energy Project.

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# Future Support and Needs

- Project Expansion (Municipal Technical Support and Field Visit)
- Promotional Support ( Awareness, Marketing and Distribution network for selling of organic fertilizer through various public and private organizations)
- Bio-CNG Kits and cylinder for conversion of petrol vehicles to multi-fuel vehicle
- Machinery and Plant up-gradation support ( Fertilizer Decanter, Feeding System, Refinery, etc.)
- Policy advocacy support
- Capacity building support ( Technical Staff)
- Soft loan with component of of grant or subsidy





# UNECE PPP and Infrastructure Award 2023

Competition for the best PPP and infrastructure projects contributing to the circular economy and the SDGs

## Finalists

- **Brazil:** Novo Socioeducativo (Juvenile Justice Centres)
- **Nepal:** Waste-to-Energy in Dharan
- **Slovenia:** Energy Retrofit of Buildings in Ljubljana
- **Spain:** Endolla Barcelona (Electric Vehicle Charging Network)
- **Türkiye:** 1915 Çanakkale Bridge





Public-Private Partnerships  
for the Sustainable Development Goals



UNECE

## CERTIFICATE

*This document is to certify that the project entitled*

# **“Vw2E Municipal Solid Waste-to-Energy” in Dharan, Nepal**

*has been selected at the seventh edition of the UNECE International PPP Forum the*

**Third Place**

of the

**UNECE PPP and infrastructure award 2023**

5 May 2023



**TONY BONNICI**

Chief of Cooperation and Partnerships Section  
Economic Cooperation and Trade Division

An international Jury selected five finalists out of 70 contestants. The participants of the Forum, through their votes, selected the winner and the runner-up. The selection was based entirely on information submitted by the contestants without any third-party verification of data. As the organiser, the UNECE, is not liable for any claims, loss or damage, arising directly or indirectly out of or relating to the outcome of the Competition.

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# THANK YOU

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Project Site : Dharan -6, Panbari