

Municipal Solid & Liquid Waste Management

by

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Mailhem Ikos Environment Pvt. Ltd.

MAILHEM

In Sanskrit

‘MAIL’ Means WASTE & ‘HEM’ Means GOLD

We are in the business of
converting **WASTE TO GOLD**

Mailhem Won GARBAGE GURU SAFAIGIRI Award 2015



Presented by
SHRI. NARENDRA MODI, HON. PRIME MINISTER OF INDIA

Mailhem Won National Quality Award 2012



PRESENTED BY
Mr. SUBODH KANT SAHAY, HON. MINISTER OF TOURISM, GOI &
Mr. ARUN MAIRA, QCI CHAIRMAN AND PLG COMMISSION MEMBER

Testimonial to Our Vision of delivering Quality Products.

PHILOSOPHY



- Disposal of waste at it's source of generation.
- 'Seeing is Believing'
 - simply execute the waste treatment plants and let our Clients talk about it.
- Consider "Waste as a Resource".
- Don't Construct it, if you can't Maintain it.

MISSION

To provide innovative, cost effective, one stop solution in waste management, pursue excellence, deliver quality and ensure a satisfied customer.

MAILHEM has linked up with

French LHOTELLIER IKOS Group

Total Experience of MAILHEM IKOS

117 years

DECENTRALISED BIOGAS PLANTS

- Kitchen waste
- Canteen Food Waste
- Slaughter-house Waste
- Cattle Dung
- Poultry waste
- Food processing waste
- Vegetable Market Yard
- Fruit And Flower Market
- Leather shavings waste
- Starch effluents
- Co-digestion of one or more substrate from above

WASTE WATER TREATMENT PLANTS

- Sewage Treatment Plants
- Effluent Treatment Plant
- Leachate Treatment Plant

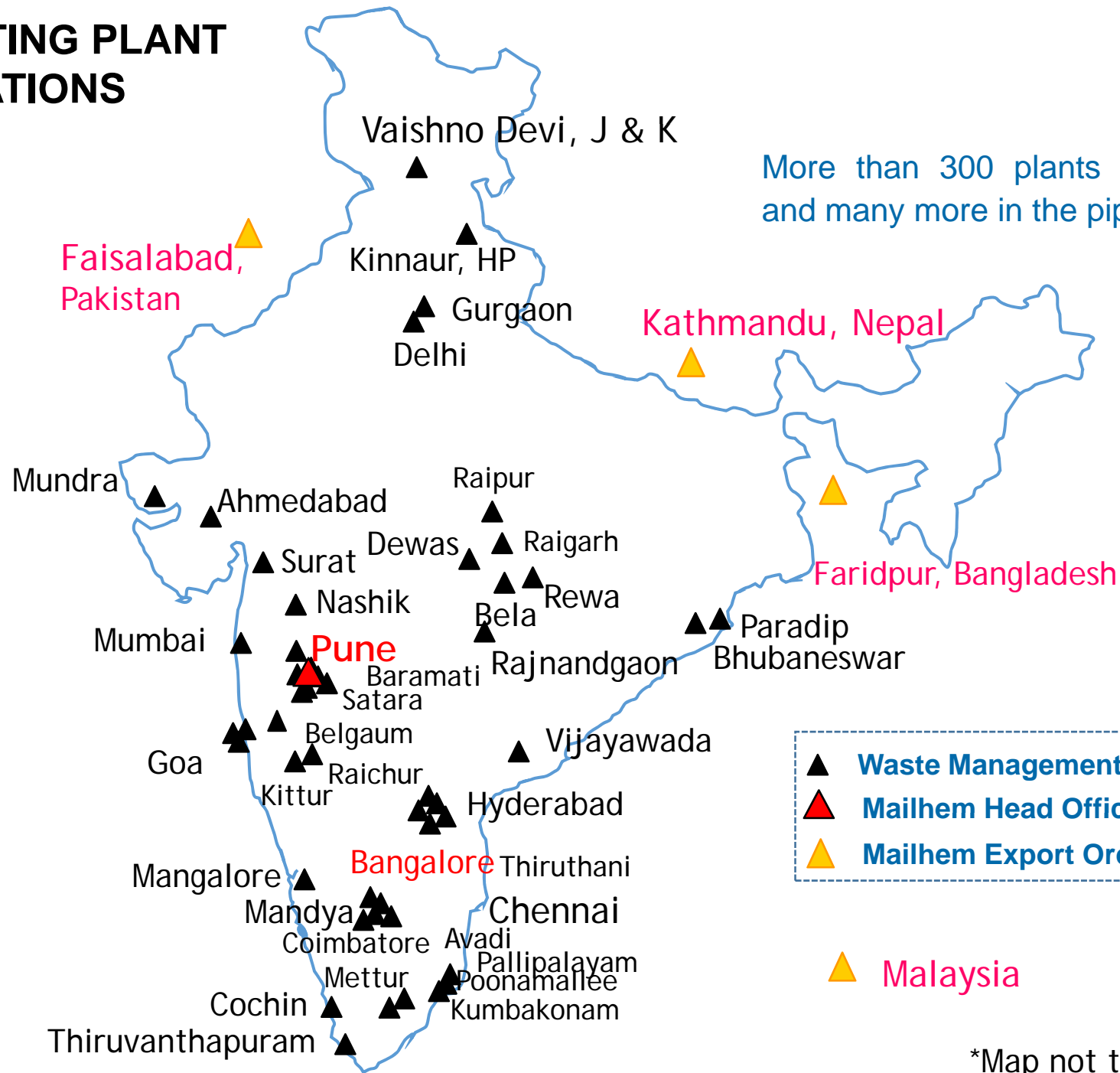
CENTRALIZED WASTE MANAGEMENT PROJECTS

- Large Scale Biogas Plants (above 100 TPD)
- Anaerobic Bioreactors
- Refuse Derived Fuel
- Incineration with pollution control equipment
- Windrow / Mechanical Composting
- Scientific Landfill
- Capping of existing Dumpsites
- Hazardous Waste Landfill
- Plastic to Fuel

EXISTING PLANT LOCATIONS



More than 300 plants installed and many more in the pipeline.



*Map not to scale

Present Status of Municipal Solid Waste and Liquid Waste in India



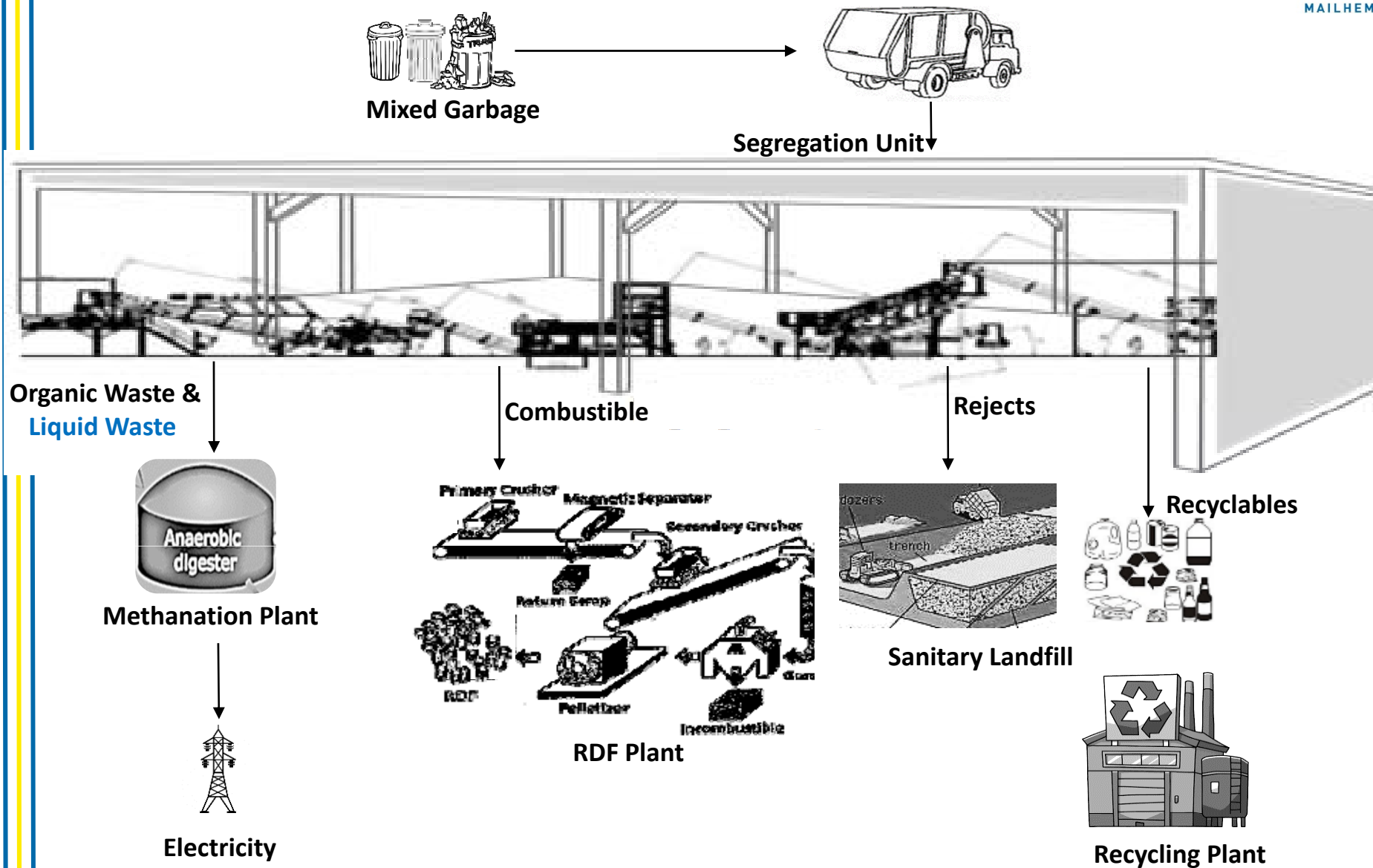
Municipal Solid Waste generation in Urban Areas

- 1,70,000 Ton per Day
- Annual 62 Million Tonnes
- Potential to Produce Power of 2600 Mega Watt.

Wastewater generation

- The estimated sewage generation from 498 Class-I cities and 410 Class-II towns (Population estimated for 2008 based on 2001 census) together is 38,524 MLD. Out of this, only 11,787 MLD (31%) is being treated with a capacity gap of 26,737 MLD

Municipal Solid Waste & Liquid Management



For Urban areas – more than 300 ton per day of waste

- Biomethanation for Wet waste and Combination of Sewage & Solid Waste
- Refuse Derived Fuel for combustible waste

OR

- Incineration with proper pollution control board equipment
- Scientific Landfill for Inert's

For Urban areas – less than 300 ton per day unsegregated waste

- Anaerobic Bioreactor



**A thought
provoking idea!**

Bio-methanation

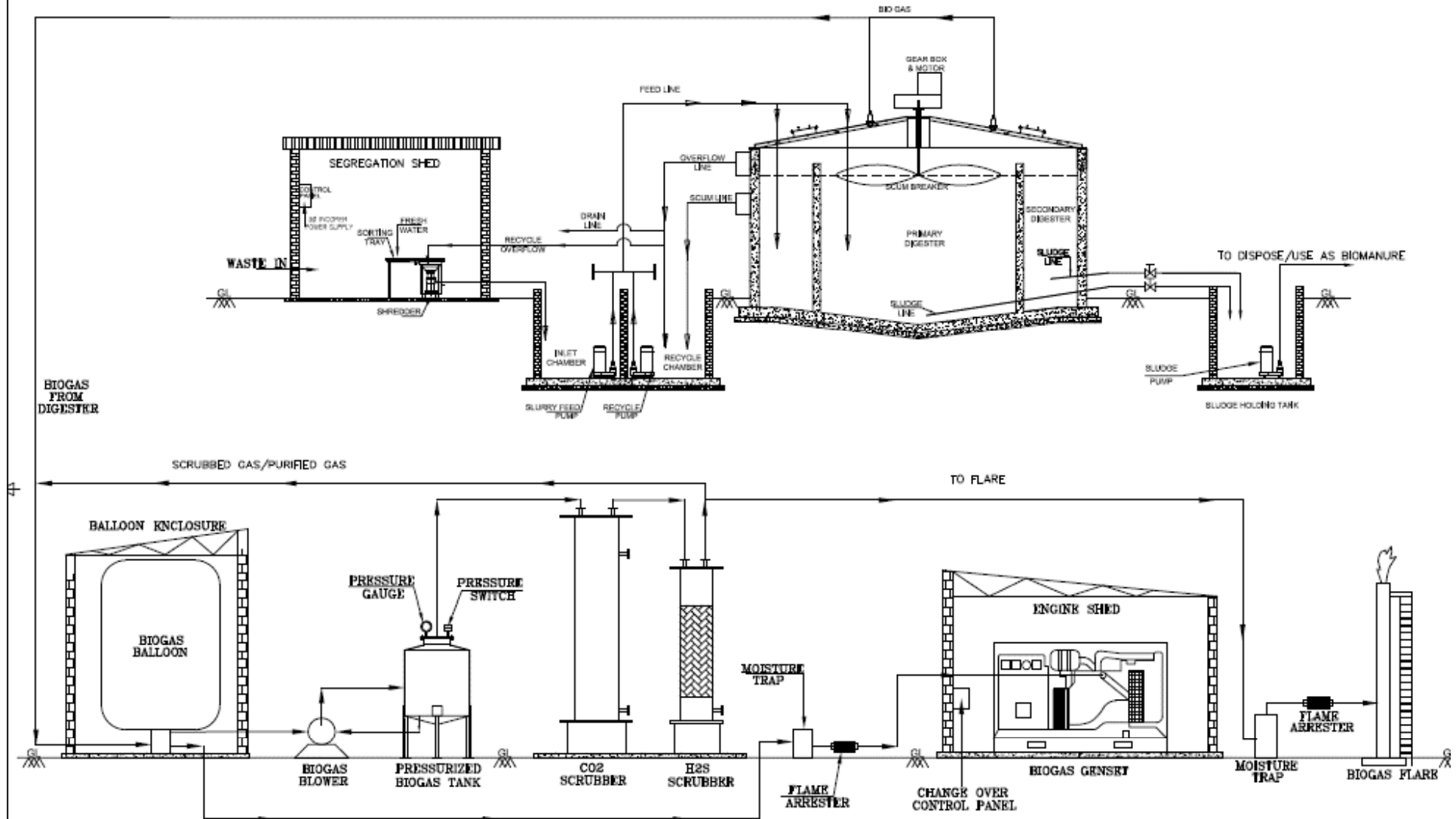
Mailhem Ikos Way

KATRAJ, PUNE

**5 TPD Segregated Organic Municipal Solid Waste x 2 Nos.
(Total Processing Capacity 10 Ton per day)**



Process Flow Diagram



Salient Features of Bio-methanation Plant

Plant Capacity	5 Ton per day	10 Ton per day (5 TPD x 2 Nos.)
Biogas Generation	280 - 300 cum/day @calorific value 4800 to 5200 kcal / cum	550 - 600 cum/day @calorific value 4800 to 5200 kcal / cum
Power Generation	Approx. 390 - 420 Electrical units / day (100% Biogas Genset)	Approx. 780 - 840 Electrical units / day (100% Biogas Genset)
Organic Manure Generated	165 tons/ annum (will be removed on periodical basis)	330 tons/ annum (will be removed on periodical basis)
Liquid Organic Overflow	10 – 11 cum / day (will be recycled to save on fresh water)	20 – 22 cum / day (will be recycled to save on fresh water)
Area Required For Waste Management Plant	Approx. 450 Sq.m.	Approx. 700 Sq.m.

FRESHNOY FOLNY, France



100 Ton per day Biogas Plant

Mailhem Ikos

Decentralized Biogas Plants

ITC FOODS LTD., PUNE, MAHARASHTRA
20 TPD Potato Waste equivalent to 40 TPD Food Waste



**TATA MOTORS LTD., PUNE,
MAHARASHTRA**
**6 TPD Food Waste
(Canteen Waste)**





**Bharat Electronics
Limited, Bangalore**
**2000 KG per day Food
Waste (Canteen Waste)**

**Parliament House,
New Delhi**
**500 KG per day Food
Waste (Canteen Waste)**





**Arcot Municipal Corporation ,
Tamil Nadu – 3TPD Segregated
Organic MSW**

**Kuvempunagar, Bangalore - 5 TPD
Segregated Organic MSW**



Mailhem's Portable Biogas Projects

(100 kg/day to 1000 kg/day)

INSTITUTIONAL / INDUSTRIAL



**INDIAN OIL CORPORATION LTD.
(IOCL), PARADIP, ORISSA**
1000 kg/day

**KALINGA INSTITUTE OF SOCIAL
SCIENCES, BHUBANESWAR,
ORISSA**
1000 kg/day





**HINDUSTAN AERONAUTICS
LIMITED, BANGALORE**
500 kg/day Food Waste

**TCS Ltd., BANGALORE,
KARNATAKA**
500 kg/day Food Waste



Huge Potential & Way Forward for YOU –

**The Entrepreneurs, Innovators, Activist with
passion for Solid & Liquid Waste Management**

The Issues which Hinder SWM

- Segregation at Source
 - household level coverage of solid waste management services
 - efficiency of collection of municipal solid waste
- The primary and secondary transportation
- Extent of processing and scientific disposal of MSW
 - Decentralized or Centralized Treatment
 - Scientific Disposal or Open Dumping

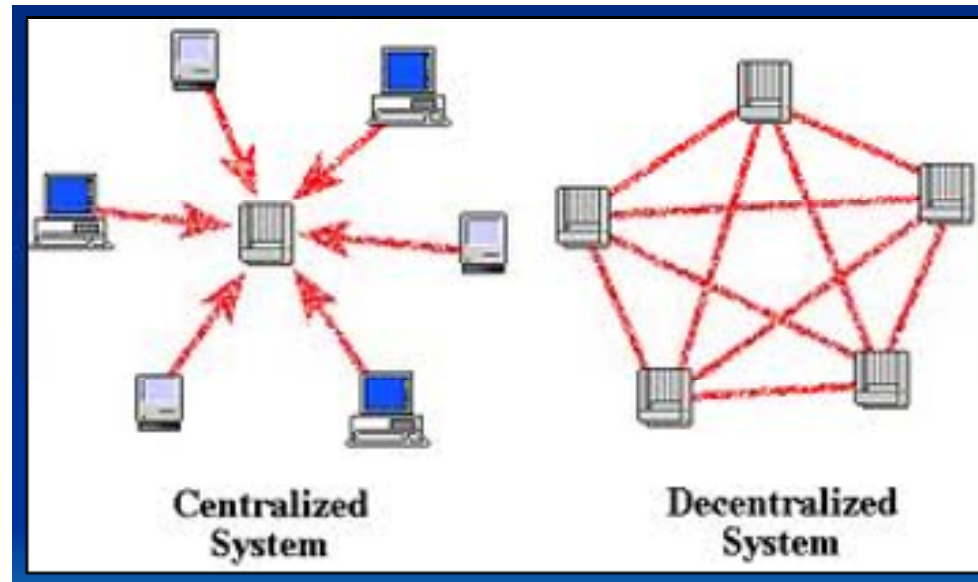


The Issues which hinder Liquid Waste Mgmt.



- No Treatment and easy to let out into rivers or natural water bodies
- Old Centralized treatment plants are now in the centre city
- Dilemma for any Corporation whether to go for Centralized and Decentralized Treatment Plants with the enormous cost of piping networks
- Construction of only Toilets with NO THOUGHT given for TREATMENT

Solid & Liquid Waste Management – The Way Forward



- Decentralized Solid Waste Management to implement waste segregation at source
- Outsourcing of Collection and Transportation
- Judicious mix of Decentralized and Centralized Plants.
- Compulsion for setting up of STPs having built up area of more than 4000sq.m
- Revamping of old STPs on Old technologies

Mailhem Ikos Licensed Manufacturer of CSIR – NIIST (National Institute for Interdisciplinary Science and Technology) Patented Biogas Plant (3 kg , 5 kg , 10 kg and 15 kg per day)



Thank You



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**Waste Is A Valuable
Resource!**