

# Poultry Waste Management: Handling the environment Concern

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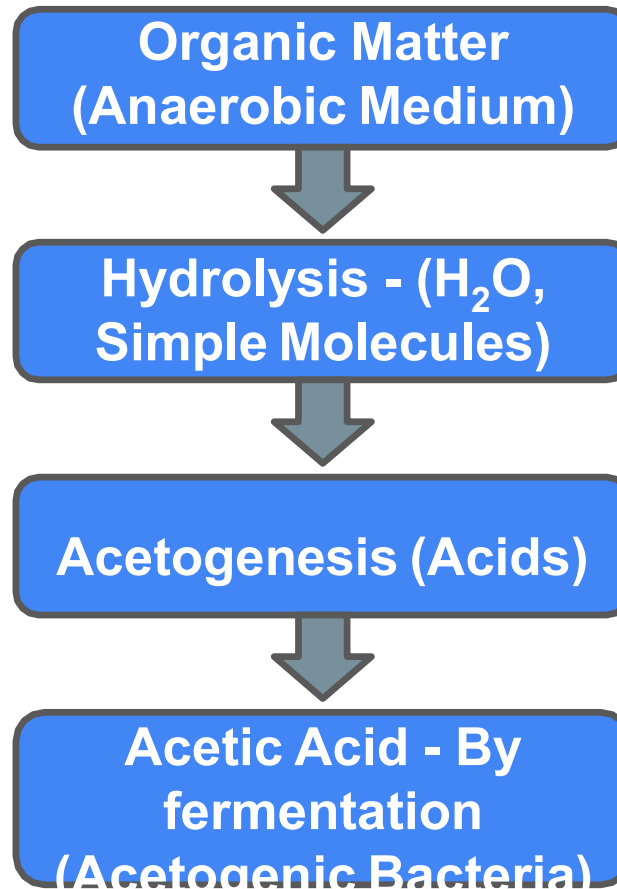
# Menace

- Fly population
- Bad odour or Dirty Conditions
- GHG pollution issues
- Cleanliness - Birds welfare
- Cleanliness - Workers welfare
- Performance & efficiency of Labour & Birds

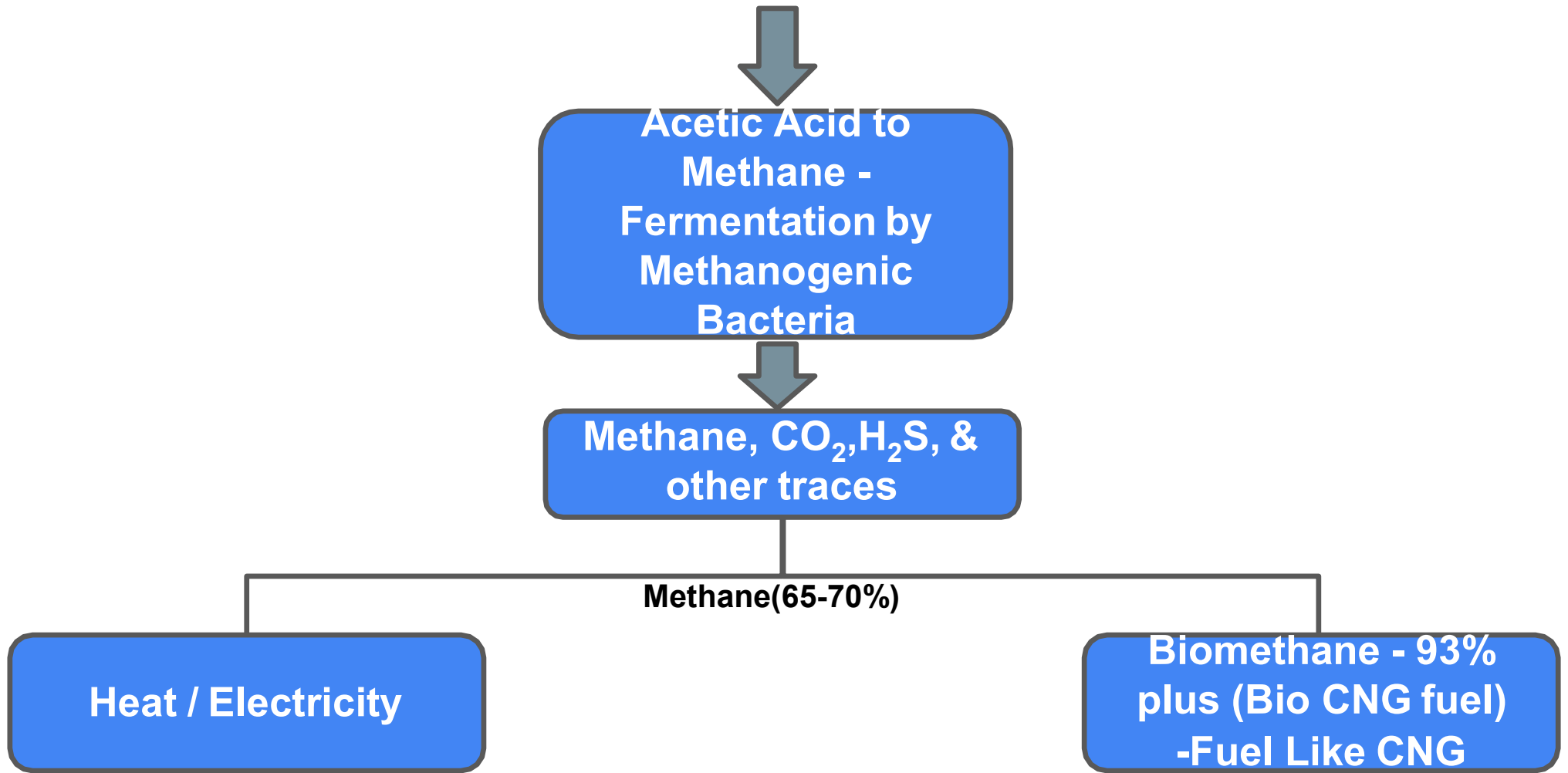
# Money

- Solution plus Money from BIOGAS project
- Reuse, Recycle & Regeneration
- In MH, 2013: only one successful biogas plant
- MH, 2022: 10 successful projects on poultry litter
- All over India, there 12 million metric ton litter is available to convert to Biogas

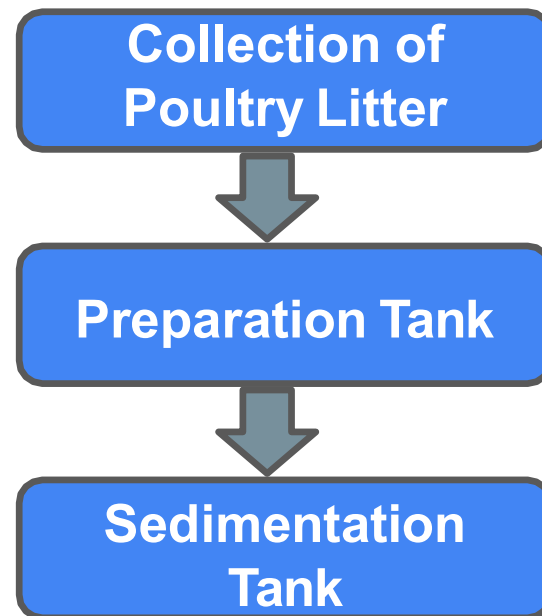
# Biogas Process



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## Flow Chart - Biomethane (Layer & Breeder)



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**Anaerobic  
Digester**

**Raw Biomethane**

**Purification**

**Compressor**

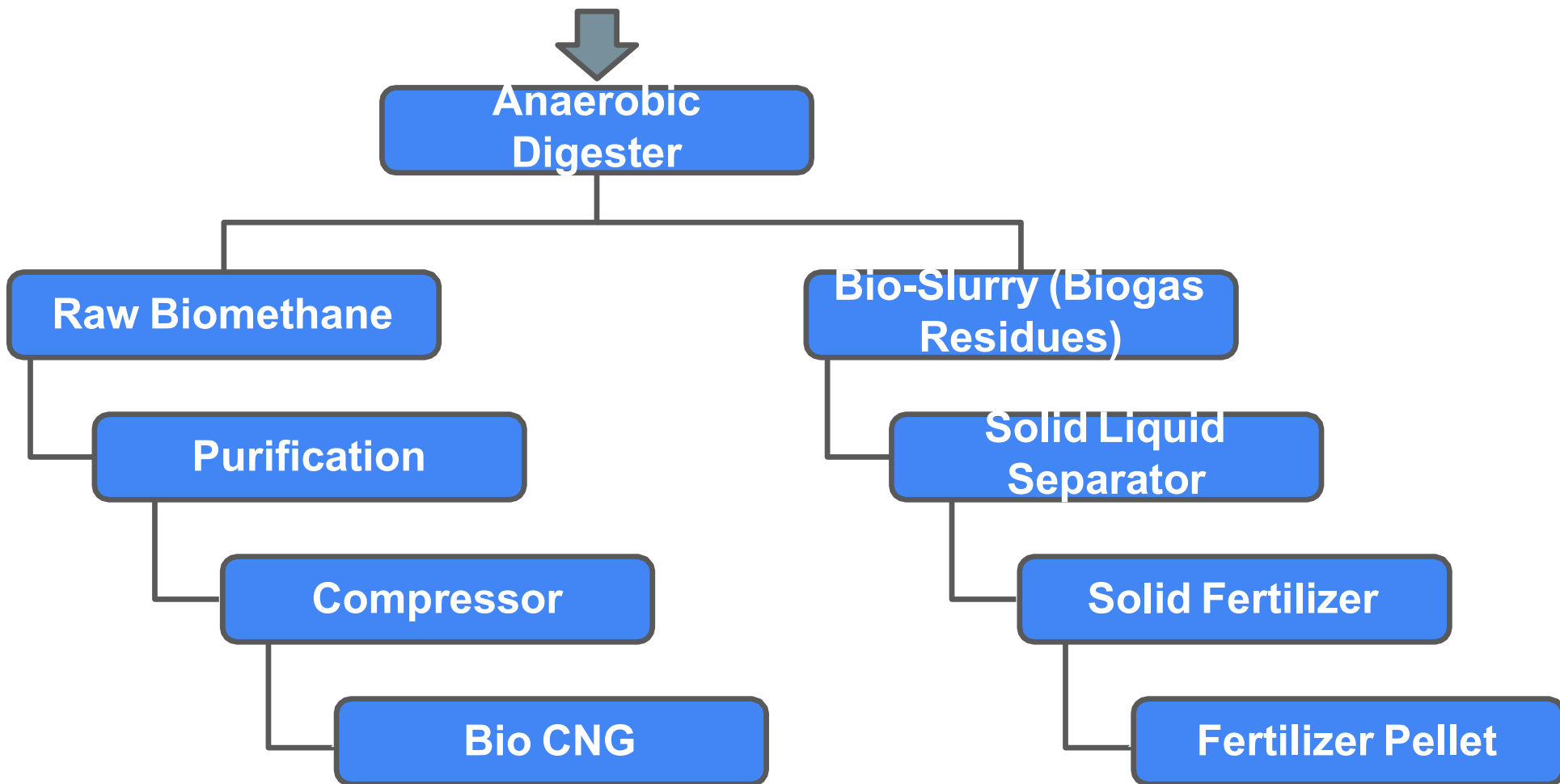
**Bio CNG**

**Bio-Slurry (Biogas  
Residues)**

**Solid Liquid  
Separator**

**Solid Fertilizer**

**Fertilizer Pellet**



# Photo Gallery





**Pump**



**Blower**



**Stirrer**



**Anaerobic digester**





**Gas Line HDPE**



**Biogas Generator**





**Purification System**



**Compressor**





**Bio CNG cylinders and transport system**



**BIOSLURRY transportation**





**Solid liquid separation**



**Fertilizer Pellets**

# Advantage of Such Projects

- Cleanliness of the farm
- Fly free & odour free
- Eco-friendly with staff & birds
- Improves efficiency & Performance
- Sustainable & Safe
- Biomethane can be stored & transported unlike other renewable energy resources
- Bio CNG fuel

# Advantages of BIOSLURRY

**Thanks to Govt. of India for promoting organic fertilisation against chemical fertilisation!**

- Best organic fertilizer to boost agriculture
- Liquid Application

Research:

- It can work against 23 bacterial diseases and 14 paste including E Col, Bacillus SPP, Penicillium, and aspergillus
- No resistance to organisms
- Does not create any pollution
- Has high nutritional value in the form of organic carbon, ammoniac nitrogen, available phosphorus and potassium
- Resolves issues of Carbon Depletion in soil
- Soil permeability, water holding capacity increases, decreases soil density and improved porosity

# Challenges

- Collection of litter in California System: Fresh Scraper System
- Bioslurry Handling
  - Recirculation
  - Solid liquid separation
  - Bioslurry sale
  - Zero discharge
- High investment
- Utilisation of excess electricity produced in Non EC sheds: There is difficulty to sell, as Govt. is not buying, however EC sheds consumes all electricity produced
- Marketing of Bioslurry

# Projections

- 20K sq. feet space required
- 1 lakh layer birds / 80K parents
- Produces 10K kg poultry litter per day (100 gm per day per bird)
- Dilution to 18K litter after removal of feather & Inorganics
- 600 cubic meter plant



- Project cost investment
  - Civil & fabrication : 50 L
  - Engine & Solid-Liquid separator : 30 L
  - Other accessories : 10 L
  - **Total: 80 L**
- Working capital
  - Manpower : 15 L / annum
  - Maintenance : 2.5 L / annum
  - Raw material, 10 thousand Rs/day : 36.5 L / annum
  - Other costs : 6 L / annum
  - **Total: 60 L / annum**
- Revenue
  - Gas to electricity, 1000 kW @ 5rs / day : 18.25 L / annum
  - Fertilizer, 4000 kg/day @ 5rs / kg : 73 L / annum
  - Bioslurry sale 5000 kg @ 1rs per kg : 18.25 L / annum
  - **Total : 109.50 L / annum**
  - **Gross Profit : 49.50 L / annum**

# Depreciation Claim

- 40 % as against maximum of 15 % normal on project cost of 80 Lakhs for 2 years under renewable energy
- Profit making companies can have indirect benefit on income tax payment approximately 10 Lakh
- There is a subsidy of Rs 40000 per kW
- 600 cubic meter plant, 50 kW means 20 Lakh subsidy
- Considering these 2 benefits, project cost comes below 50 Lakhs
- SATAT scheme for CNG has more benefits

# Summary

- Waste organic matter management is need of the hour and for sustainable activity
- Bio methane, bio fertilizers, biofuels are the most promising to do it
- Bio slurry activities will boom organic farming
- Birds will pay back more by this energy recovery

# Thank You

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