



# Bio-CNG

1

WAY TO....

SUSTAINABLE DEVELOPMENT

&

CLEANING ECO-SYSTEM

[www.soltherm.in](http://www.soltherm.in)

# Background.....



2

## .....Need

- ❖ In today's world we need energy to perform any task in every walk of life.
- ❖ We do depend mostly on fossil fuels to meet our day to day energy needs.
- ❖ On the other hand Chemical fertilizers have been backbone of the sustainable agriculture hitherto. Without extensive use of chemical fertilizers we can not imagine to grow enough crops to feed and support the world population.
- ❖ Extensive use of chemical fertilizers leaves its repercussions and affects our ecosystem and environment, even the quality and natural fertility of soil is impaired too. Therefore there is a world-wide urge towards organic farming and reducing dependency upon chemical fertilizers.
- ❖ The presents technology of Biogas is a trident weapon in our hands to eradicate following problems in a single moove.
  - a. Environmental Polution- Keeps Environment & Eco-system Clean.
  - b. Energy Needs- Provids Renewable Enregy.
  - c. Agriculture- Provids best quality Organci Fertilizers to boost organic farming.

# The best Technology



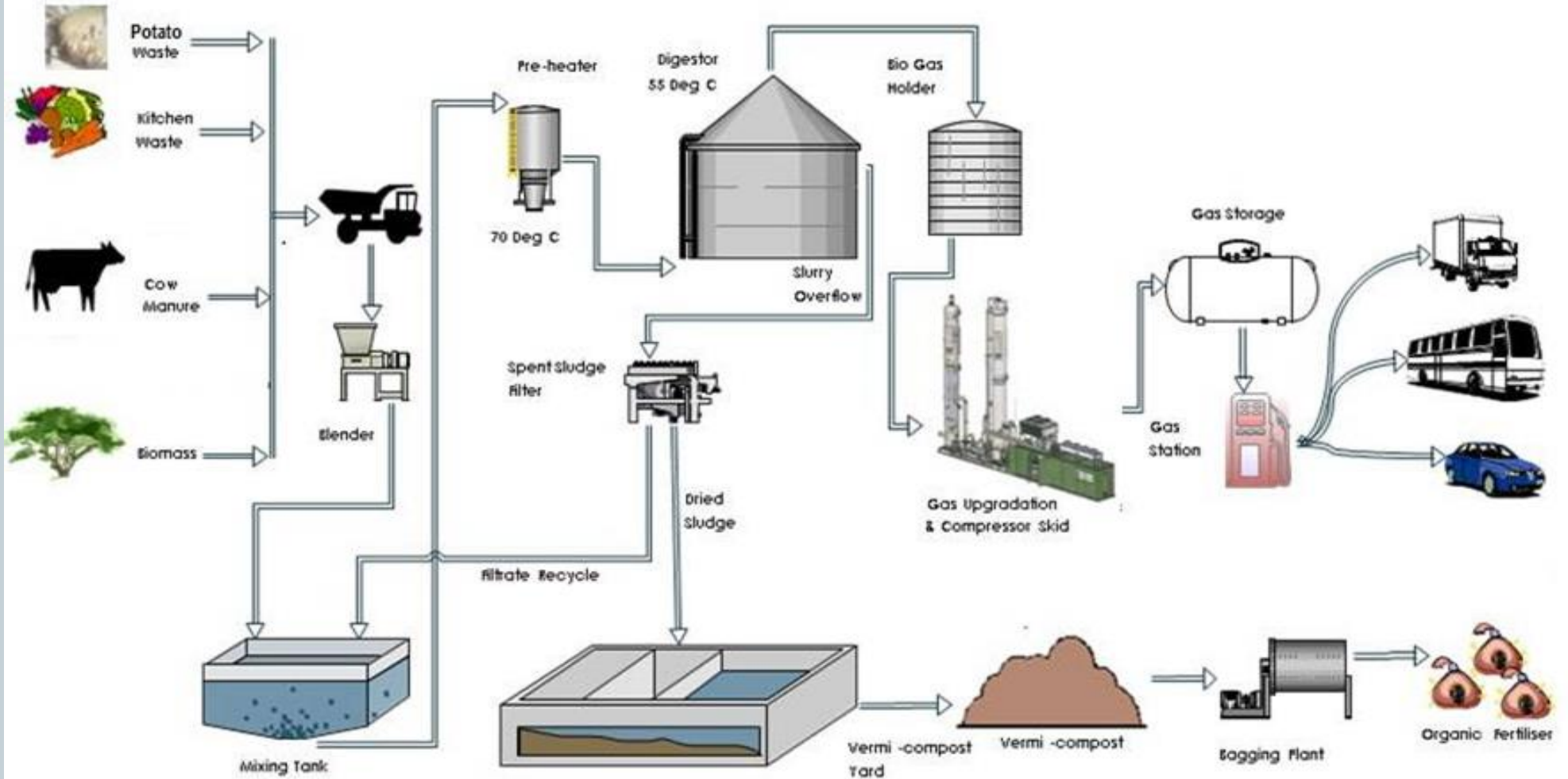
3

- Here at SOLTHERM ENERGY SOLUTIONS PVT. LTD. We are offering the CSTR Technology for digestion and fermentation of feed stock, to produce quality Biogas and Organic Fertilizer with flawless operation.
- The Biogas so produced can be converted into high quality Bio-CNG to be used as automobile fuels.
- Alternatively the same gas is used to generate electric power to feed local grid or any other captive use.
- The organic fertilizer produced from the project is used to improve quality, water holding capacity and fertility of the soil.

# Process Diagram



4

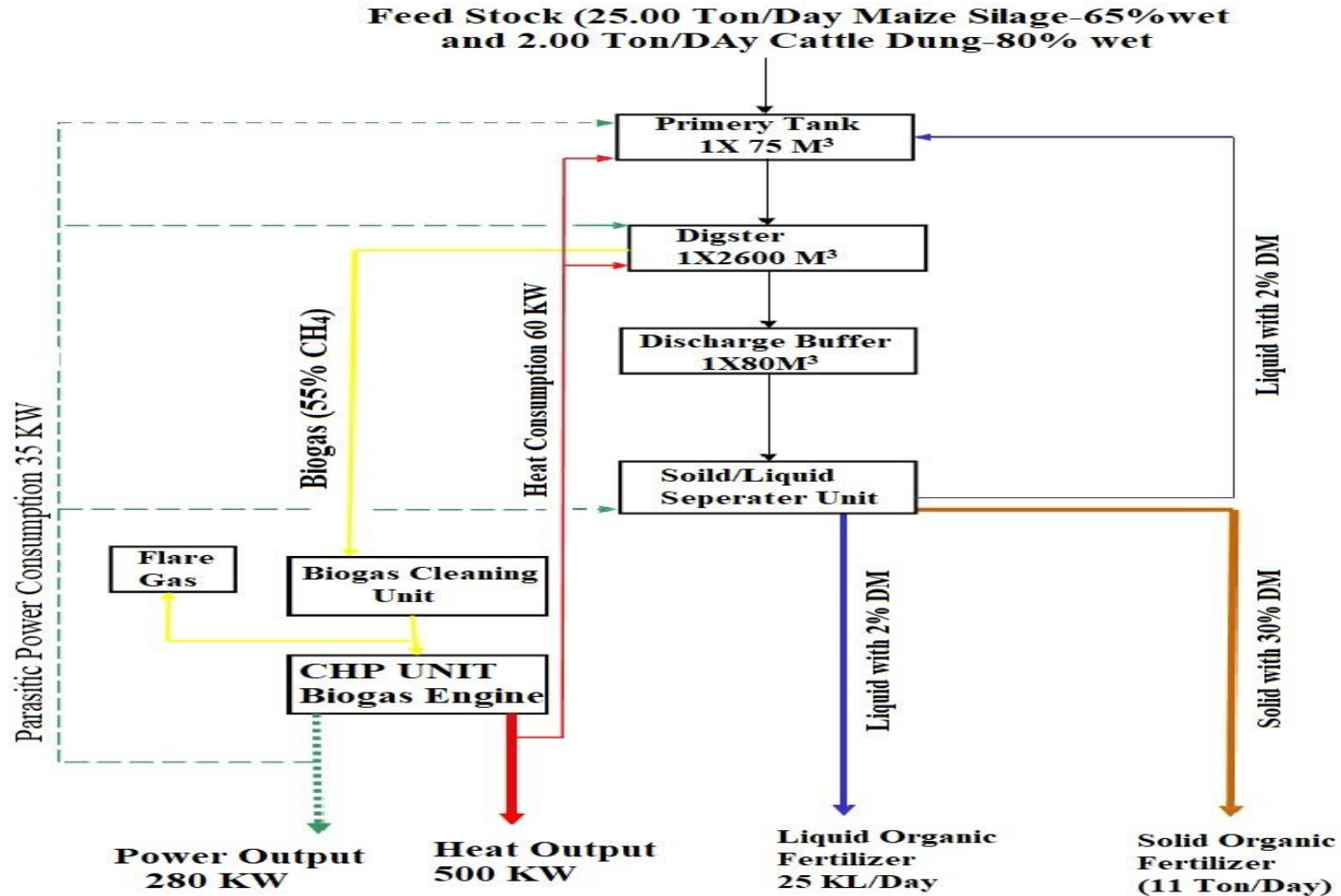




# Typical Process Flow Chart



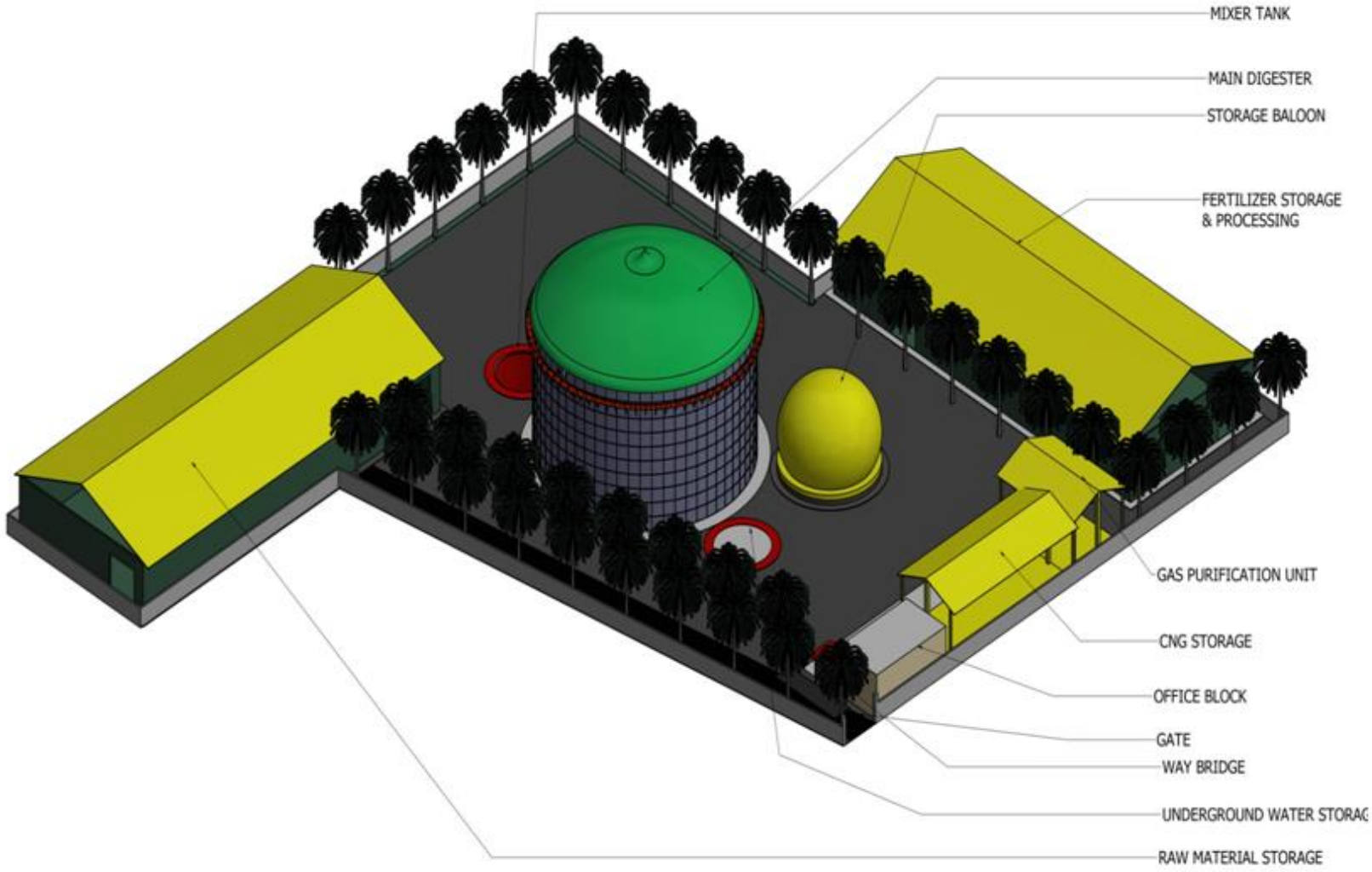
5



# Typical Project Setup



6



# Product(1) Bio-CNG



7

## Composition of Purified Bio-CNG

<b>Ingredient</b>	<b>Value</b>	<b>Test Method</b>
CH <sub>4</sub> (Percentage)	94-95%	IS-1530 (Part3)
CO <sub>2</sub> + N <sub>2</sub> + O <sub>2</sub> (Percentage)	5-6%	IS-1530 (Part3)
H <sub>2</sub> S (Mg/M <sup>3</sup> )	25(Mg/M <sup>3</sup> )	ISO- 6326-3
Moisture (Mg/M <sup>3</sup> )	10(Mg/M <sup>3</sup> )	IS-15641 (Part2)

# Product(2) Organic Fertilizer



8

The C:N ratio of organic manure is between 12:1 to 16:1. It is a good source of nitrogen, phosphorous. Potassium and Iron. Typical elemental composition of the organic manure and biogas obtained at two of the operating plants based on BARC technology is given below:

## ELEMENTAL COMPOSITION OF ORGANIC MANURE

- ❖ Calcium 0.39-0.65
- ❖ Iron 0.18-0.32
- ❖ Magnesium 0.032-0.01
- ❖ Manganese 0.0059-0.008
- ❖ Nitrogen 2.6-3.5
- ❖ Phosphorous 0.8-0.9
- ❖ Zinc 0.007-0.009
- ❖ Potassium 0.8-0.95



# Potential (Feed Stock)Raw Materials



9

**Following stuffs may be used as feed stock  
(for 5000 Kg/Day Bio-CNG)**

ITEMS	Daily Feeding
COW DUNG (Alone)	240 Ton
POULTRY DROPPINGS (Alone)	90 Ton
BIOMASS WASTE (Alone)	90 Ton
FOOD WASTE (Alone)	120 Ton
MUNICIPAL WASTE (Alone)	200 Ton

# Project Economics



10

Description	Value
Daily Bio-CNG Production	5,000 Kg
Daily Organic Fertilizer Production	30 Ton
Daily Organic Fertilizer Production	80-90 Ton
Estimated Cost of Project	22-25 Crore
Govt Subsidy	4.00 Crore
Estimated Gross Annual Sale Value	15.00 Crore
Estimated Annual Profit	5.00 Crore

# Benefits of Bio-CNG Project



11

- ❖ Renewable Energy Source.
- ❖ Reduced Greenhouse gas emissions.
- ❖ Reduced dependency on imported fuels.
- ❖ Waste Reduction.
- ❖ Job Creation.
- ❖ Reduces Environmental Pollution by proper utilization of wastes.
- ❖ Improve water holding capacity and fertility of land.

# Key Advantages of Bio-CNG Project



12

- Biogas is eco-friendly fuel. Provides a non-Polluting and renewable source of energy.
- Has a calorific value of around 6.00 KWh/M<sup>3</sup>—this is equivalent to half a Litre of diesel.
- Larger biogas plants can generate and feed electricity into mainstream power grids.
- Efficient way of energy conversion.
- The digested sludge is high quality organic fertilizer, completely natural and free from harmful synthetic chemicals. It can supplement or even replace chemical fertilizers.
- Leads to improvement in the environment, sanitation and hygiene.
- Provides a source for decentralized power generation.
- Leads to employment generation in the rural areas.
- Any biodegradable matter can be used as feed stock substrate.

# Contractors Warrantee



13

The Plant and Machinery we supply comes with a performance warrantee to perform, Irrespective of anything our product is warranted to perform at least 80% of designed capacity for a period of 25 Years after commissioning, provided proper repair and maintenance is performed and the same is prevented for any kind of mechanical damages .





**SOLTHERM ENERGY SOLUTIONS PVT. LTD.**

14

**THANKING YOU**

**COMMERCIAL ENQUIRIES ARE WELCOME**

**[www.soltherm.in](http://www.soltherm.in)**