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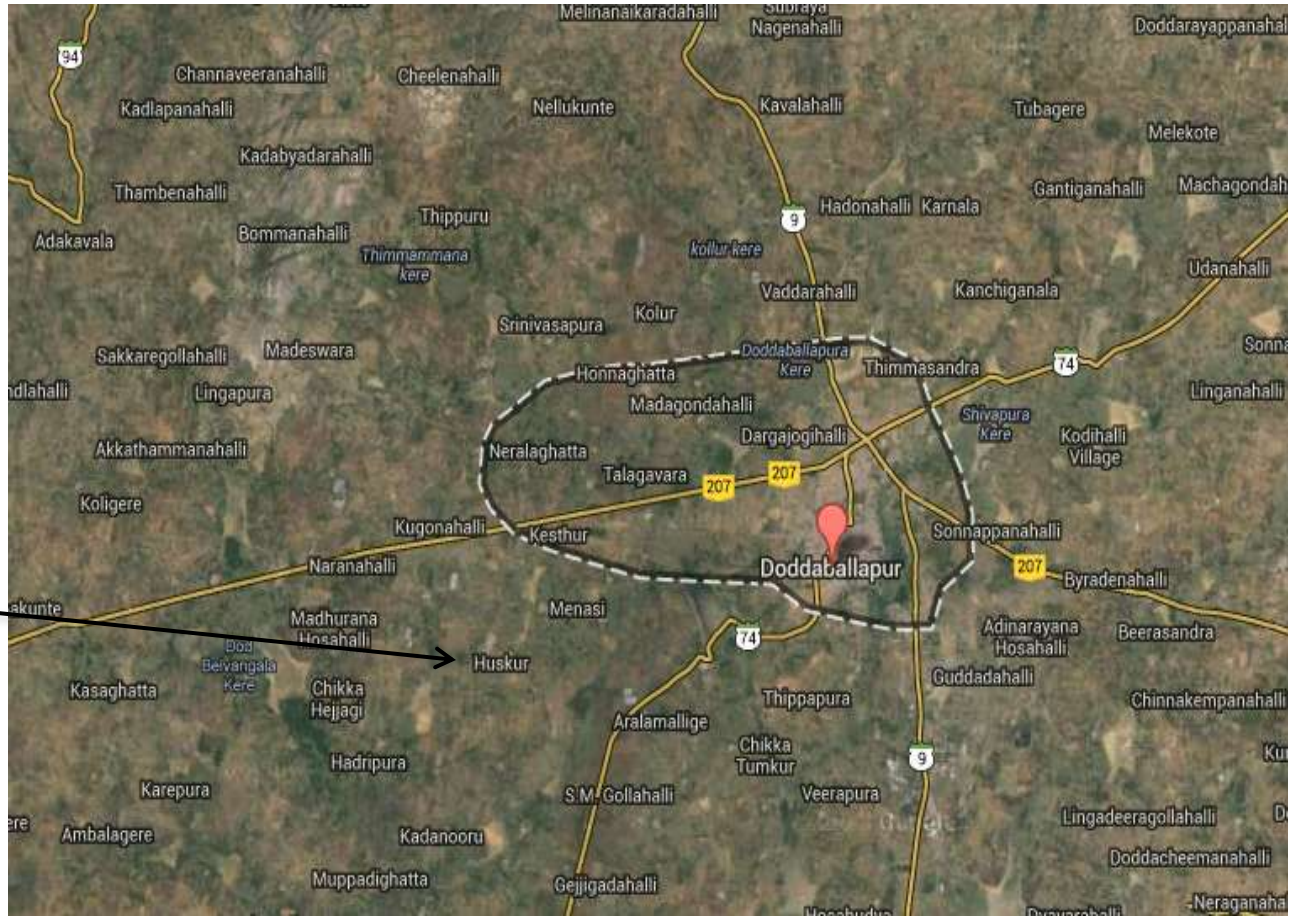
Solving a burning issue naturally

A cost effective solution to displace the burning of fossil fuels

Introduction

Maltose Agri Pvt Ltd: Maltose Agri Products Private Limited is a Agricultural Company based out of Hukusr, Doddaballapur, Bangalore Rural. The company has a dairy farm, 200,000 birds, poultry farm, grapes, banana & rose plantations. The natural availability of biomass & organic waste within other businesses has led into to a large scale Biogas plant which is South India's first compressed biogas bottling plant. Maltose Agri Pvt Ltd have teamed up with Carbon Masters, a carbon management company to develop low carbon energy solution for businesses	Carbon Masters is a carbon management company established in 2009. Our headquarters are in the University of Edinburgh, UK with branch offices in Bangalore, India and Ecuador, South America. Our team of consultants are specialists all with postgraduate qualifications in climate change, environment, and economics. We offer low carbon solutions to clients to reduce their carbon emissions & save operating costs. Carbon Lites is a biomass/organic waste based low carbon/renewable energy to tackle climate change problem. It's newly developed to help companies reduce carbon emissions that's arising out of back up power requirements (diesel gensets)

Project Location



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What is Carbon Lites?

- Carbon lites is a biomass/organic waste based low carbon/renewable energy to tackle climate change problem.

- Carbon Lites - “Solves the burning issue naturally”

- Using combination of Anaerobic Digestion tech to generate raw biogas & capture pure Methane using VPSA technology.

- Purified Methane is compressed into Cylinders using compressors

- CBG –(Compressed Biogas) can be used for various applications such as generating electricity, cooking & heating applications.

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Current Status

Theoretical/Anticipated

•Design Capacity = 1000 cum
•Cowdung & Poultry Waste= 18-20 Ton/day
•Compressed Biogas = 300-350 kg/day
•Organic Manure=1 tonne/day

Practical Results

•Compressed Biogas = Production Avge 200 – 250 kg/day @ Rs 50/Kg
•Organic Manure= 0.6 to 0.8 tonne/day @ Rs 3/Kg
•CH_4=92%
•ROI = 6-7 years

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Benefits

- Provides a locally sourced supply of low carbon energy cost effectively
- Improves energy security & solves energy storage problem
- Reduces government subsidy on fossil fuels
- Reduces carbon emissions
- Provides employment in rural and urban areas (10 FTE)
- Solves a increasing problem of waste disposal
- Improves agricultural yields by the provision of organic manure

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Challenges Faced

1)Plant Operational Challenges (High Calcium content leads to chocking of Pipes, Breakdowns, unpreparedness to run it for 24*7 for 365 days, lack of automation)

2)Smaller Network of Vendors in Karnataka

3)Power Availability at the Project Site

4)Pilot testing at our own costs for new clients

5)Access to Right Information

6)Fixing Breakdowns & Manpower

7)Temperature Dependent (Lower gas production during rainy season)

8)Application of CBG on Hotels did not take off because of Ice formation & Complications to replace the empty cylinder

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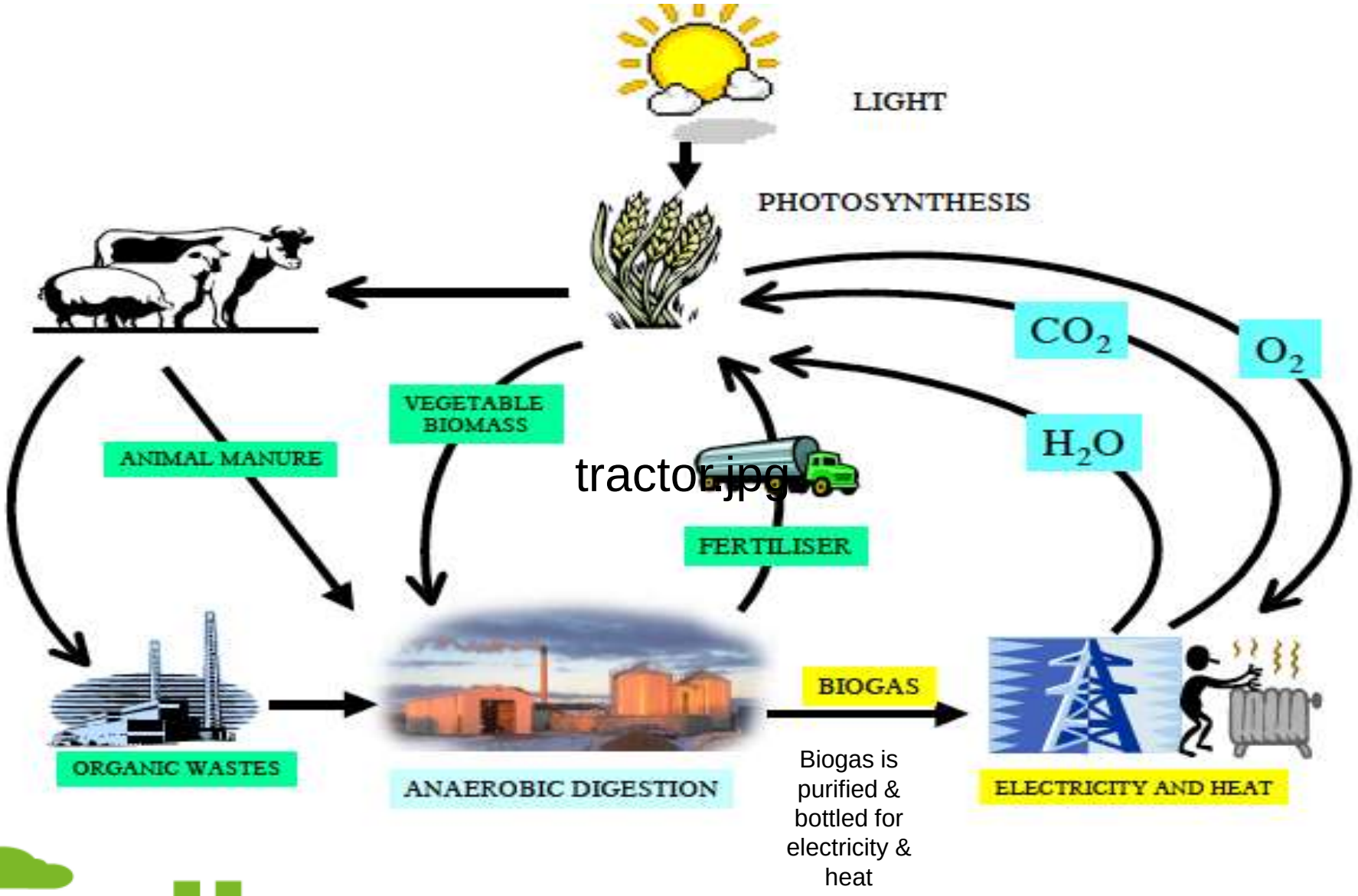
Manufacturing Process (Full cycle)



Biogas is purified & bottled for electricity & heat

Sustainable cycle of Carbon Lites

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Actual pictures of 18MTPD Plant located in Huskur, Doddaballpur, Karnataka,

Anaerobic Digester (AD)
Commissioned by Mailhem Engineers,Pune

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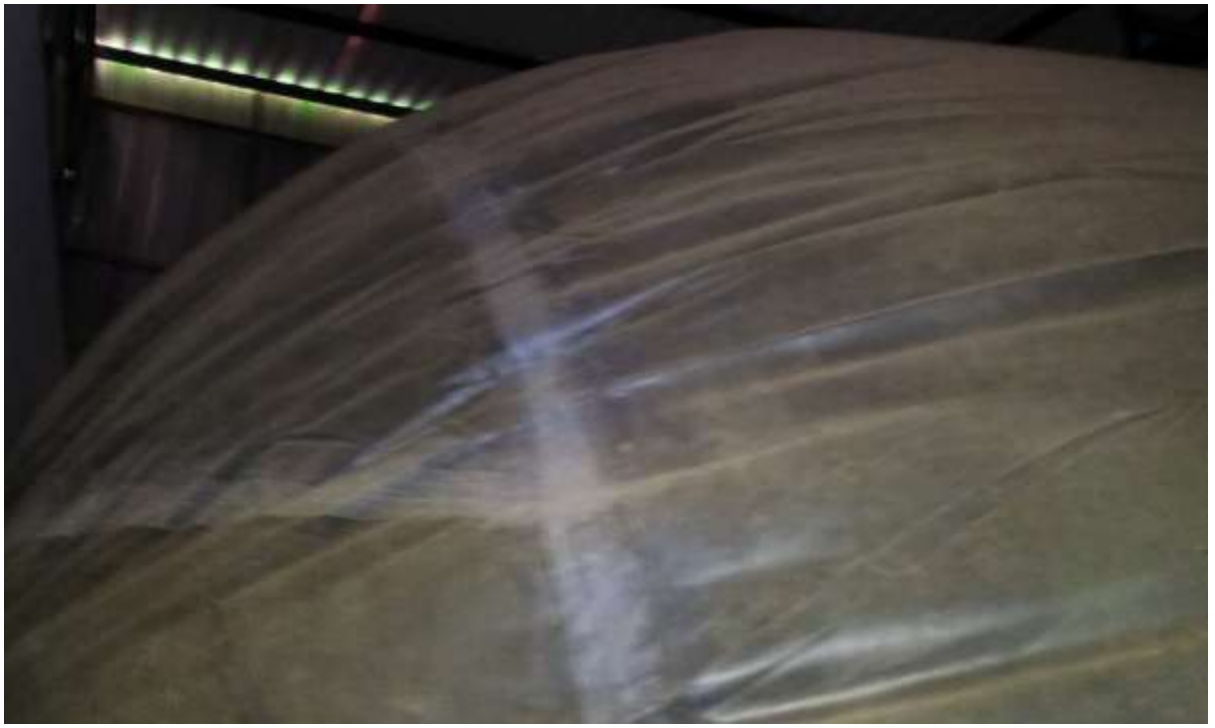
Actual pictures of 18MTPD Plant located in Huskur, Doddaballpur, Karnataka, India



The plant generated Biogas on daily basis. The biogas generated is stored in large the balloon for further purification. Biogas comprises of CH_4, H_2S, CO_2 & Moisture.

Actual pictures of 18MTPD Plant located in Huskur, Doddaballpur, Karnataka, India

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Actual pictures of 18MTPD Plant located in Huskur, Doddaballpur, Karnataka, India

Biogas purification plant based on VPSA technology.
The biogas is purified using H_2S removal scrubber & VPSA technology to produce pure methane.

*Purification System Provided by ATMOS Power

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Actual pictures of 18MTPD Plant located in Huskur, Doddaballpur, Karnataka, India

Pure methane of 98% is bottled into cylinders using compression technology.

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Actual pictures of 18MTPD Plant located in Huskur, Doddaballpur, Karnataka, India

Applications

1) Compressed Bio-gas can be used as 100% renewable energy for Electricity Generation, Cooking & Heating

2) CNG Generators can use CBG to generate 100% of any load or power requirement. Alternatively it can be used for Back up power in absence of Grid.

3) Existing Diesel Generators can be converted to run on Dual Fuel Mode to run 50% on Diesel & 50% on CBG

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Benefits: Low carbon energy & Operational Savings

CBG being used at a Stone Blasting site on Dual Fuel Mode. The stone blasting site uses c 100 lites of Diesel everyday.
Since introduction of CBG they have reduced their operating expenses by 25%/day & carbon footprint by 50%

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Other Benefits

Nitrogen (N)	3.08%
Phosphorus (P)	7.28%
Potassium (K)	0.33 %

The test results of the pure organic manure show high concentration of NPK, which would, highly beneficial for plant growth.

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Conclusion

1)A Pilot project with assistance from Ministry of New Renewable Energy has proved to highly successful.

2)Compressed biogas is a renewable energy which can help to cut carbon footprint & save costs

3)Compressed biogas solves the issue of energy storage unlike other renewable energy where storage is a problem (Solar & Wind power cannot be stored in batteries where as CBG can be stored in cylinders & can be used 24/7)

4)Solves the waste disposal problem which other wise creates health problems

5)Project creates local employment & positive social impact.

6)Plant expansion to 250 MTPD from BBMP & Hotel waste

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Thank You

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