

VIVEKANANDA KENDRA

NATURAL RESOURCES DEVELOPMENT PROJECT

nardep



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Shakti Surabhi

(PCT/IN/2010/000448)



A

B

C

D

E

F

G

H

I

A

Guide Pipe

B

Gas Outlet

C

Inlet Pipe

D

Gas Holder

E

Digestor

F

Outlet Pipe

G

Emergency Slurry
Drain

H

Substrate
Drain

I

Water Drain

Shakti Surabhi-MNRE approved Bio-Methanation Plant model

EVOLUTION OF BIO-METHANATION PLANT



Biogas Plant

Bio-methanation Plant



From Biogas plant to Kitchen waste Plant

Advantages of Shakti Surabhi[®] Bio-Methanation Plant



Apart from the obvious ecological and health advantages the plant has the following additional advantages:

They are suitable for rural and urban settings

They are portable

They have aesthetic looks

They are easy to transport - assemble and de-assemble

They are easy to maintain and handle

They come in different capacities and designs

**All these make the plant
"Your plant"
for the rural and urban
middle class.**

Many Problems - One Solution Shakti Surabhi



Disposal of waste is a problem
Burning of wastes adds to global warming
Organic waste accumulation
is a health Hazard!



Bio-Methanation plant Shakti Surabi is a solution to this grave environment and health problems arising from organic and domestic wastes.

Different wastes as Feed material



- Cooked waste (Rice, Chapathi, Dhal etc)
- Non-vegetable waste (Fish, meat etc)
- Vegetable waste (Wastage from vegetable market)
- Flour mill waste (Wheat, rice etc.)
- Starchy material (Tapioca, Maize etc.)

Water Hyacinth, Ipomea and Sea Weed as Feed Materials



Five Fold Advantages

Cleaning of water bodies.

Production of Energy from Weeds.

Less Green House Gas (Methane is 23 times more dangerous than Carbon di oxide.)

Output slurry can be used for composting.

Improved cooking facilities and better hygienic conditions.

Non-Edible Oil Seed Cakes as Feed Material



Neem
Pungam
Jatropha
Mahua
Rubber and
Cotton seed cake
and others

- Non edible oil can be used as bio-fuel.
- These oil cakes can be used as feed material for Shakti Surabhi plants.
- The slurry can be used as bio-pesticides and growth promoters.



Shakthi Surabhi[®] Bio-Methanation Plant (Fixed Model)



Plants constructed above the ground level
Cost-Effective
Easy to construct
Adaptable for rural and semi-urban areas

Bigger Size Shakti Surabhi



Gas Holder work is on



Waste is crushed before feeding



Big Size Plant is ready



Gas is used for electricity generation as well as cooking



The above bigger size Shakti Surabhi plant was constructed for Mahabhalipuram - (famous tourist centre) : for solid waste management project. VK-nardep is constructing many more such plants.

Users Share their Delight...



No more smoke from fuel wood. My kitchen is clean.



I can save more on LPG and my kitchen garden also has grown green.



Even after 2 months vacation tour, when I returned, the plant was fully functional.



This plant saves my time and has improved my family's health

Shakti Surabhi - Bio Methanation Plant: Web of Uses



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VK-nardep Marches Ahead...



From Biogas to Compressed Biogas (CBG)

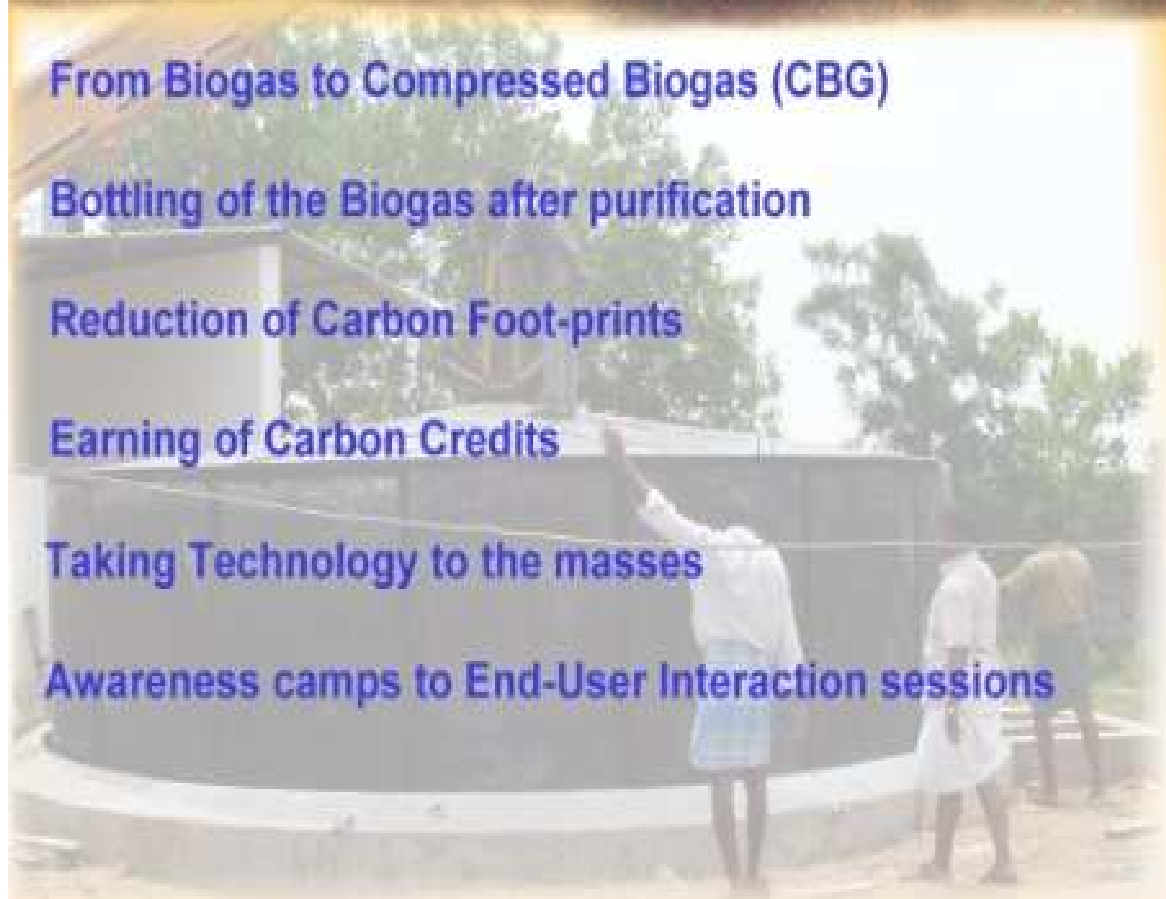
Bottling of the Biogas after purification

Reduction of Carbon Foot-prints

Earning of Carbon Credits

Taking Technology to the masses

Awareness camps to End-User Interaction sessions



Guillermo Berra, a researcher at the National Institute of Agricultural Technology, Argentina, says that "Every cow produces between 800 to 1,000 litres of methane (23 times more dangerous than CO₂) emission every day."





**Sympathy for poor
and downtrodden
even unto death that is
our motto.**

Vivekananda

Vivekananda Kendra : Activities



a spiritually oriented service mission with more than 200 centres all over India, to translate into action the vision of Swami Vivekananda of a Glorious India.

Thrust Areas

- ✓ Character building EDUCATION
- ✓ Culture-based Service-oriented RURAL DEVELOPMENT
- ✓ YOGA as a Socially relevant way of life
- ✓ Invigorating PUBLICATIONS
- ✓ **nardep** for Sustainable Development

