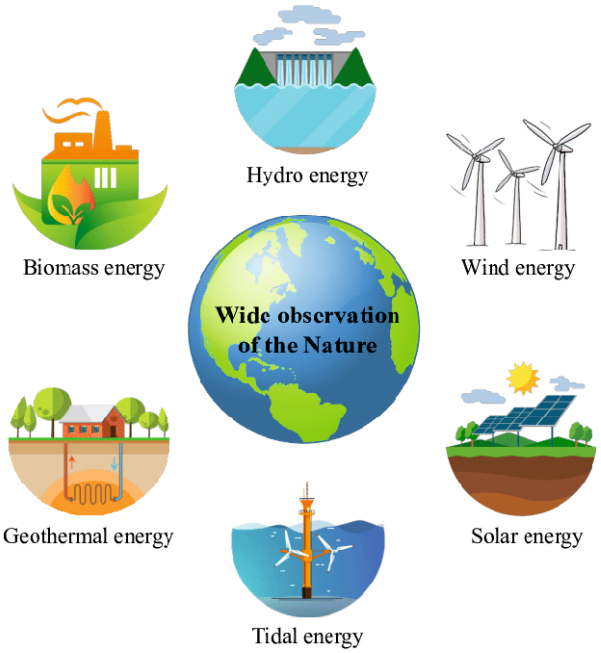
Vivekananda Kendra
Natural Resources Development Project
Kanyakumari

Work in the field of New & Renewable Energy

Milestones

New and Renewable Energy



Keeping in mind the problem of pollution and Energy Crisis. VK-nardep started its activities in 1986 by propagating

New and Renewable Energy such as wind, solar and Bio Energy

In the initial years, we did lot of work by installing smokeless chulas different wind mills for drawing water as well as for producing electricity as well as propagation of solar cookers, solar pumps, energy plantation,PV modules etc., However, finally we concentrated on Bio-Methanation technology and got excellent results.

1986-88 Energy plantation

1987-89 Urjagram -Energy village
Work starts on biogas technology
Energy center with wind and solar harvesting technologies

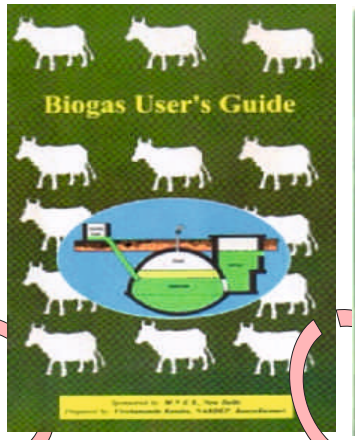
1990-97 Commissioning, installation and maintenance of more than 3000 -Deenbhandu and KVIC biogas plants mainly in southern Tamilnadu with the support of CHF - AFPRO

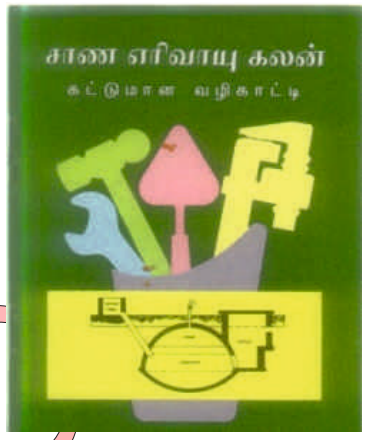
1991-96 Integrated rural energy planning programme- - more than 3000 Smokeless Chulas installed in Kanyakumari and Tirunelveli Dists.

1992-99 Bio-Gas mason training programme and construction of plant
17 programme 10 masons each

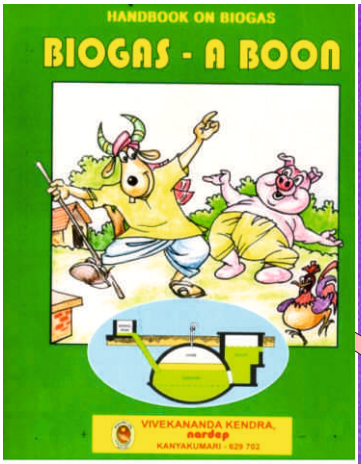
National study of biogas plants. Monitoring and evalution of installed biogas plants

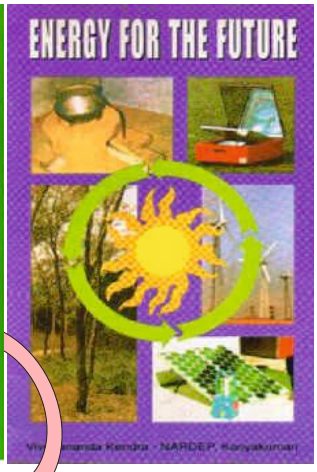
Publication of Repair and Maintenance manual for biogas plants, projects of MNRE , New Delhi





Workshops on Renewable Energy Sources with demonstration of Solar Kit, Repair & Maintenance of Bio-Gas Plant & Wind Energy from different districts of Tamil Nadu @ 50 villages

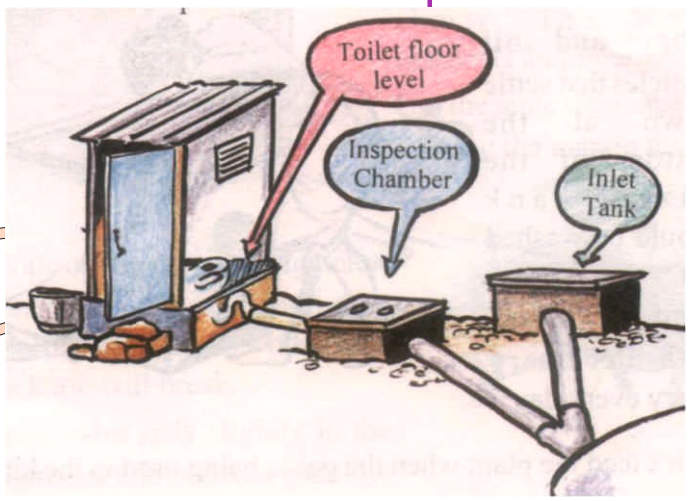




Developed VINCAP (Vivekananda Kendra NARDEP & CAPART) Bio gas plant (Bamboo based Biogas plant)
- Installed 100+ plants all over India and trained many masons


VINCAP model developed by VK-NARDEP uses locally available and cost-effective building technologies. This brings down the cost by 12-20 percent

Installed Toilet Linked Bio gas plants at hundreds of places



1999-2001

Bio gas plant construction with Ferro Cement Technology

2001-2006

Bio Gas plant to Bio Manure plant

Bio gas dissemination coupled with bio gas slurry enriched Agro formulations package by VK-nardep

Dr.J.C.Kumarappa, the first to advocate Bio-Manure Plant

Various usages of Biogas Slurry

BGA

Azolla

Vermi compost

Vermi wash

Coirpith compost

Living water

Pancha Gavya

NADEP compost

2006 - 2007

Received Ashden Award
for Advocating Bio-Manure Plant

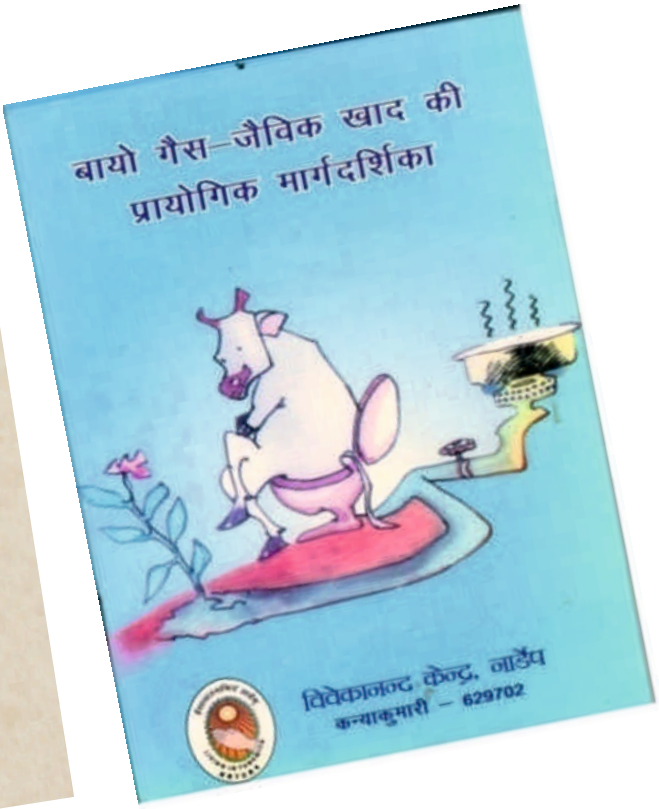
the **Ashden Awards**
for sustainable energy

Award Winner
The International Awards
2006

Vivekananda Kendra
India

These Awards recognise outstanding achievement in using sustainable energy to improve quality of life and protect the environment. The Awards aim to encourage the wider take-up of local sustainable energy solutions across the developing world and in the UK.

Signed .....
Sarah Butler-Sloss
Executive Chair, The Ashden Awards for Sustainable Energy



2007-2008

Launch of Bio Methanation plant designed by VK-nardep
work on Kitchen waste based input materials named as
"Shakti Surabhi"

16 plants installed for
Research and Development

2007 -2008.....

Awareness and Training programmes started for organic waste input
based biogas plants - 1000 + people attended

2008-2009

Bio Diesel and work on biogas with non edible oil seed cakes

Bio-fuel (Neem oil) used in diesel engine for generating electricity at VK-NARDEP Technology Resource Centre, India.

slurry coming out from Biogas plant (nonedible oilseeds) is useful as an organic pest repellent as well as growth promoter.

2009-2010

'Bio-Methanation Plant with Water Hyacinth, Ipomoea and sea weed as input material' project .

Presented Paper, received an award of Rs. one lakh from NRDC , New Delhi

2010-2011...

Bigger size Biogas plants

Construction of Bigger size Cow dung and Kitchen Waste biogas plant started in 2010 at Milestonez hotel,Chennai so far 18 plants installed up to 2022

(size 10cum to 100cum)

Hand in Hand inclusive Development Project at Mahabalipuram

Electricity Generation from Bio -Methantion

2010-2011

Compressed Bio gas plant

Successfully tried proto-type at Sevaiyur , Virudhunagar Dist.

Vaccum pressure swing Absorption (VPSA) system with 2 stage compressor, control panel and CBG cylinders - supported by Ford Foundation

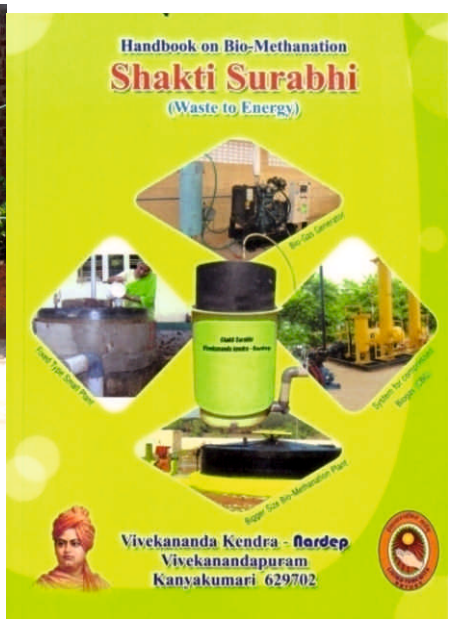
Repair and maintenance of Bigger size biogas plants

Taken many assignments in Tamilnadu

2010-2012

NABARD - Rural Innovation fund project - Installed 104 Shakti Surabhi Bio gas plants all over India - Different Agro climatic conditions

Published Hand book and Documentry on Bio-Methanation plant



2011-2012

Developed Fixed type Kitchen waste based Shakti Surabhi Biogas plant

Energy village concept -

Sivasubramaniapuram - 26 plants installed

2014-16

Brahmos project -Rameswaram

Awareness programme : 406

Shakti Surabhi Plant construction : 104

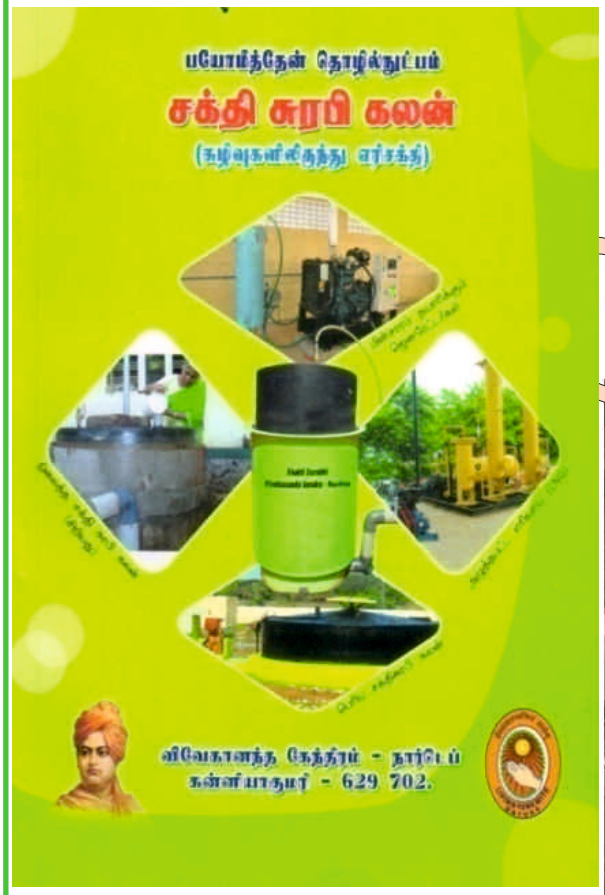
(1 cum Fixed model -100 nos and 6cum - 4 nos)

Published book on Shakti Surabhi bio gas plant -Tamil

A film on

Shakti Surabhi "Fixed Plant"

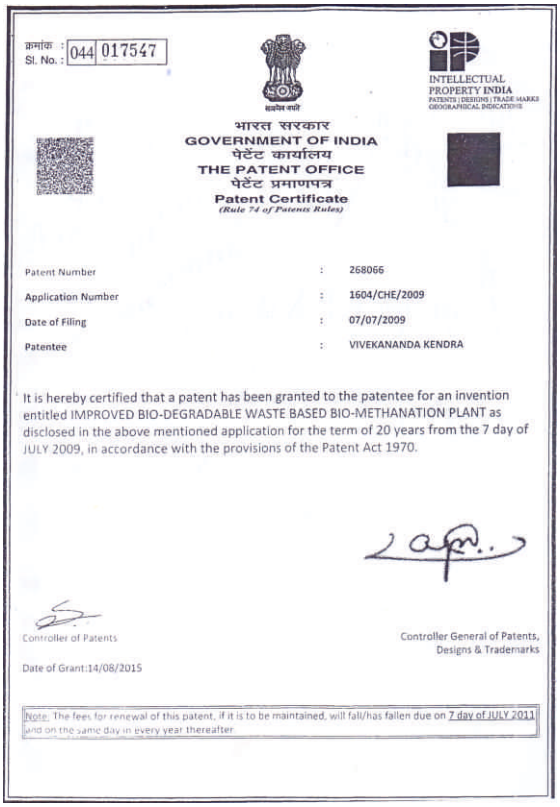
Vivekananda Kendra -nardep
Kanyakumari -629 702



2009-2015

Patents for Shakti Surabhi Plant

Indian patent -2009



क्रमांक : 044 017547
Sl. No. :

INTELLECTUAL PROPERTY INDIA
PATENTS | DESIGNS | TRADE MARKS | GEOGRAPHICAL INDICATIONS

भारत सरकार
GOVERNMENT OF INDIA
पेटेंट कार्यालय
THE PATENT OFFICE
पेटेंट प्रमाणपत्र
Patent Certificate
(Rule 74 of Patents Rules)

Patent Number	:	268066
Application Number	:	1604/CHE/2009
Date of Filing	:	07/07/2009
Patentee	:	VIVEKANANDA KENDRA

It is hereby certified that a patent has been granted to the patentee for an invention entitled IMPROVED BIO-DEGRADABLE WASTE BASED BIO-METHANATION PLANT as disclosed in the above mentioned application for the term of 20 years from the 7 day of JULY 2009, in accordance with the provisions of the Patent Act 1970.

Controller of Patents

Controller General of Patents, Designs & Trademarks

Date of Grant:14/08/2015

Note: The fees for renewal of this patent, if it is to be maintained, will fall/has fallen due on 7 day of JULY 2011 and on the same day in every year thereafter.

South Africa patent -2013

REPUBLIC OF SOUTH AFRICA

REPUBLIEK VAN SUID AFRIKA

PATENTS ACT, 1978

CERTIFICATE

In accordance with Section 44(1) of the Patents Act, No. 57 of 1978, it is hereby certified that:

VIVEKANANDA KENDRA

Has been granted a patent in respect of an invention described and claimed in complete specification deposited at the Patent Office under the number

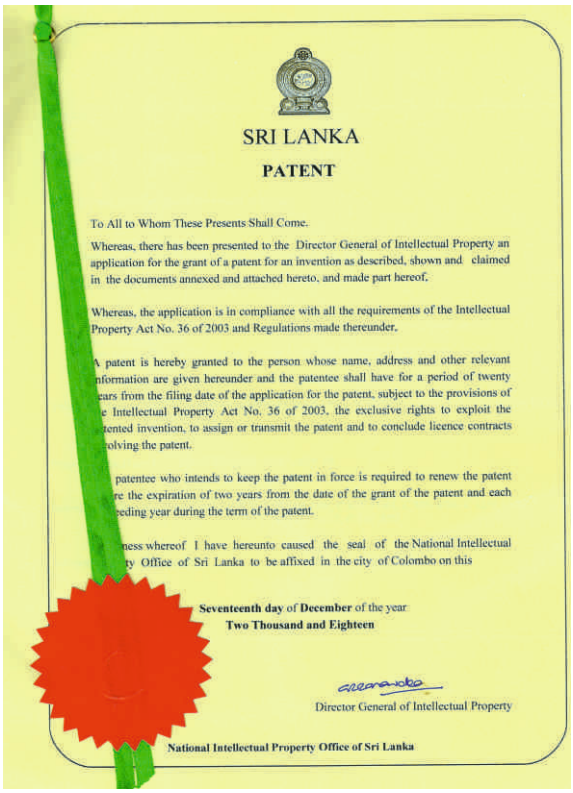
2012/00072

A copy of the complete specification is annexed, together with the relevant Form P2.

In testimony thereof, the seal of the Patent Office has been affixed at Pretoria with effect from 26 June 2013

Registrar of Patents

Sri Lanka patent -2012



SRI LANKA

PATENT

To All to Whom These Presents Shall Come.

Whereas, there has been presented to the Director General of Intellectual Property an application for the grant of a patent for an invention as described, shown and claimed in the documents annexed and attached hereto, and made part hereof.

Whereas, the application is in compliance with all the requirements of the Intellectual Property Act No. 36 of 2003 and Regulations made thereunder.

A patent is hereby granted to the person whose name, address and other relevant information are given hereunder and the patentee shall have for a period of twenty years from the filing date of the application for the patent, subject to the provisions of the Intellectual Property Act No. 36 of 2003, the exclusive rights to exploit the patented invention, to assign or transmit the patent and to conclude licence contracts involving the patent.

A patentee who intends to keep the patent in force is required to renew the patent before the expiration of two years from the date of the grant of the patent and each succeeding year during the term of the patent.

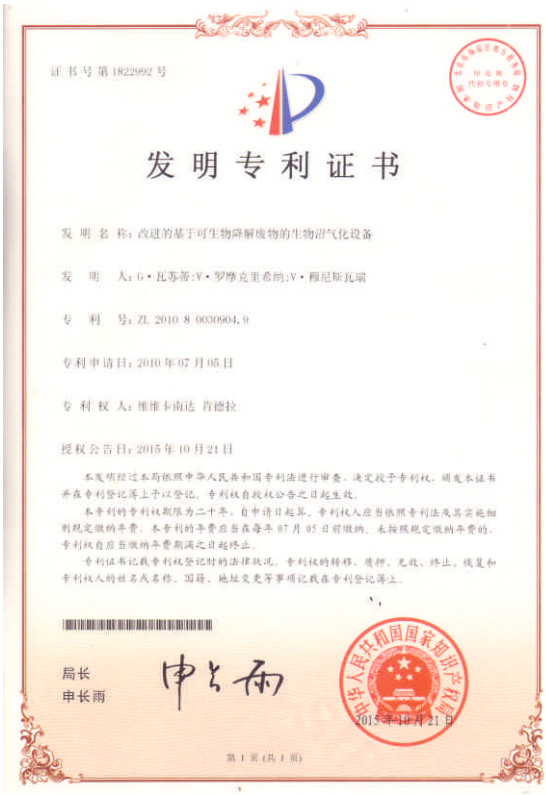
In witness whereof I have hereunto caused the seal of the National Intellectual Property Office of Sri Lanka to be affixed in the city of Colombo on this

Seventeenth day of **December** of the year
Two Thousand and Eighteen

Director General of Intellectual Property

National Intellectual Property Office of Sri Lanka

China patent -2015



证书号第1822992号

发明专利证书

发明名称：改进的基于可生物降解废物的生物沼气化设备

发明人：G·瓦苏蒂;V·罗摩克里希纳;V·穆尼斯瓦瑞

专利号：ZL 2010 8 0030904.9

专利申请日：2010年07月05日

专利权人：维维卡南达 肯德拉

授权公告日：2015年10月21日

局长
申长雨

2015年10月21日

第1页(共1页)

2014-16

BrahMos project

Solar lights at Dhanuskodi – 200 houses

2013-20

IFAD project

IFAD
INTERNATIONAL FUND FOR AGRICULTURAL DEVELOPMENT

Awareness programme - More than 5000 + participants
Training programme : More than 2000 + participants
Shakti surabhi Biogas plants construction : 1182 stakeholders
Districts- Kanyakumari, Tirunelveli, Thoothukudi, Ramanathapuram, Pudukottai, Thanjavur, Tiruvarur, Nagapattinam, Cuddalore, Villupuram, Kancheepuram, Tiruvallur of Tamilnadu

Training programme on biogas plant for Masons

Repair and maintenance of biogas plant

- 2016-17 - 32 participants &
  2018-19- 31 participants

Technology Transfer

Shakti Surabi Bio gas Plant installed in Gorakhnath Ashram, Gorakhpur - Chief Minister Yogi Adityanath inspecting the unit

Vijaya Industries , Udupi for Karnataka

Kasi Sewa Sadan Samiti, Kasi for Uttar Pradesh

2015-20

Portable cow dung based plant -R & D project

There is a demand for small portable plant using cowdung as majority of the small farmers and householders are having one cow and a calf.

Conventional Bio gas model is not only costly but also not possible to construct due to non availability of trained masons and quality material like Bricks and sand. We prepared a mould so that the dimensions will remain perfect and no chance of error

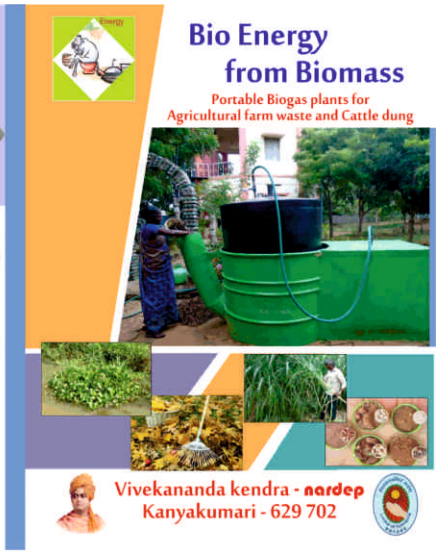
Designed the plant for small family

2015-20

Biogas plant for Agricultural Farm Waste

"Innovative portable Biogas plant from Agricultural farm waste", supported by NABARD, Chennai. We made a series of experiments on different farm waste before finalising the prototype. Based on the results, we field tested six portable bio gas plants with cow dung as an input material and seven Bio-methanation plants based on farm waste.

During our expermentation, we found that fixed batch type model is better for farm waste rather than portable plant.. we also published a book and documentery of our work.



Use of Biogas slurry as an organic fertiliser, growth promoter or pest repellent

VK-Nardep made a series of experiments with the help of a regular Shakti Surabhi plant by feeding fine powders of the following:

i. Non-edible oil cake such as Pongamia, Neem etc.

ii. CO4 Napier grass

iii. Nochi

iv. Gliricidia etc.

We found the Napier Grass as well as Elephant grass of the same family is ideal for producing Bio-Methantion. while Non edible oil cake works as a wonderful growth promoter and Nochi as a pest repellent

2018-2019

Installed 24 nos.1cum capacity of portable biogas plant & 4 nos. of 6cum capacity plant at Rameswaram

(NSE and Hand in Hand inclusive Development Services)

Bio-Toilet System at VK-Nardep Office

In this system Toilet is directly attached to the Biogas system

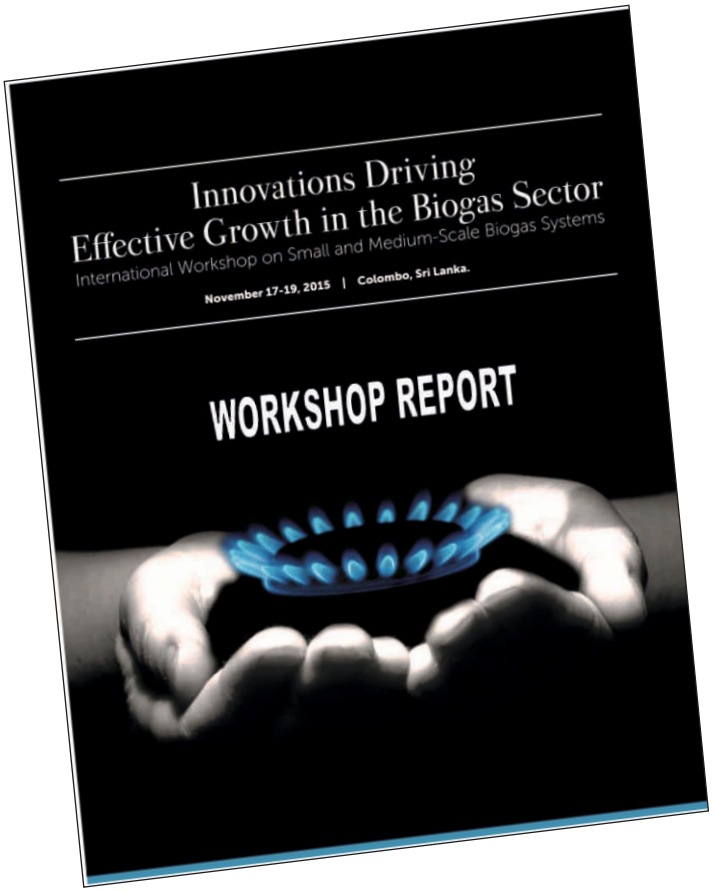
Advantages of Bio toilet system are :

1. No infestation of cockroaches and flies.
2. No maintenance required.
3. Reduction in faecal matter by 90%.
4. No need of removal of solid waste.
5. No contamination of water table.
6. There is no need of soak pit or septic tank
7. Slurry coming out is harmless and can be used for backyard garden

Supplied 320 + Biogas plants to Householders, Hotels, Restaurant, educational Institutions, Research stations etc., in different parts of India

International Seminars and Workshops

Sl.No	Subject	Place	Dates	Name of the presenter
1.	International workshop on Biogas technology	Beijing, China	18th to 21st October 2005	Shri.G.Vasudeo
2.	International workshop on the use of Bio-slurry	Bangkok, Thailand	27th and28th September 2006	Shri.G.Vasudeo
3.	Innovations driving effective growth in the Biogas sector	Colombo, Sri Lanka	17th and 18th November 2015	Shri.V.Ramakrishnan



2019-2020

Training programme :

Training Programmes on Bio-Methanthan plant
7 nos.- 196 participants

Awareness programmeon"Cowdung and Biomass based portable Bio-methanation Plant" .12 programme -430 participants

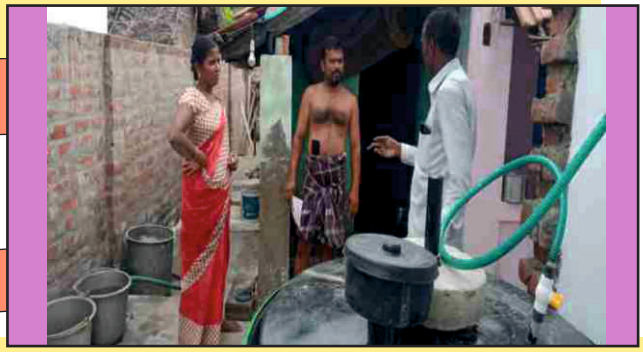
Training programme on"Cowdung and Biomass based portable Bio-methanation Plant" 6 programmes -125 participants

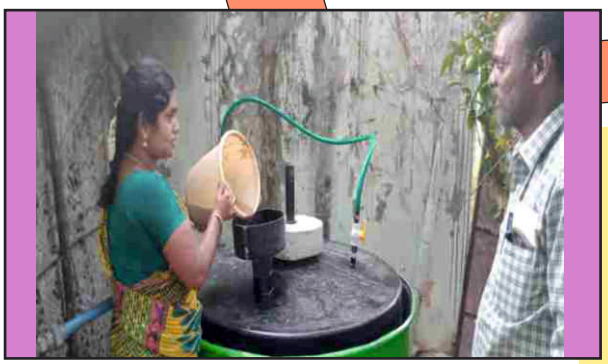
Training programme conducted on "Repair and Maintenance of Bio gas plant"22 &23rd Nov.2019 - 31 participants attended from 11 districts of Tamilnadu.
International Fund for Agricultural Development sporsored these participants, so that they can go back to the field and carry out minor repairs of the Bio gas plant

2019-2020

IFAD supported programme

6 districts of Tamilnadu Tirunelveli, Thoothukudi, Ramanathapuram, Pudukottai, Thanjavur and Tiruvarur .
1cum capacity Bio gas plant 137 nos





20 numbers of kitchen waste based 1 cum. bio gas plant installed at Rameswaram supported by :
Hand in Hand Inclusive services, Chennai as a part of project "Aspiration"

2 numbers of 6cum capacity kitchen waste based bio gas plant installed at Rameswaram & Kanyakumari.
Each plant will save 6 LPG cylinders per month in optimum conditions.

25 cum capacity kitchen waste based bio gas plant constructed at Chennai

2019-2020

Moulds of 3,4 & 6 cum capacity Shakti Surabhi Bio gas plants sent to Kashi Sewa Samithi.Varanasi Moulds ensures proper quality by way of accurate dimensions and fine polish

Shakti SurabhiBiomethanation plant goes to Uttar Pradesh ...

Installa?on of Biogas plant for kitchen waste at Gorakhnath temple premises

Chief minister of Uttar Pradesh, Yogi Adityanath inaugurated "Shakti Surabhi Biogas plant" installed by Kashi SevaSadanSamiti in the premises of Gorakhnath temple on 19th July 2019. Workers of Kashi SevaSadanSamiti explained to the Chief minister about the working of the plant and usages such as (i) Methane gas for cooking, (ii) waste management and (iii) output slurry as an organic fertiliser. Chief minister was very much impressed with the technology.

Vivekananda Kendra – Nardep has transferred Bio-methanation technology to Kashi SevaSadanSamiti for disseminating it in the state of Uttar Pradesh.

Smt.Selvarani - Panchayat Level Federation member (PLF), Kancheepuram:
I learnt a beautiful song on Biogas (Sana Erivayu .....) from Vivekananda Kendra earlier. The song explains the benefits in 3 – 4 minutes such as saving of trees, better hygienic conditions, various usages etc. After listening the melodious song, IFAD officers always wants me to sing the song during various meetings as its effect is worth one hour lecture on bio gas technology.
Many people wanted this gas plant in our area but this project is over in our district. We will be happy if IFAD extends this project in our district.

Smt. Motcham, Thoothukudi:
My son is a Parish Priest in a church. He always brings his colleagues and other members of the Parish to show the Bio-methanation plant working on kitchen waste. Many of them wonder to see the blue flame coming out of the biogas stove and after knowing that the input material is food waste.

Smt. Selvarani, LevinjipuramPLF -Tirunelveli Dist.:
Earlier I came with my husband to Vivekananda Kendra for bio gas training programme. When I asked Shri.Muneeswaram about the price and subsidy, he informed us that there is no subsidy for portable plant. Luckily, afterwards I joined IFAD as PLF member. Luckily IFAD is propagating this technology. I got the plant with 50% subsidy. My plant is working nicely as I use rice water (kalani)regularly which is full of starch. My husband and other members are happy with this Shakti Surabhi Bio gas plant.

2020-2021

This year, Mahatma Gandhi National Council of Rural Education (MGNCRE), Hyderabad arranged a series of webinars on Solid waste management for NSS college coordinators, teachers of education university and principals of colleges from Tamilnadu. VK-Nardep participated in the seminars and gave presentations mainly on "Bio-methanation technologies". In addition, there were a few training programmes which are listed below:

No	Topic	Date	Nos.
1.	Webinar on Solid waste management for NSS College Coordinators of Tamilnadu Mahatma Gandhi National Council of Rural Education (MGNCRE), Hyderabad Shri.V.Ramakrishnan gave a presentation on 'Bio-methanation technology'	30.06.21	60
2.	Webinar -Waste Management of College Campus Principals of Tamilnadu Teachers education university MGNCRE, Hyderabad Shri.Ramakrishnan- Shakti Surabhi Bio-methanation plant Shri.G.Vasudeo- Need of change in life style after pandemic	03.07.21	140
3.	Online training programme on "Kitchen waste based biomethanation plant" DST Core Support, New Delhi Shri.V.Ramakrishnan	11 -12.07.21	22
4.	Webinar -Waste Management of College Campus With an efficient Action Plan for Campus Swacchta Principals of Alagappa university` MGNCRE, Hyderabad Shri.V.Ramakrishnan gave a presentation on 'Bio-methanation technology'	23.06.20	45
5.	Webinar -Waste Management of College Campus With an efficient Action Plan for Campus Swacchta Principals of Puducherry University and Jal Shakti, MGNCRE, Hyderabad Shri.V.Ramakrishnan gave a presentation on 'Biomethanation technology'	24.07.20	170
6.	Webinar -Waste Management of College Campus With an efficient Action Plan for Campus Swacchta Principals of University of Madras, MGNCRE Hyderabad Shri.V.Ramakrishnan gave a presentation on 'Bio methanation technology'	25.07.20	70

2020-2021

No	Topic	Date	Nos.
7.	Webinar -Solid Waste Management Principals of Manonmaniam Sundaranar University MGNCRE, Hyderabad Shri.V.Ramakrishnan gave a presentation on 'Bio -methanation technology'	27.07.20	130
8.	"Bio-methanation technology - V.Ramakrishnan	31.10.20	04
9.	"Bio-methanation technology" - Shri.V.Ramakrishnan	21.11.20	27
10	Training programme on "Bio -methanation technology"	22.11.20	48
11.	"Bio-methanation technology Shri.V.Ramakrishnan	28.11.20	32
12.	"Bio-methanation technology" - Shri.V.Ramakrishnan	28.11.20	01
13	Bio-Methanation technology - Kasi Sewa Samithi, Kasi Shri. G.Vasudeo	15.12.20	14
14	Tranoinig on Bio Methanation Technology	23.01.21	01

Installation of Shakti Surabhi Bio-Methanation plants -16 nos.

V.Ramakrishnan interacting with the participants during the webinar

6cum portable plant installed at School in Rameswaram

Resource Recovery Park, Pottayadi, Mylaudy Town Panchayat - Bio-methanation plant based on kitchen waste

Stakeholder pouring the waste in the Bio-methanation plant - project supported by NABARD, Chennai

2020-2021

Repairing of Bigger size plant

Uthamapalayam Town Panchayat, Theni District were contacting VK-Nardep office desperately with a request to send our supervisor to check up 100 cum plant operating on kitchen waste and manufactured and commissioned by other agency.

The plant remained idle for 2 – 3 months. Neither the original vendor was coming for the check up and repairs nor other vendors working in the field of Biogas could solve the problem. Finally, VK-Nardep sent their supervisor who was working in the field at Pollachi at that time.

THENI DISTRICT – UTHAMAPALAYAM TOWNPANCHAYAT
SOLID WASTE MANAGEMENT – BIO METHANATION PLANT

The authorities were so desperate that they lifted our supervisor in a car from Pollachi and took him to Theni which is 270 kms away.

Our supervisor checked every aspect as per the inspection protocol starting from inlet, outlet, gas holder, pipeline etc. Surprisingly everything was ok. The balloon was full of gas but the burner was not burning.

Our supervisor intuitively understood that there must be water in the pipeline. His guess was correct. He drained all the water and fitted one extra valve for draining the water in future. After removing the water, he was sure that the burner would start burning. However, to his disappointment, there was no flame coming.

Again, our supervisor started checking each and every part of the plant and then his attention went towards gas flow meter. He thought of taking a chance of removing the gas flow meter and giving direct connection of the pipeline to the burner.

This time he was triumphant as a big flame came out of the burner. Everybody started clapping for the success of mission as the mystery was solved and the culprits were water in the pipeline and gas flow meter, which were blocking the passage of gas going to burner.

2020-2021 27 years old Bio gas plant still going strong

Vivekananda Kendra – Nardep constructed 3 cum. Deenabhandu type biogas plant in the year 1993 at Sitamoni house, Perumalpuram, Tirunelveli. The owner was not getting gas since 8 – 10 days and so he contacted Vivekananda Kendra.

Our supervisor Shri.Muneeswaran visited the house and was pleasantly surprised to see the name of Vivekananda Kendra – Nardep inscribed near the plant along with the year of commissioning – 1993.

Shri.Muneeswaran, to his surprise found everything perfect except the scum formation at the inlet. He requested the owner to clean the entire plant, as they have not done it after commissioning the plant 27 years ago.

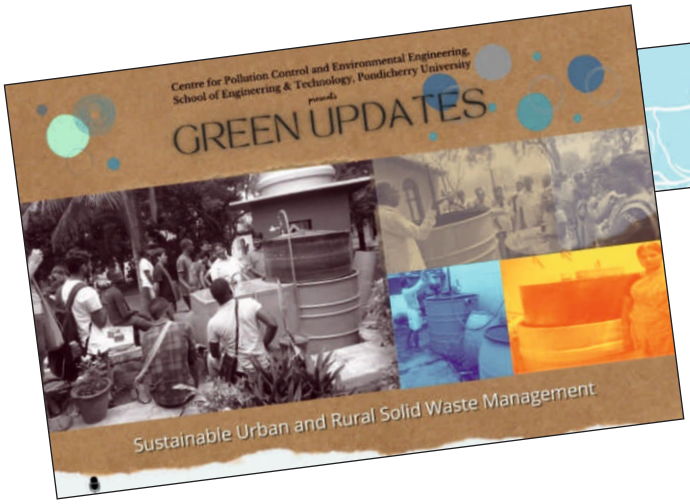
With the help of slurry pump, they removed all the slurry from the plant. Then our supervisor requested the labourers to enter inside the plant through inlet as there was lot of scum and mud accumulated inside. Labourers were afraid to enter and so Shri.Muneeswaran himself went inside first and started cleaning the dirt accumulated inside the plant. Afterwards, other workers joined him and removed lot of scum as well as sand and soil deposited in the plant. After cleaning with water, the house owner again started feeding the plant with fresh cow dung slurry.

2021-2022

Bio Methanation Plants in Urban Areas

64 plants installed at Semmancherri Chennai for poor people with support of Hand in Hand inclusive development services

- Several papers presented all over India
- Print Media gave a good coverage from time to time
- Gave talks on local station s of All India Radio and Doordarsans private tv stations etc.,



Industrial partner in Tezpur University in the Below mentioned Project :

ePPMS

Multi-crop Residue Processing Technology Package for production of Fuel and Fertilizer

2022-2023 Bio-Methanation plant at perumpakkam and Kummidipoondi

Installed 83 nos of one cum capacity Bio-methantion plants at Slum Development, Rehabilitation and Resettlement housing unit at perumpakkam of Chengalpattu Dist and 30 nos .one cum capacity plant installed at Kummidipoondi, of Thiruvallur dist. Beneficiaries underwent Awareness , Training and Follow up training programmes. Beneficiaries were very much interested to have a plant at home. Now nearby house holds also wanted to have this plant for saving of LPG cost and Bio manure for their kitchen garden.

Gobardhan Scheme - Installed 6cum capacity plant at Schools :

Installed 6cum capacity plant at 8 schools at Kanyakumari Dist. , In addition, one school at Villupuram Dist. and 4cum plant at Tenkasi Dist, under Gobardhan scheme. Constructed Plantform for keeping the plant and steps for feeding waste .Trained Noon-meal workers for proper maintenance and use

2022-2023

Shakti Surabhi Biogas plant at Ramanathapuram Dist.

We have taken up Installation of kitchen waste based Bio methantion plants. We selected Thattankudiruppu, Sathanur and Appanendhal villages of Mudhukulathur block along with Rameswaram Island for executing the project as we have already developed a social capital in these places. In the first phase, awareness camps were conducted for the stakeholders. 15 programmes conducted - 461 participants attended. During the camps, survey forms were distributed for collecting the data for final selection of stakeholders. . Villagers were kind enough to give space for manufacturing the units at site by giving store room for keeping the material and room for workers for residence.

After scrutinising all the forms, hundred and two beneficiaries were selected for commissioning the plants.

A total of 102 Plants were installed i.Thattankudiriru- 59 nos , ii. Sathanur – 12 nos, iii. Appanendhal – 11 nos iv. Ramanathapuram -3 nos. and v. Rameswaram -17 nos. All Stakeholders trained for i. Do's, Don'ts ii. How to increase the efficiency of the bio gas plant iii. Bio gas stove maintenance and iv. usages of slurry at the backyard. We conducted follow - up training programme for all beneficiaries after a few months.

In addition, we have also installed 4 nos of 6 cum capacity plants 2 each in Ramanathapuram and Rameswaram Island.

Project Output : I. Safe disposal of 800-900 liters of cooked and vegetable waste ii. 60 kg worth of LPG is saved iii. 6000 rupees worth of money saved iv.1500 to 1600 liters of liquid fertiliser used in the farm, v. 125 cubic metres of methane gas is safely used for cooking. Thus, avoided global warming.

BrahMos Aerospace , New Delhi supported this CSR project

2023-2024

Inauguration of Shakti Gramam, Thattankudiyiruppu, Ramanathapuram Dist.

(6th May, 2023)

- Dr.Sanjeev Kumar Joshi, Deputy CEO, BrahMos Aerospace Pvt. Ltd, New Delhi and his colleagues Shri. Goel, Company Secretary and Shri. Ramasubramanian, CSR Manager, started their visit from Muthumariamman temple.
- Then the BrahMos team went round the village to inspect the installation of Bio-methnation plants. They interacted with the stakeholders; saw its working by going to the kitchen as well as the use of slurry in the kitchen garden. After visiting the terrace of the beneficiary, they were delighted to see several plants around in different houses.
- District Collector Shri. Johnny Tom Varghese IAS also joined the team and inspected a few more plants.
- Villagers were very particular that the dignitaries should plant a few saplings to mark the occasion so that the stakeholders will remember the day for ever. So, BrahMos officials and District Collector planted 6 saplings
- Shakti Gramam board was unveiled by Dr. Sanjeev Kumar Joshi, Deputy CEO, BrahMos Aerospace Pvt. Ltd. He was guided by village youth Shri. Senthil who explained the concept of Shakti Gramam – Energy Efficient Village
- Milestones of the village Thattankudiyiruppu has been depicted on a board which was unveiled by Shri.Johnny Tom Varghese IAS, District Collector, Ramanathapuram.
- Explanation of the Milestones were brought out in a book form and was released by the District Collector
- Entire Programme was organised by villagers , Shri.Palaniselvam, Village Treasurer guided the villagers for taking a Oath of clean Environment.

2023-2024

1.Training programme on "Bio-methanation technology" 5 programmes . – 97 participants

2. Training programme on "Bio-methanation technology"

Held at Vivekanandapuram on 28th April. 31 participants attended this programme. Shri.V.Ramakrishnan and Smt.S.Premalatha were the resource persons. The programme was sponsored by Amrita College of Engineering and Technology, Nagercoil.

3. Swachh Bharat Mission – GobarDhan field functionaries training for Kanyakumari Dist. - 47 Govt staff attended , 23rd Jan. 2024

Govt. officials learnt

- Working method
- Improving efficiency of Bio gas plant
- Maintenance of the plant
- Slurry management
- Do's and Dont's
- Maintenance of the Biogas stove

4. Swachh Bharat Mission – GobarDhan field functionaries training for Tenkasi Dist -60 Govt. staff attended

5. Installation of Bio-Methantion plants

- 8 nos of 1cum Bio-Methanation plants installed at different places
- 1 no of 2 cum plant installed
- 3 nos 6 cum Bio-methanation plants installed at different colleges

6. Maintenance of Bio gas plants Programmes

Shri. Muneeswaran and Shri.Periyaswamy visited Kummidipoondi and Thattankudiyiruppu Ramnad dist. for maintaining the bio gas plants which were installed in the earlier year

2023-2024 GobarDhan Scheme :

Tenkasi Dist:

We installed 6cum capacity kitchen waste based "Shakti Surabhi" Bio Methanation plants at the following panchayat unions. : i. 11 plants at Kadayanallur, ii.4 plants at Kuruvikulam, iii.3 plants at Sankarankovil iv)2 plants each at Vasudevanallur, Keezabhavoor, Alankulam,Melanithinganallur and v.1 plant at Sengottai. Thus 27 plants installed in 27 schools of the district

Kanyakumari Dist:

We installed kitchen waste based Bio Methanation plants at the following panchayat unions. - Total 17 plants.
I. 4 plants at Agasteeswaram union, ii. 6 plants at Thovalai union iii. 2 plants at Kurunthancode iv. 3 plants at Killiyur v. 2 plants at Rajakkamangalam

Villupuram Dist:

We installed kitchen waste based Bio Methanation plants at the 8 Panyat schools of i.Nedimoziyanur ii.Mailam iii. Pelakupam iv.Avvaiyarkuppam v.Chendur, vi.Deevanur, vii.Poompoondi, viii.Kattusivari of Mailam Block

2024-2025 100 cum capacity Kitchen waste based "Shakthi Surabhi Bio-Methanation plant" :

- ★ Installed under GobarDhan scheme with the support of District Rural Development Agency, , Villpuram at Medical college, Villupuram
- ★ The system consists of Hydrolysis tank, crusher, feeding tank, inlet, Masonry Reactor, MS with FRP coated gas holder, outlet slurry tank, pipe line connection and burners
- ★ Blower installed to get high pressure to the Burners
- ★ During Inaguration, Additional collector, Villupuram handed over the unit to Dean of Medical college for maintenance
- ★ Our supervisor given proper training to the students and Green workers
- ★ This system is maintained by students - by taking correct measurements and and recording in the log book.

Advantages in the optimum conditions :

1. On an average 500 kgs of kitchen waste is disposed through this plant per day and thus, 182 tonnes waste safely disposed per year.

2. Saves 43 kgs of LPG per day for 365 days and thus 15675 kgs of fossil fuel saved per year.

3. Rs,15,67,500/- amount saved per year

4.On an average 1000 liters of liquid manure will get per day and thus 365000 liters per year

5. Avoids escaping of 100 cum green house gas per day and thus, 36500 cum of gas per year.

2024-2025

Installation of Shakti Surabhi Biogas plants :

- ⇨ 1 cum cow dung based biogas plant - 42 nos.
- ⇨ 6 cum kitchen waste based bio gas plant - 1no.

As a part of Swatch Bharat, we regularly maintained the plants in different schools.

- ⇨ 6cum plant - 27 schools - Tenkasi Dist.
- ⇨ 6 cum plant - 17 schools - Kanyakumari Dist
- ⇨ 6cum plant - 8 schools - Villupuram Dist.

Project work :

★ Shri. M.C.Eniyan from Dept. of Mechanical Engineering, College of Engineering, Konam, Nagercoil collected slurry from Bio-methanation plant for doing his Ph.D project work.
He is doing project under the guidance of Vivekananda Kendra –NARDEP.

★ 2 students from Dept. of Agricultural Engineering, TNAU, Coimbatore visited on 10th March, 2025 and surveyed the efficiency of Bio-Methantion technology for their project work

★ 4 students from Holy Cross college, Nagercoil visited on 25th March for project work on Bio-methanation technology.

★ Two Bio-methanation plants of 6 cum capacity were repaired and re-commissioned at National Institute of Ocean Technology (NIOT), Pallikaranai, Chennai

"Shakti Surabhi" Bio-Methanation Plants

Patent - PCT/IN2010/000449

5 in 1 solution

1. Liquid organic Manure

2.Saving of money

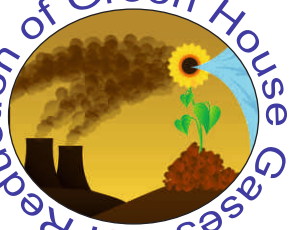
3.Gas for Cooking,

CBG

Electricity Generation

4. Pollution control

5. Reduction of Green House Gases



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