ECO
BIOENERGY SYSTEM

“KNOW THE INDUSTRY EXPERT

Welcome to Eco Bioenergy System, your premier partner in sustainable energy solutions! With over a thousand successfully completed biomethanation plant projects. Under our belt spanning commercial and institutional sectors, we stand tall as the leading Biomethanation plant manufacturing company in South India.

At Eco Bioenergy System, we provide a complete solution for all your organic, sanitary and kitchen waste-related problems by implementing the latest technological advancements. Our services meet the statutory requirements for the following industries and related categories: hospitals, apartments, hostels, industries, community centers, hotels and restaurants, shopping malls, and mass entertainment places.

As a leader in the renewable energy sector, we are committed to providing innovative solutions that not only meet the growing demand for sustainable energy but also empower businesses and communities to reduce their carbon footprint and embrace eco-friendly practices.

Join the growing number of satisfied customers who have made the switch to the Eco Bioenergy system. Experience the difference of working with a company that prioritizes quality, reliability, and sustainability in everything we do. Together, let’s pave the way towards a greener tomorrow with the Eco Bioenergy System.

Why Choose Us ?

01 PROVEN EXPERTISE

With years of experience in biogas plant manufacturing, we are industry leaders committed to delivering top-tier solutions for sustainable energy production. Our team consists of engineers and experts with deep knowledge of biogas technology.

02 CUSTOM SOLUTIONS

We understand that every project is unique. That's why we offer tailor-made biogas plant designs to meet the specific needs of our clients, ensuring efficiency and maximizing energy output.

03 CUTTING-EDGE TECHNOLOGY

We integrate the latest innovations in biogas technology, ensuring that our plants are equipped for optimum performance, durability, and scalability. Our systems are designed to be future-proof, making them adaptable to advancements in the field.

04 ENVIRONMENTALLY FRIENDLY

Our solutions are designed to reduce waste, lower greenhouse gas emissions, and provide a sustainable energy source. We prioritize environmentally responsible production processes, contributing to a cleaner and greener future.

05 PROVEN TRACK RECORD

We've successfully completed numerous biogas projects across various industries, providing reliable energy solutions for agricultural, industrial, and municipal applications. Our satisfied clients stand as a testament to our quality and commitment.

06 COST-EFFECTIVE SOLUTIONS

We provide value for money by offering efficient biogas systems that minimize operational costs, provide a quick return on investment, and optimize energy utilization, helping you reduce reliance on traditional fuel sources.

What is a Fixed Dome Biogas Plant ?

A Fixed Dome Biogas Plant is one of the most widely used and efficient designs for converting organic waste into biogas and organic fertilizer. It consists of a hemispherical digester chamber (the dome) built underground, which stores the gas generated from the anaerobic digestion of organic matter like agricultural waste, manure, and kitchen scraps.

Key Components and Design:

Fixed Dome Digester: The fixed dome plant consists of an underground hemispherical digester made from brick, concrete, or stone. This dome acts both as the gas storage chamber and as the structural component for the plant, ensuring durability and resistance to environmental conditions.

Inlet and Outlet: Organic waste materials, such as agricultural residue, livestock manure, or kitchen waste, are fed into the plant through an inlet pipe. After digestion, the nutrient-rich slurry exits through an outlet pipe, providing high-quality organic fertilizer.

Gas Storage: The biogas, mainly composed of methane (CH_4) and carbon dioxide (CO_2), accumulates under the dome. The fixed dome design naturally regulates pressure, ensuring steady gas flow without the need for complex mechanical components.

How It Works:

Organic Waste Input: Organic waste is fed into the digester.

Anaerobic Digestion: Microbial activity in an oxygen-free environment breaks down the waste, producing biogas.

Biogas Collection: The gas rises and accumulates under the fixed dome, ready for use.

Effluent Output: The leftover slurry is discharged as organic fertilizer, rich in nutrients.

A Fixed Dome Biogas Plant is a sustainable, low-maintenance, and cost-effective solution for renewable energy production, offering a practical way to reduce waste while generating clean energy.

Advantages of a Fixed Dome Plant !

Durability and Longevity :
The underground construction, combined with quality building materials, makes the fixed dome plant highly durable, often lasting for decades with minimal maintenance.

Cost-Efficient :
Its simple design without moving parts results in low operational and maintenance costs, making it a cost-effective choice for long-term use.

Thermal Efficiency :
The underground installation allows for natural insulation, stabilizing the temperature inside the digester, which is crucial for consistent bacterial activity and biogas production.

Sustainability :
Fixed dome biogas plants offer a closed-loop solution by converting organic waste into renewable energy while producing an organic by-product that serves as fertilizer, promoting a sustainable, eco-friendly process.

Our Biogas Plants are Perfect for :


Hospitals

Restaurant & Hotels


Industries

Schools


Resorts


Convention Centre


Farms


Religious Shrines


Residential Complexes

Hostels

Why Invest in a Biogas Plant ?

Cost-effective Renewable Energy Source

A fixed-dome biogas plant provides a steady supply of renewable energy. By converting organic waste such as agricultural residues, livestock manure, and food waste into biogas, it significantly reduces reliance on expensive, non-renewable energy sources like LPG or diesel. The low operational and maintenance costs make it a highly efficient solution, offering long-term savings.

Sustainable Waste Management

India generates vast amounts of organic waste daily. By investing in a biogas plant, you contribute to effective waste management. Instead of allowing waste to decompose and release harmful methane into the atmosphere, a biogas plant captures this methane to generate clean energy, mitigating environmental damage.

Environmental Benefits

Fixed-dome biogas plants play a critical role in reducing greenhouse gas emissions. Methane, a potent greenhouse gas, is captured and used as a clean fuel source, reducing the plant's carbon footprint. By using organic waste, these plants also prevent the contamination of soil and water resources, promoting sustainable environmental practices.

Energy Independence

A biogas plant provides self-sufficiency in energy, ideal for rural areas or industries with high energy needs. Biogas can be used for cooking, electricity generation, and more, ensuring uninterrupted energy supply.

Improves Soil Fertility

In addition to energy, a fixed-dome biogas plant produces high-quality organic fertilizer in the form of digestate. This by-product is rich in nutrients and can improve soil health, reducing the dependency on chemical fertilizers. For India's large agricultural sector, this is a significant advantage that supports sustainable farming practices.

Durability and Low Maintenance

The fixed dome design is known for its robustness and long lifespan. Unlike other types of biogas plants, the fixed dome plant has no moving parts in the gas chamber, which reduces wear and tear. It also requires minimal maintenance, further lowering operating costs and ensuring reliable energy production over the years.

Awards and Recognitions :

Er. Nazir V.K receiving the Kerala State Energy Conservation Award 2011 from the then Honourable Minister Sri. Aryadan Muhammed, held at Mascot Hotel, Trivandrum, on 14-12-2011 for his outstanding achievements and contribution in the field of manufacturing and commissioning of different models of Biogas plants.

Receiving memento from Honourable Ministers Sri. Saji Cheriyan and Sri. Radhakrishnan during the Inaugural function of Environmental Project (Bio Methenation Plant) at Kerala Kalamandalam.

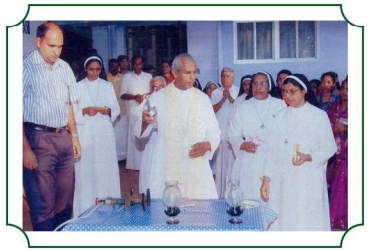
We're Honoured :

Receiving memento from the then Hon'ble Minister for Health Sri. V.S. Sivakumar held at Govt. Medical College Campus, Kozhikode for Erection and Commissioning of six Biogas Plants

Honoured by the then Hon' ble Minister For Industries Sri . P.K. Kunhalikuttyat a function organised by MES to laud his contribution towards promotionof septage treatment systems throughout the State of Kerala.

Er. Nazir V.K Receiving a memento from the then Honorable Minister Sri.MANJALAMKUZHI ALI held at the Manjeri Muncipality, Malappuram for his outstanding achievements and contribution in the field of waste management projects.

Receiving appreciation from MAR PAUL CHITTILAPPILLY, Bishop Emeritus, Thamarassery, for erection and commissioning of night soil based Biogas Plant at Vimala Matha Provincial House, Thamarassery.



Blessing Ceremony of the Biogas Plant at St. Joseph's Hospital, Choondal, Thrissur (Dist)

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