

KIS Group offers products & solutions in Waste Treatment, Biogas Generation & Water Treatment sector to the industrial and Commercial sector around the world. KIS group brings to the customer's extensive expert solutions for different types of waste, and generate biogas which can be used to produce electricity.

KIS Group's Head Office is located in Bangalore, Karnataka, India & has regional offices in Singapore, Indonesia, Malaysia. KIS Group is a ISO 9001-2008 & ISO -14001 Certified.

◆ **TURNKEY PROJECT**

A Project, by definition, is an activity with a definite starting date, specific goals and conditions, defined responsibilities, a budget, a planning and a fixed end date, where multiple parties are involved.

The Project Involves -

◆ **DESIGNING OF LAYOUT:**

Design of Biogas plant & Biogas Power plants for Industrial Waste & Waste Water includes:

- a. Layout of Reactor and other Equipment's based on their location and outlet of waste water.
- b. Each plant layout consists of Pre-treatment, Secondary treatments, Tertiary treatments & Biogas Management.
- c. Equipment sizing is based on the Inlet flow quantity, Quality and type of Waste / Waste Water.
- d. Economical layout of Civil, Piping, Electrical & its allied units.

◆ **SUPPLY OF MATERIALS:**

Supply of all materials relating to Waste & Waste water treatment plant includes:

- a. Basic materials for Structural and Civil construction.
- b. Plates, Valves, Pipes & structural material from reputed manufactures.
- c. Electricals & Instruments along with accessories are provided with advanced technologies.
- d. Biogas Holder and other power plant accessories.

◆ **INSTALLATION OF EQUIPMENTS**

- Installation of all equipment's related to ZPHB<sup>TM</sup> Reactor, Clarifiers, Sludge & Biogas Management system.
- Installation of high-end safety standards equipment's to ensure the Health & Safety.

- Using advanced Electrical & Instrumentation techniques to ensure easy & eco-friendly operations.

◆ **INSTALLATION OF ZPHB<sup>TM</sup> REACTOR**

- Installation of ZPHB<sup>TM</sup> Reactor equipped with mixers/agitators.
- ZPHB<sup>TM</sup> Reactor is the heart of the plant so fabrication is done with utmost Quality & Safety features.
- All welded plates are tested by DPT / RT & NTD methods and hydraulically / pneumatically tested for leakage.
- All such installation processes are always backed by Expert KIS technical support team.

◆ **HYDRO-PNEUMATIC ANALYSIS & PIPE DESIGN**

- Performing Hydro-Pneumatic test for ZPHB<sup>TM</sup> Reactor, Clarifiers, Storage tanks & Biogas holder.
- Analysis is undertaken for smooth operation of system.
- Experienced & capable in-house team is always present for performing testing/analysis.
- Designing of piping systems for all utilities for Biogas, Steam and Water.
- Qualified engineers undertake designing using advanced software & technologies.



◆ **INSTALLATION OF PIPING & SUPPORT:**

- Piping installation for all utilities of Biogas, Water and Waste water.
- Piping installation is by using proper welding techniques according to approved standard and specifications.
- All welded pipes are tested by DPT/RT NTD methods and hydraulically/ pneumatically tested for leakage.
- Piping supports are provided as per standard protocol and wherever required.



◆ **INSTALLATION OF ELECTRICALS & INSTRUMENTATION:**

- Supply of Electrical Cabling, Instruments & allied accessories as per local standard norms and protocols.
- Clean Installation of all as per standards for various motors of Pumps, Mixers, Blowers etc.
- Both Instrument cables & Power cables to & from control panel will be arranged separately in cable tray.



- Latest advanced technologies like HMI, PLC, SCADA systems is used for ease & smooth operations.

◆ **BIOGAS HOLDER/BIOGAS HANDLING SYSTEMS**

- Biogas is stored temporarily in Biogas holder and further used as a fuel for Power Production or is used as fuel in Boiler based on requirements.
- We offer MS cylindrical tanks & Double membrane FRP storage tanks for storage



of Biogas.

- Biogas holder is equipped with all safety equipment's to ensure 100% safe handling & storage.
- Plant is equipped with Flare stack to burn excess Biogas.



◆ **SCRUBBER PLANT**

- Biogas consists of Hydrogen sulfide (H<sub>2</sub>S) which is harmful to Biogas Engine.
- Hydrogen sulfide is removed from Biogas by using Scrubber plant.
- Plant is equipped with all advanced automation techniques for ease & smooth operations.

◆ **BIOGAS ENGINE-ELECTRICITY EXPORT:**

- Scrubbed Biogas taken to Biogas Engine for Production of Electricity.
- Produced Electricity is used for In-house needs & excess power is exported to Grid.
- To ensure smooth & safety operations, advanced technologies are equipped in Biogas engine.



◆ **SAFETY & ALLIED EQUIPEMENTS**

- Plant is equipped with all advanced safety systems to ensure the motto “SAFETY FIRST”.
- Flare stack play a vital role in ensuring the safety at the time of emergency and/or to burn excess Biogas.
- Pressure Breaker is important unit installed to take care of the system so that is not pressurized.
- Vacuum breaker is another important safety unit helps the system to ensure that vacuum is not formed.

◆ **SLUDGE HANDLING SYSTEM**

- Bio-Sludge which is removed from the Clarifiers, ZPHB<sup>TM</sup> Reactors etc. is disposed by ensuring that there is no harm to environment.
- Quantity of sludge is minimized by using the dewatering /drying systems.
- Bio-sludge - rich in macro & micro-nutrients is used in Bio-compost and it's used as manure in land application.