BIOHYDROGEN PRODUCTION FROM BIOGENIC WASTE (SOLID /LIQUID)

INTRODUCTION

Technology is intended to produce Biohydrogen AND fatty acids from waste/wastewater through acidogenic fermentation apart from its remediation. A stand alone process for hydrogen production or as a unit operation in ETPs, Biohydrogen can be used as:

- Energy carrier for automobile sector.
- Raw material and process ingredients in various industries viz., chemical, pharmaceutical, petroleum, fertilizer, food, etc.
- Supplemented as additive in CNG to increase the efficiency Integrated process produce Biomethane and Biohythane. By-product can be used as platform chemicals after separation or as feedstock for production secondary bio-based product production.

SALIENT FEATURES

- Generates 50,000 liters of bio-hydrogen along with 60% of COD removal efficiency with operation loading rate of 50 g COD/L .
- Designed to apply for any kind of waste/wastewater with higher organic load (COD > 5 g/l; BOD/COD > 0.35) as feedstock.
- Can be designed with 10 m3/day to 100 m3/day of operation.
- Captive and Merchant Applications.
- Standalone process for bio-hydrogen production or as an unit operation in ETPs.
- Can be embedded with existing ETPs in industry for captive production.
- Focal technology for production of Bio-based products from waste.
- Simultaneous remediation with resource recovery.
- Sustainable and renewable technology.
- Supports circular bio-economy and can efficiently embedded with waste bio-refinery platform.

MAJOR RAW MATERIALS: Industrial Wastewater (BOD/COD > 0.35 with COD > 5 g/l) Solid waste viz., food/vegetable waste, organic fraction of municipal waste, sludge, biomass, etc.

MAJOR PLANT EQUIPMENT AND MACHINERY REQUIRED: Acidogenic bioreactor, Biogas holding tanks, buffering tank, gas flow meters, innoculum tank, biogas flare, redox control tank, feed/water storage tank, pumps, air compressor, safety valves, control panel, sensors , etc