

# BIOMASS GASIFIER BASED POWER GENERATION SYSTEM

## INTRODUCTION

The technological innovation provided users with the option of dual-fuel operation. The existing diesel genset could run on both diesel and producer gas, instead of running only on diesel. The producer gas is fed into the diesel engine to let the engine operate in a dual-fuel mode, thereby reducing diesel consumption by more than 70%. Biomass gasifier system optimally utilizes biomass for power generation. It consists of a downdraft gasifier, a gas-cleaning train, and an engine. A gasifier is a reactor that converts biomass into clean gaseous fuel called producer gas (having calorific value of the order of 1000–1200 kilocalories per normalized cubic metre).

## APPLICATION

- Effectively make up for the absence of grid electricity supply in many remote areas

## SALIENT FEATURES

- Smooth fuel movement, with the gasifier allowing comparatively larger pieces of wood or fuel briquettes.
- Water seal arrangement with continuous grate-shaking mechanism simplifies ash and char removal without shutting down the system, thus enabling long uninterrupted operation
- Entry of preheated air at two levels helps obtain good quality gas, with low impurities in raw gas.
- Induction of a cooling tower minimizes water requirement for gas cleaning and also reduces the quantities of tar-laden water to be disposed of.

**SCALE OF DEVELOPMENT:** Technology commercialised.

