



ENERSOL BIOPOWER PVT. LTD.

Established in 2013 by Mr. Rai Singh Dahiya, a grassroots innovator in biomass gasifier technology, our company is renowned for its small-size biomass gasifiers, smokeless biomass stoves, and other renewable energy products.



5KVA/4KW BIOGAS GENSET

ESB-R Biogas gensets (100% BIOGAS) have been meticulously designed to enable you to optimize long-term cost savings and environmental advantages derived from biogas utilization.

Commonly, combustion engines are employed to convert biogas into electricity. Diesel engines can be utilized in dual-fuel mode, where a small amount of diesel is used to assist in the ignition of the biogas.



KEY FEATURES

Key features of the ESB-R biogas generator include:

- Renewable source of energy.
- Clean combustible fuel.
- Reduce greenhouse gas (GHG) emissions
- It can be used for domestic & commercial applications.
- Generate revenue sharing gas and energy with the grid network
- Reclaim valuable land normally used for wastewater purification
- Eliminate odor and pest issues



WORKING PARAMETERS

Before entering the engine, the biogas should undergo appropriate filtering, gas-liquid separation, and pressure regulation to ensure no liquid content remains in the gas. The capacity of the biogas pressure-buffering tank should be compatible with the generator's gas consumption.

Additionally, the following specifications must be met:

- Gas temperature must be $\leq 40^{\circ}\text{C}$.
- Moisture content must be $\leq 20 \text{ mg/Nm}^3$.
- Impurities particle size should be $\leq 5\mu\text{m}$, with impurity content $\leq 30\text{mg/Nm}^3$.
- Heat value should be $\geq 4\text{MJ/Nm}^3$.
- Gas pressure should range from 3 to 5kPa, with a pressure change rate $\leq 1\text{kPa/min}$.
- Maximum Hydrogen Sulfide (H_2S) content should not exceed 200PPM, and CO & CO₂ levels should not exceed 30%.

TECHNICAL SPECIFICATIONS



Model Name
ESB-R
BIO-GEN05

Model NO.
ESB-RBG05

Starter
12V Starter

Biogas Consumption
5M³ /hr.

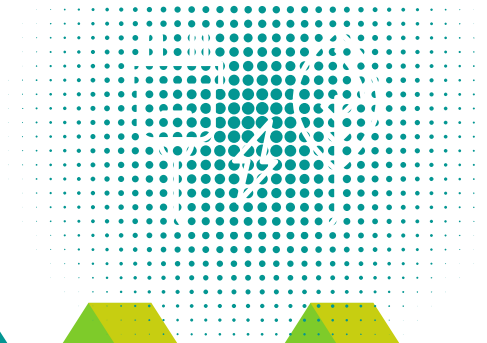
Ignition
Spark Ignition

Battery
Exide

Weight
350kg Approx.

Dimension
H40" x W30" x L40"

PARTICULAR	-	DETAILS
Make	-	Enersol Biopower®
Fuel Mode	-	100% on biogas
Capacity	-	5KVA/4KW
Power factor	-	0.8 P.F.
Frequency (Hz)	-	50Hz
Phase	-	Single
Rated Current (Amps/phase)	-	20Amps (Single Phase)
Voltage (V)	-	230V
Governor	-	Mechanical governor
Acoustic enclosure (Canopy)	-	Provided



TECHNICAL SPECIFICATIONS

ENGINE SPECIFICATIONS

Ignition System	-	Electronic coil
Battery charge	-	12V battery charging alternator
Stroke	-	Four stroke engine
Rated speed	-	3000RPM
Cooling System	-	Air cooled
No. of cylinder	-	1nos.
Lube oil sump capacity	-	1.1ltrs.
Lube oil change period	-	1st Change: 50-80 hrs 2nd Change: 150-200 hrs Subsequent Changes: Every 250-300 hrs.

CONTROL PANEL

Oil pressure gauge	-	Yes
Water temperature gauge	-	Yes
Starting switch	-	Yes
Hour meter	-	Yes
Multi meter (Energy, Voltage, Amps, & Frequency indicators)	-	Yes
Phase indicator lamp	-	Yes
Overload relay contractor	-	Yes
Voltage low/high cutoff protection	-	Yes
Frequency low/high cutoff protection	-	Yes
Phase loss protection	-	Yes
Battery charging indicator	-	Yes



STEPS TO GENSET SUCCESS

✓ Assess Your Power Needs

Evaluate your electricity requirements to determine the appropriate size and capacity of the genset you'll need.

✓ Understand Fuel Options

Consider the available fuel options for your genset, such as diesel, natural gas, or biogas, and choose one that aligns with your preferences and accessibility.

✓ Evaluate Space Requirements

Determine the space available for installing the genset, considering factors like ventilation, soundproofing, and accessibility for maintenance.

✓ Research Local Regulations

Familiarize yourself with local regulations and permits required for owning and operating a genset in your area to ensure compliance.

ESSENTIAL GUIDELINES FOR OWNERSHIP AND OPERATION



✓ Budget for Installation Costs

Calculate the total cost of installing the genset, including any necessary wiring, fuel storage, and site preparation, to avoid unexpected expenses.

✓ Consider Maintenance Needs

Understand the maintenance requirements of the genset, including regular servicing, fuel refills, and repairs, and budget accordingly.

✓ Plan for Emergency Situations

Develop a contingency plan for power outages, including backup fuel supplies, maintenance schedules, and emergency contact information for service providers.

✓ Consult with Experts

Seek advice from genset suppliers, electricians, and other experts to ensure you make informed decisions about the purchase and ownership of your genset.

BIOGAS GENSET PICTURES





OUR PRODUCTS ON YOUTUBE



- ✓ <https://www.youtube.com/watch?v=6cYUyY250XE>
- ✓ https://www.youtube.com/watch?v=iyiz_OBGFGw
- ✓ <https://www.youtube.com/watch?v=W9HXk2M-Mgw>
- ✓ <https://www.youtube.com/watch?v=-XmU5L6lytM>
- ✓ <https://www.youtube.com/watch?v=vY73UXW6aIM>
- ✓ <https://www.youtube.com/watch?v=l8NufIvOH4k>
- ✓ <https://www.youtube.com/watch?v=7MVHph7Nfky>

- ✓ <https://www.youtube.com/watch?v=FYPajsGRrrw>
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- ✓ <https://www.youtube.com/watch?v=OD9ueNYjf1Q&t=23s>
- ✓ <https://www.youtube.com/watch?v=fjULT8k4Ayg&t=9s>
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- ✓ <https://www.youtube.com/watch?v=g1iemqc0-80&t=15s>
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- ✓ <https://www.youtube.com/watch?v=0AhISC5Dw00>
- ✓ <https://www.youtube.com/shorts/tlTevfsPD0o>
- ✓ <https://www.youtube.com/watch?v=Bb8g5ooogaM>

OUR CLIENTS



AWARDS & EXHIBITIONS



- Fifth National Grassroots Innovation Award, 2009.
- Innovation Scholars In-residence Program at President House.
- Indian Merchant Chamber (IMC) – Inclusive Innovation Award, 2012.
- Certificate of Appreciation As “Farmer Scientist” By Rajasthan University of Veterinary & Animal Sciences, Bikaner, Rajasthan.
- Certificate of “Farmer Scientist” By Pacific University, Udaipur, Rajasthan.
- Certificate from Department of Science & Technology at National Science Day, Jaipur, Rajasthan.
- Business Expo Kota 2023, Kota, Rajasthan.
- Exhibition of Innovations, President House, 2010
- Inauguration of ESB-R Biomass gasifier by former chief minister of Meghalaya, 2013
- Third international conference on creativity & innovations at grassroots at Indian institute of management (IIM), Ahmedabad, 2015
- India International Science Festival (IISF), New Delhi, 2016.
- India International Trade Fair (IITF), New Delhi, 2016.
- Mega Science & Technology and Industry Expo, New Delhi, 2017
- Bollywood movie Padman promotion, 2018.



CONTACT US

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