

**TURNING WASTE INTO WATTS
FROM FIELD TO FUEL**



TRANSFORM YOUR ENERGY, TRANSFORM YOUR WORLD

50KVA/40KW

ESB-R BIO-GENSET

**BIOGAS/ SYNGAS/PRODUCER GAS
GENERATOR SETS**



ESB-R BIO-GEN50

ENERSOL BIOPOWER PVT. LTD.

With over a decade of expertise in the green energy sector, Enersol Biopower Pvt Ltd stands as a renowned leader in the manufacturing of sustainable energy solutions. Our extensive product portfolio includes biomass gasifiers, biogas generators, biogas plants, smokeless stoves, biomass torrefaction plants, and used oil distillation machines.



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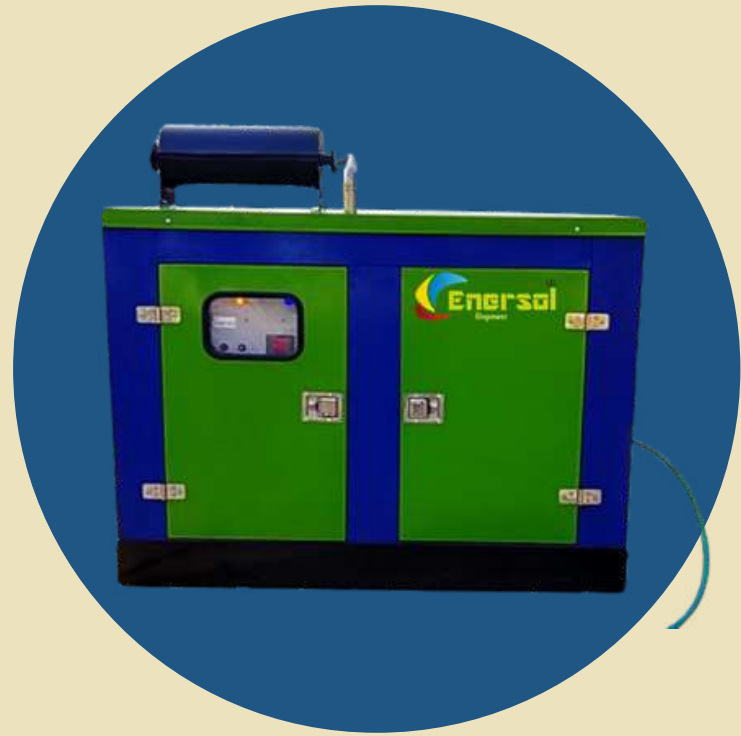


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ESB-R BIO-GEN50

The ESB-R BIO-GEN50 50KVA Biogas Generator Set is engineered for high efficiency and reliability, delivering significant cost savings and environmental benefits through the exclusive use of biogas. This generator is ideal for medium-sized farms and businesses, converting biogas into a consistent and sustainable power supply.

It has been meticulously designed to enable you to optimize long-term cost savings and environmental advantages derived from biogas utilization.





KEY FEATURES

✔ Versatile Product Line

- **Ready-to-Use Units:** Pre-assembled gensets that minimize setup time and effort.
- **Biogas Compatibility:** Designed to operate efficiently using biogas as fuel.

✔ Innovative Design

- **Modern Aesthetics:** Sleek and professional appearance.
- **Space-Saving Size:** Compact design that saves space and cuts installation costs.

✔ Exceptional Reliability

- **Dependable Performance:** Ensures continuous power supply for smooth and uninterrupted operations.
- **Safety Mechanisms:** Includes safety features such as low lube oil pressure protection.
- **Designed for Continuous Use:** Suitable for long-term, continuous operation with advanced technology ensuring consistent performance.



✔ Eco-Conscious Operation

- **Environmentally Friendly:** Runs on 100% biogas, contributing to a cleaner environment and reducing carbon emissions.

✔ User-Friendly Maintenance

- **Simplified Design:** Ready-to-use gensets that are easy to install and operate.
- **Ease of Service:** Facilitates routine maintenance, parts replacement, and overhauls.

✔ Superior Performance

- **Economical Operation:** Lower operating costs enhance overall efficiency and affordability.
- **Reduced Noise and Vibration:** Engineered to operate with minimal noise and vibration.

In short, the ESB-R 50kVA biogas generator is a reliable, efficient, and eco-friendly power solution designed to meet a variety of customer needs.

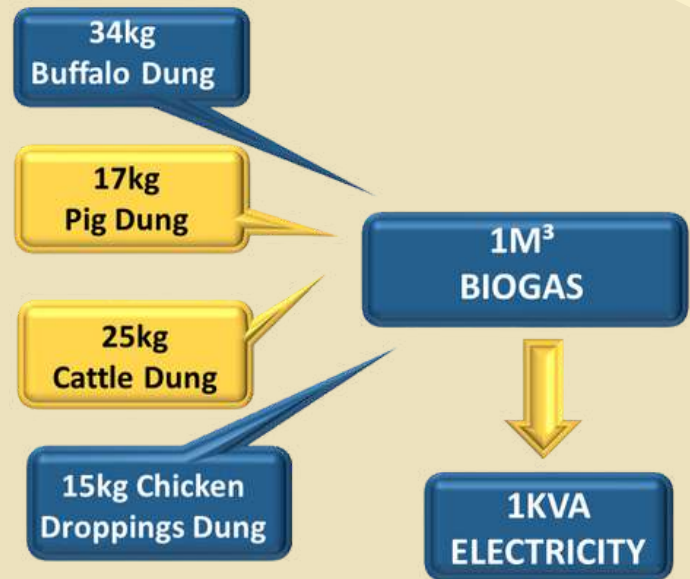


WORKING PARAMETERS

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:

- The biogas used should contain more than 65% methane.
- Gas temperature must be $\leq 40^{\circ}\text{C}$.
- Moisture content must be ≤ 20 mg/Nm³.
- Impurities particle size should be $\leq 5\mu\text{m}$, with impurity content ≤ 30 mg/Nm³.
- Heat value should be ≥ 4 MJ/Nm³.
- Gas pressure should range from 3 to 5kPa, with a pressure change rate ≤ 1 kPa/min.
- Maximum Hydrogen Sulfide (H₂S) content should not exceed 200PPM, and CO & CO₂ levels should not exceed 30%.



The generator's power output depends on the methane (CH₄) percentage in the biogas and other factors, and will vary with changes in methane levels.



TECHNICAL SPECIFICATION

Model Name
ESB-R
BIO-GEN50

Model NO.
ESB-RBG50

Starter
24V Starter

Biogas Consumption
50M³ /hr.

Ignition
Spark Ignition

Battery
Exide

Weight
3.5 Ton
Approx.

Dimension
L140" x W59" x H80"

PARTICULAR	-	DETAILS
Make	-	Energol Biopower®
Fuel Mode	-	100% on biogas
Capacity	-	50KVA/40KW
Power factor	-	0.8 P.F.
Frequency (Hz)	-	50Hz
Phase	-	Three
Rated Current (Amps/phase)	-	65Amps/phase @ 100% 52Amps/phase @ 80%
Voltage (V)	-	415V
Governor	-	Electronic governor
Acoustic enclosure	-	Provided



TECHNICAL SPECIFICATION

ENGINE SPECIFICATIONS

Bore x Stroke (mm)	- 114 x 120
Stroke	- Four stroke engine
Rated speed	- 1500RPM
Cooling System	- Liquid cooled radiator
No. of cylinder	- 6nos.
Lube oil sump capacity	- 20ltrs.
Lube oil change period	- 1st Change: 50-80 hrs 2nd Change: 150-200 hrs Subsequent Changes: Every 250-300 hrs.
Alternator	- Kirloskar /Mahindra/ Cummins etc.

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



BIOGAS GENSET PICTURES



OUR PRODUCTS ON YOUTUBE

- ✓ <https://www.youtube.com/watch?v=OD9ueNYjf1Q&t=23s>
- ✓ <https://www.youtube.com/watch?v=fjULT8k4Ayg&t=9s>
- ✓ https://www.youtube.com/watch?v=rtjSn_9P-Yc
- ✓ https://www.youtube.com/watch?v=ghm_odvyvzc
- ✓ <https://www.youtube.com/watch?v=g1iemqc0-80&t=15s>
- ✓ <https://www.youtube.com/watch?v=g6ya3XhDBCQ>
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- ✓ <https://www.youtube.com/shorts/wa0S18DqY-Y>
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- ✓ <https://www.youtube.com/shorts/LVqJYhPrLXU>
- ✓ <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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