



**ENERSOL BIOPOWER
PVT. LTD.**

ESB-R BIO-GENSET 12.5KVA /10KW



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

ABOUT US

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.

At Enersol Biopower, we are committed to delivering high-quality, innovative products that meet the diverse energy needs of our clients while promoting environmental stewardship. Our team of skilled professionals leverages cutting-edge technology and industry best practices to design and manufacture reliable, efficient, and eco-friendly energy solutions.



ESB-R BIO-GEN12.5

The ESB-R BIO-GEN12.5 12.5KVA 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.



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.

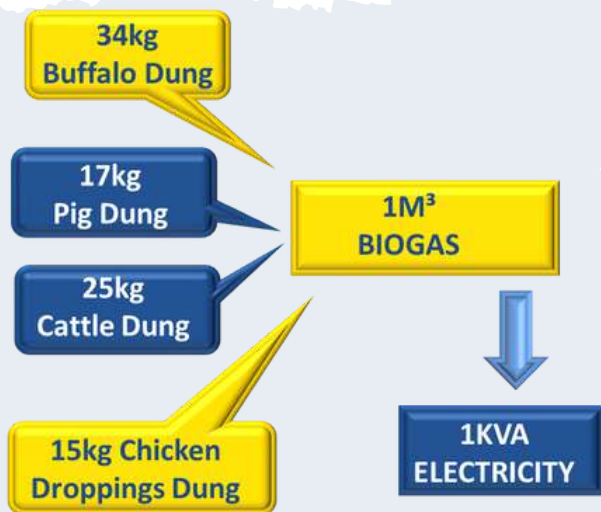
✓ Superior Performance

- **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 12.5kVA biogas generator is a reliable, efficient, and eco-friendly power solution designed to meet a variety of customer needs.



BASIC DETAILS



12.5M³ Biogas is required per hour to run our 12.5KVA biogas generator set

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.

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 $\leq 30\text{mg/Nm}^3$.
- 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 (H₂S) content should not exceed 200PPM, and CO & CO₂ levels should not exceed 30%.

TECHNICAL SPECIFICATIONS

Model Name
ESB-R
BIO-GEN12.5

Starter
12V Starter

Model NO.
ESB-RBG12.5

Biogas Consumption
12.5M³ /hr.

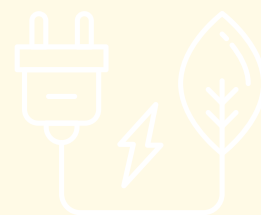
Governor
Electronic

Weight
750-800kg Approx.

No. of Cylinder
2Nos.

Dimension
H72" x W40" x L72"

PARTICULAR	-	DETAILS
Make	-	Enersol Biopower®
Fuel Mode	-	100% on biogas
Capacity	-	12.5KVA/10KW
Power factor	-	0.8 P.F.
Frequency (Hz)	-	50Hz
Voltage (V)	-	415V
Phase	-	Three phase
Rated Current (Amps/phase)	-	15Amps/phase
Governor	-	Electronic governor
Acoustic enclosure (Canopy)	-	Provided

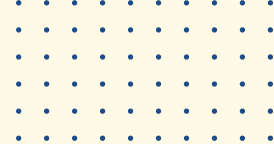


ENGINE SPECIFICATIONS

Bore x Stroke (mm)	-	102 x 116
Stroke	-	Four stroke engine
Engine power output	-	13HP
Rated speed	-	1500RPM
Cooling System	-	Water cooled radiator
No. of cylinder	-	2nos.
Lube oil sump capacity	-	7.2ltrs.
Lube oil change period	-	1st Change: 50-80 hrs 2nd Change: 150-200 hrs Subsequent Changes: Every 250-300 hrs.
Alternator	-	Kirloskar / Mahindra

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



ESSENTIAL GUIDELINES FOR OWNERSHIP AND OPERATION

✓ 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.

✓ 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

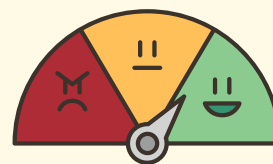
Understand the maintenance requirements of the genset, including regular servicing, fuel refills, and repairs, and budget accordingly.

✓ Plan for Emergency Situations

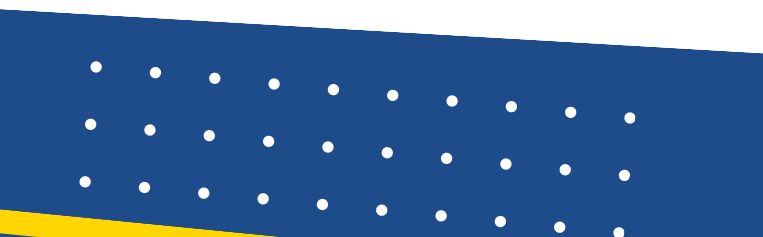
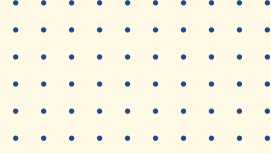
Develop a contingency plan for power outages, including backup fuel supplies, maintenance schedules, and emergency contact information for service providers.

✓ 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=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>
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-  <https://www.youtube.com/shorts/hlZd0ljVccY>
-  <https://www.youtube.com/shorts/LVqJYhPrLXU>
-  <https://www.youtube.com/watch?v=0AhISC5Dw00>
-  <https://www.youtube.com/shorts/tlTevfsPD0o>
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-  <https://www.youtube.com/watch?v=vY73UXW6aIM>
-  <https://www.youtube.com/watch?v=I8NufIvOH4k>
-  <https://www.youtube.com/watch?v=7MVHph7NfkY>



-  <https://www.youtube.com/watch?v=FYPajsGRrrw>
-  <https://www.youtube.com/watch?v=LKDlbvXdHyM&t=9s>
-  <https://www.youtube.com/watch?v=Rp17MmDRilQ>
-  https://www.youtube.com/watch?v=GTmOj_JRLVw
-  <https://www.youtube.com/watch?v=pcQN3qzNfh0>
-  <https://www.youtube.com/watch?v=IAGaO9LRVOY>

OUR CLIENTS



Bharat Petroleum Corporation Ltd.



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The LNM Institute of
Information Technology



IIT Ropar



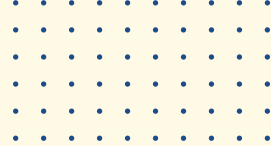
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AWARDS & EXHIBITIONS



- 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.





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