



ES-5000 Energy Server

Welcome to clean, quiet electricity that's always on. Welcome to the ES-5000 Energy Server.



CLEAN POWER ON DEMAND

Bloom Energy's ES-5000 delivers clean power to meet your base load electricity needs. Rain or shine, the ES-5000 seamlessly produces power in parallel with the utility grid. Your new power source will reduce your emissions and save you money.

RELIABLE RISK MITIGATION

The ES-5000 operates at unmatched electrical efficiencies. That means that it consumes less fuel and produces less CO₂ than competing technologies. As the aging grid infrastructure and rising fuel costs cause utility prices to soar, the economic benefits of your ES-5000 will continue to increase.

HIGH-TECH, LOW-COST

Utilizing planar solid oxide fuel cell (pSOFC) technology first developed for NASA's Mars program, the ES-5000 produces clean power at down-to-earth prices. Unlike other fuel cell technologies, Bloom's SOFCs are well suited to high-volume, low-cost manufacturing.

The ES-5000 employs a modular architecture that enables the total installation size to be tailored to your base load electricity demand. Installations can scale from 100 kW – 1 MW or more.

ALL-ELECTRIC POWER

The ES-5000's superior electrical efficiency eliminates the need for complicated CHP systems, and expands the siting opportunities available to you. Your ES-5000 can be installed outdoors in hours rather than months or years.

FUEL FLEXIBILITY

The ES-5000 can run on natural gas, as well as, renewable fuels like biogas. You choose what works for you. Onsite fuels can provide added insurance for your critical loads, and the ES-5000 can switch between fuels on-the-fly.

Future generations of Bloom Energy's Energy Servers will offer the unique capacity to operate as an energy storage device, thus creating a bridge to a 100% renewable energy future.

About Bloom Energy

Bloom Energy is making clean, reliable energy affordable. Our unique on-site power generation systems utilize an innovative fuel cell technology with roots in NASA's Mars program. By leveraging breakthrough advances in materials science, Bloom Energy systems are among the most efficient energy generators; providing for significantly reduced operating costs and dramatically lower greenhouse gas emissions. By generating power where it is consumed, Bloom Energy offers increased electrical reliability and improved energy security, providing a clear path to energy independence.

News & Awards

- Newsweek's Top 10 Eco-Friendly Companies
- CNN/Money Ten Game Changing Startups
- CNBC "Cutting Edge Energy"

Headquarters:

Sunnyvale, California

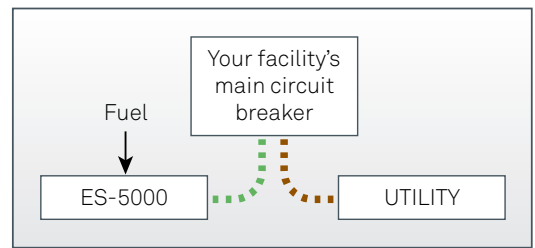
For More Information:

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ES-5000 Energy Server

YOUR POWER IS SECURE

The ES-5000 has been designed in compliance with Underwriters Laboratories (UL) and a variety of safety standards, and is backed by a comprehensive warranty. The ES-5000 actively communicates with Bloom Energy's network operations center. Should the system require unscheduled maintenance, we'll be deploying a solution before you even know there's a problem.



Technical Highlights

Inputs

Fuels	Natural Gas, Directed Biogas
Input fuel pressure	15 psig
Fuel required @ rated power	0.661 MMBtu/hr of natural gas
Water required (for startup only)	120 gallons municipal water

Outputs

Rated power output (AC)	100 kW
Electrical efficiency (LHV net AC)	> 50%
Electrical connection	480V @ 60 Hz, 4-wire 3 phase

Physical

Weight	10 tons
Size	224" x 84" x 81"

Emissions

NO _x	< 0.07 lbs/MW-hr
SO _x	negligible
CO	< 0.10 lbs/MW-hr
VOCs	< 0.02 lbs/MW-hr
CO ₂ @ specified efficiency	773 lbs/MW-hr on natural gas, carbon neutral on Directed Biogas

Environment

Standard temperature range	0° to 40° C (extreme weather kit available)
Max altitude at rated power	6,000 ft. MSL
Humidity	20% - 95%
Seismic Vibration	IBC site class D
Location	Outdoor
Noise @ rated power	< 70 DB @ 6 feet

Codes and Standards

Complies with Rule 21 interconnection standards
Exempt from CA Air District permitting; meets stringent CARB 2007 emissions standards
Product Listed by Underwriters Laboratories Inc. (UL) to ANSI/CSA America FC 1

Additional Notes

Operates in a grid parallel configuration
Includes a secure website for you to showcase performance & environmental benefits
Remotely managed and monitored by Bloom Energy
Capable of emergency stop based on input from your facility



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