

POWERMAX MODULAR HFO POWER PLANT

1–50 MW Heavy-Duty Prime Power Solutions

Factory-prefabricated heavy-duty genset modules with containerized fuel treatment, cooling, electrical and auxiliary systems.



Website



Linkedin

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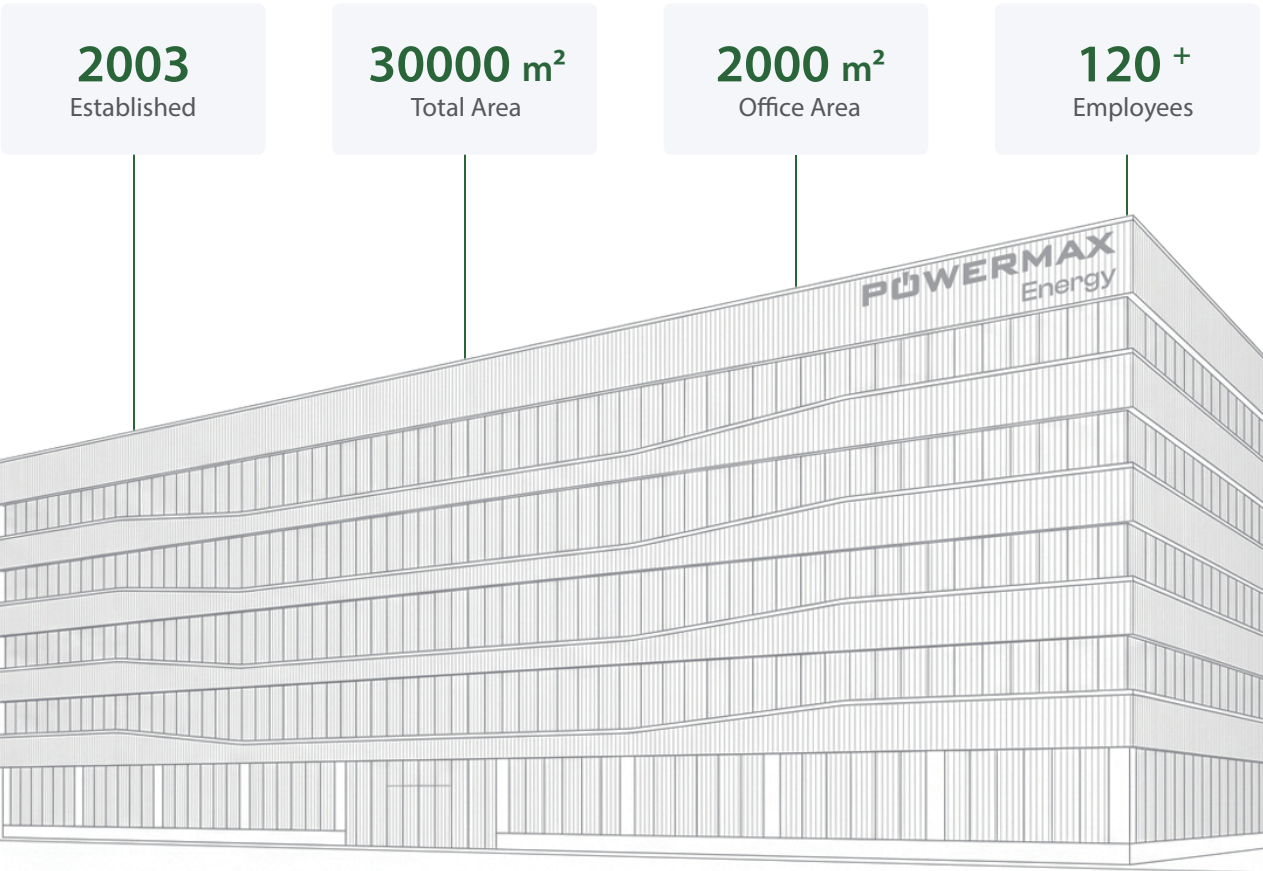
About Powermax Energy

Powermax——Your Comprehensive Energy Solutions Partner Driving the Global Green Transition

Wuxi Powermax Renewable Energy Technology Co., Ltd. (Powermax) is an international technology enterprise specializing in biomass-to-energy conversion and comprehensive energy solutions. Leveraging nearly 40 years of profound technical expertise, we are committed to providing global clients with efficient, clean, and sustainable energy conversion technologies and innovative business models, empowering enterprises worldwide to achieve energy transition and maximize carbon asset value.

40 Years of Technical Expertise and a "Dual-Core" Global Strategy

Powermax’s core technology is built upon the team’s nearly four decades of deep industry engagement. Under the strategic vision of CEO Mr. Charles Qian, the company operates on a "Dual-Core Synergy" model: our domestic entity, Wuxi Teneng Power Machinery Co., Ltd., continuously refines foundational manufacturing processes, while our international entity, Powermax, fully aligns with global standards to expand overseas markets. This strategy ensures that every system we deliver combines exceptional reliability with agile global responsiveness.



Our Services



Remote Support

24/7 telephone and video support, response available within 30 minutes



Spare Parts Supply

Provide critical spare parts throughout the full product lifecycle



On-site Service

Professional service team, on-site within 12–48 hours (depending on location)



Service Reports

Detailed reports and recommendations provided after each maintenance visit

Trusted Partners



Industry Compliance and Certification



One-Stop Turnkey HFO Power Station Solution

We deliver one-stop turnkey total solutions for heavy fuel oil (HFO) power stations, supporting full-scale construction of standardized high-power HFO power plants. Our complete HFO power station is fitted with our in-house developed heavy fuel oil engines engineered for long-term stable operation on high-viscosity heavy fuel oil. Matched with premium Siemens industrial synchronous alternators, the units deliver clean and consistent power output. Adopting advanced two-stage cascade waste heat recovery technology, the system recovers heat from exhaust gas and jacket water to realise combined power generation, heating, cooling and waste heat power generation. This multi-energy cogeneration design greatly improves overall energy efficiency.

Built on an integrated packaged delivery model, our full service scope covers the design and construction of fuel storage tanks, preheating and filtration systems, generator sets, exhaust gas treatment facilities, power distribution systems, supporting cabinets as well as complete oil-thermal-electric intelligent control systems. We offer full lifecycle services including site survey, scheme design, installation, maintenance and comprehensive project operation and management support. Serving as a reliable, efficient and all-in-one power solution, our systems are ideal for mining sites, remote islands, overseas industrial parks and various other off-grid scenarios worldwide.

Core Power



Proprietary Power Core

Forward-designed HFO engines resistant to low-grade fuels, capable of 24/7 full-load continuous operation.



High Performance Alternator

High insulation & low power loss, stable voltage and frequency, compatible with precision machinery and surge loads.



System Energy-Saving Design

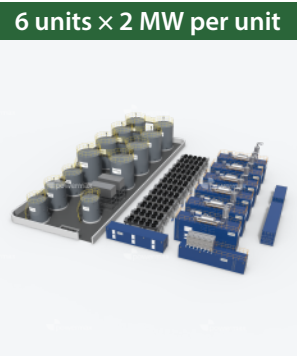
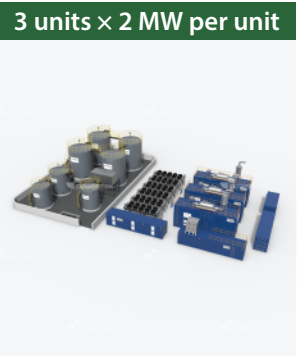
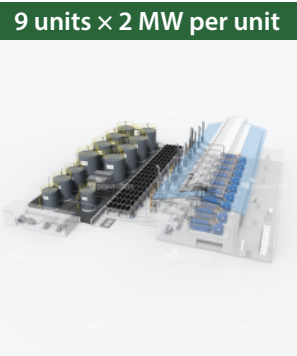
Optimized fuel pretreatment and auxiliary unit configuration, low station auxiliary power consumption, superior power generation efficiency.



Waste Heat Recovery

Tiered recovery of high and low-temperature waste heat for combined heat, power and cooling (CHPC), cutting operational energy costs.

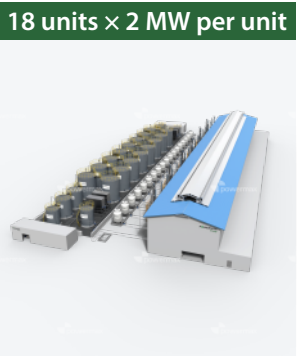
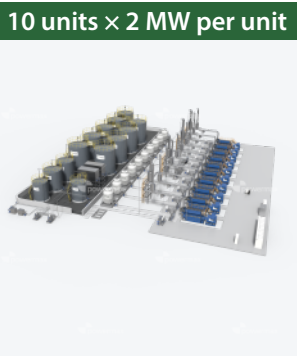
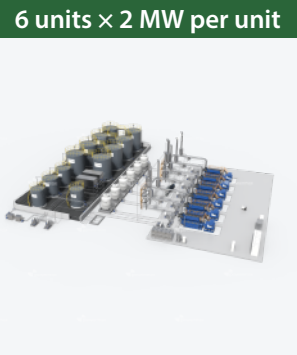
Radiator-Type HFO Power Plant Solutions



Radiator-Type HFO Power Plant Solutions:

Closed-loop coolant with radiator-fan heat rejection. No external cooling water required. Compact for remote desert and off-grid mining applications.

Heat-Exchanger-Type HFO Power Plant Solutions



Heat-Exchanger-Type HFO Power Plant:

Heat-exchanger cooling with external water supply. Delivers consistent cooling for long-hour heavy-load mine, industrial and island operations.

· Power station capacity can be customized flexibly according to customers' targeted power output.

Modular Containerized Power System

Featuring fully modular prefabricated double-layer container design, the system adopts 2MW standard independent power unit, supporting **2–50MW** expansion and multi-unit parallel operation. Highly integrated, transportable and fast to deploy, it meets temporary, permanent and backup power demands.

Core Advantages



Scenario-oriented customized non-standard containerized units



Modular integrated design adaptable to diverse application scenarios

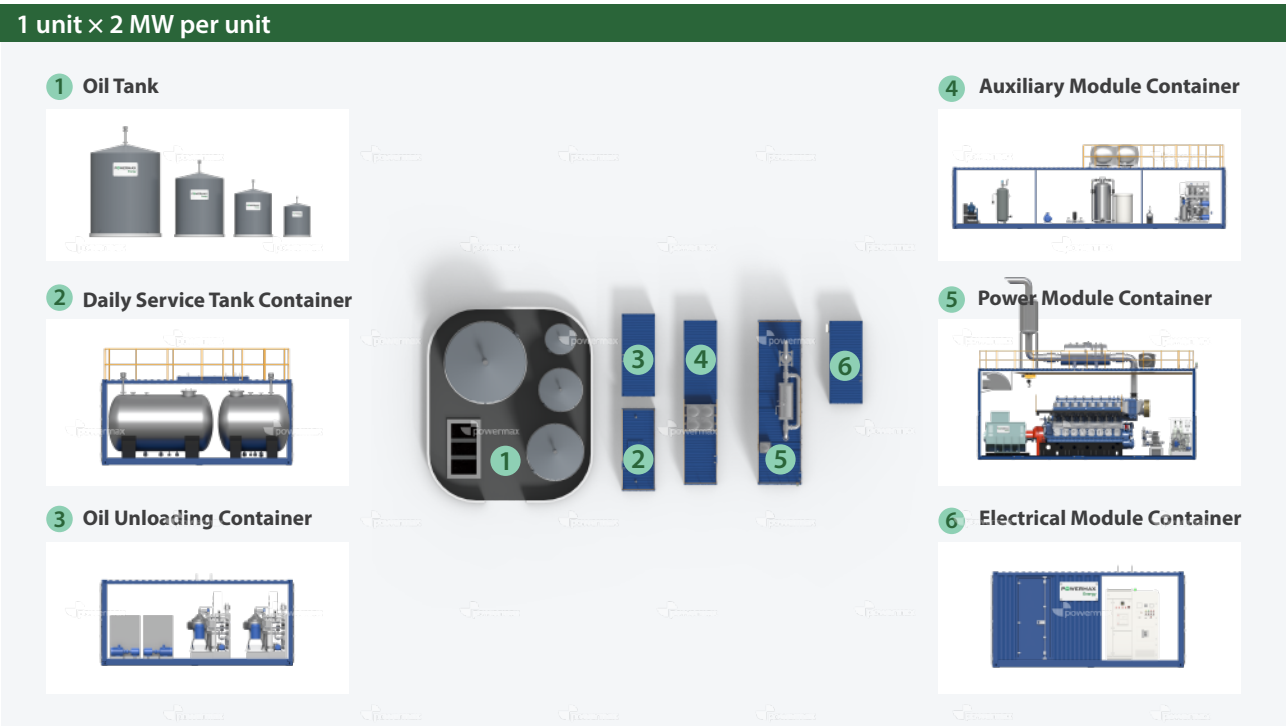


Efficient Integration & Rapid Deployment

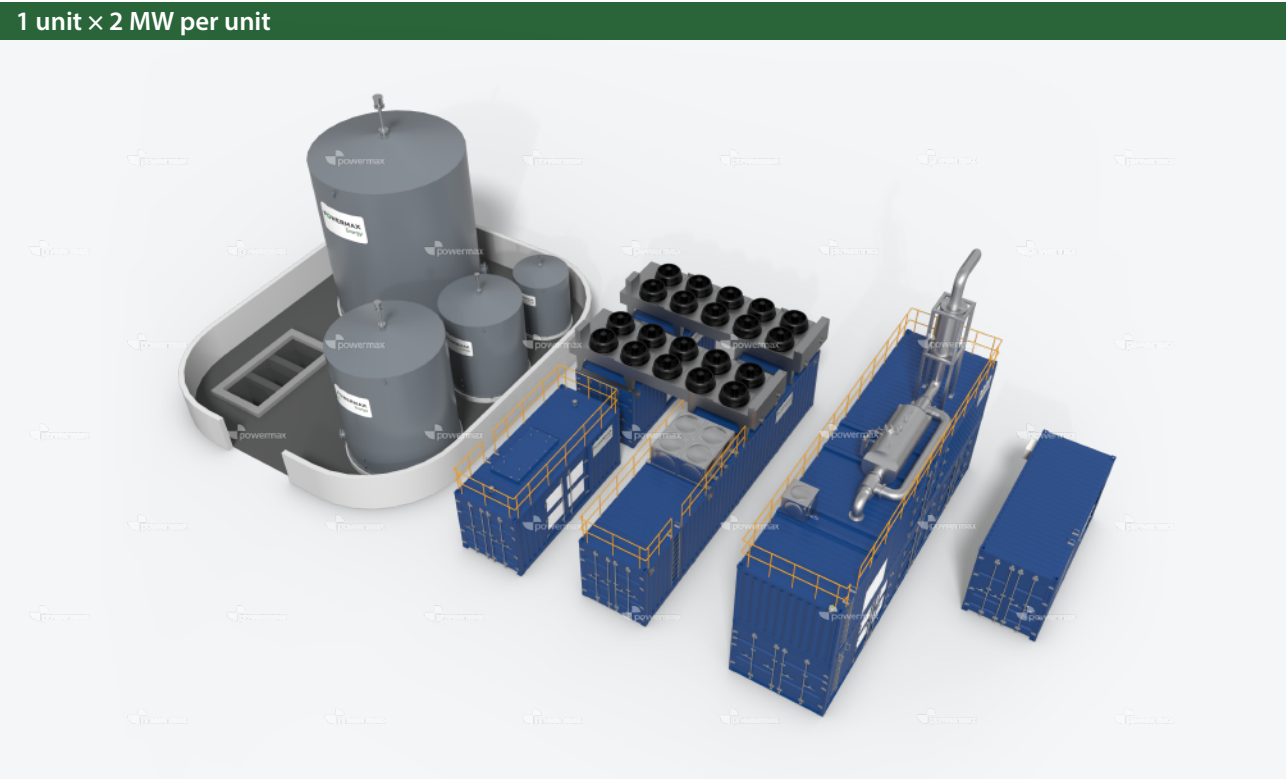


Medium-speed engines run stably with outstanding load impact resistance

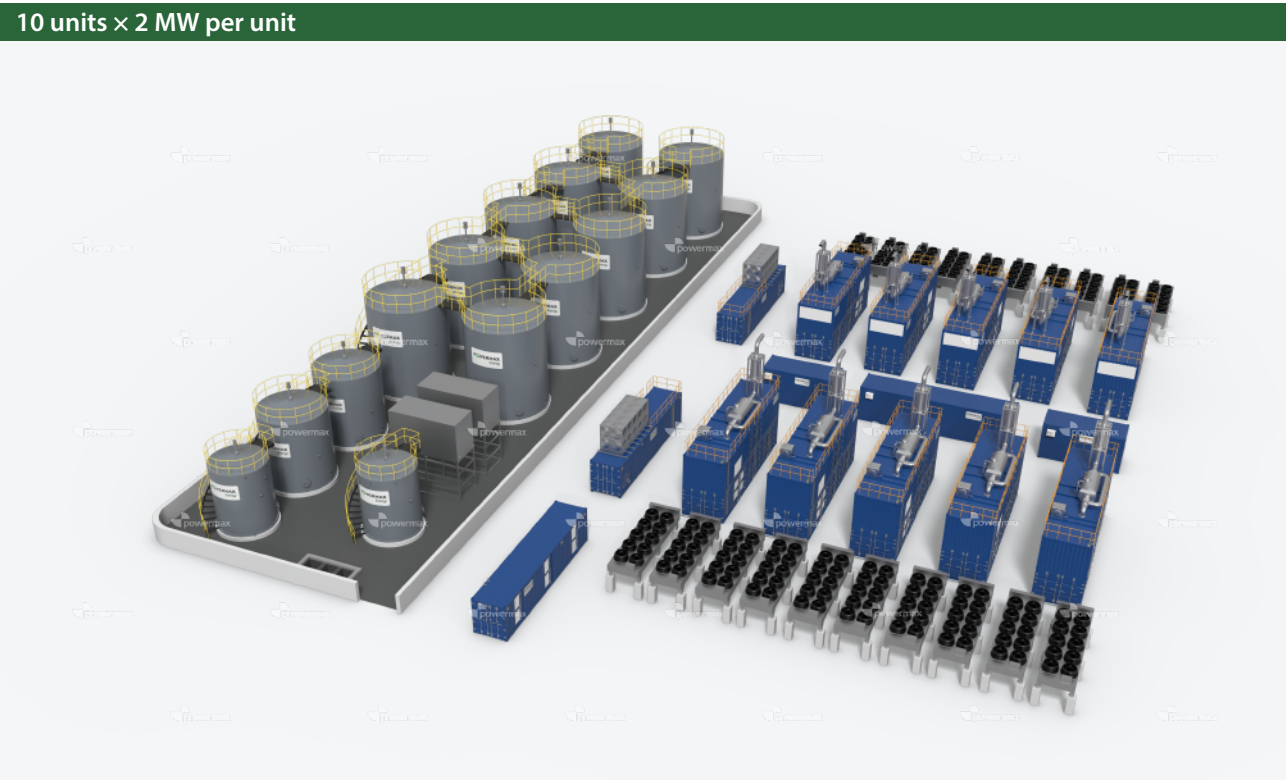
Containerized Generator Set Functional Area Diagram



2MW Containerized HFO Generator Set



20MW Modular Containerized Power Plant



Factory-built Power System

Core Advantages



Fully Prefabricated



Rapid Deployment

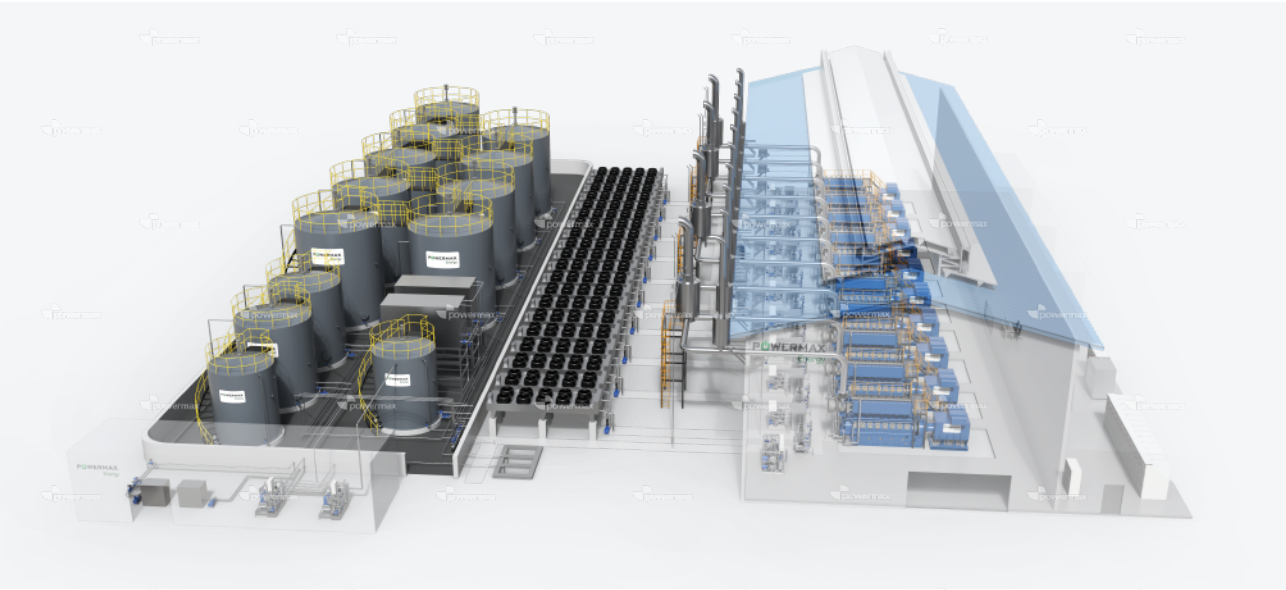
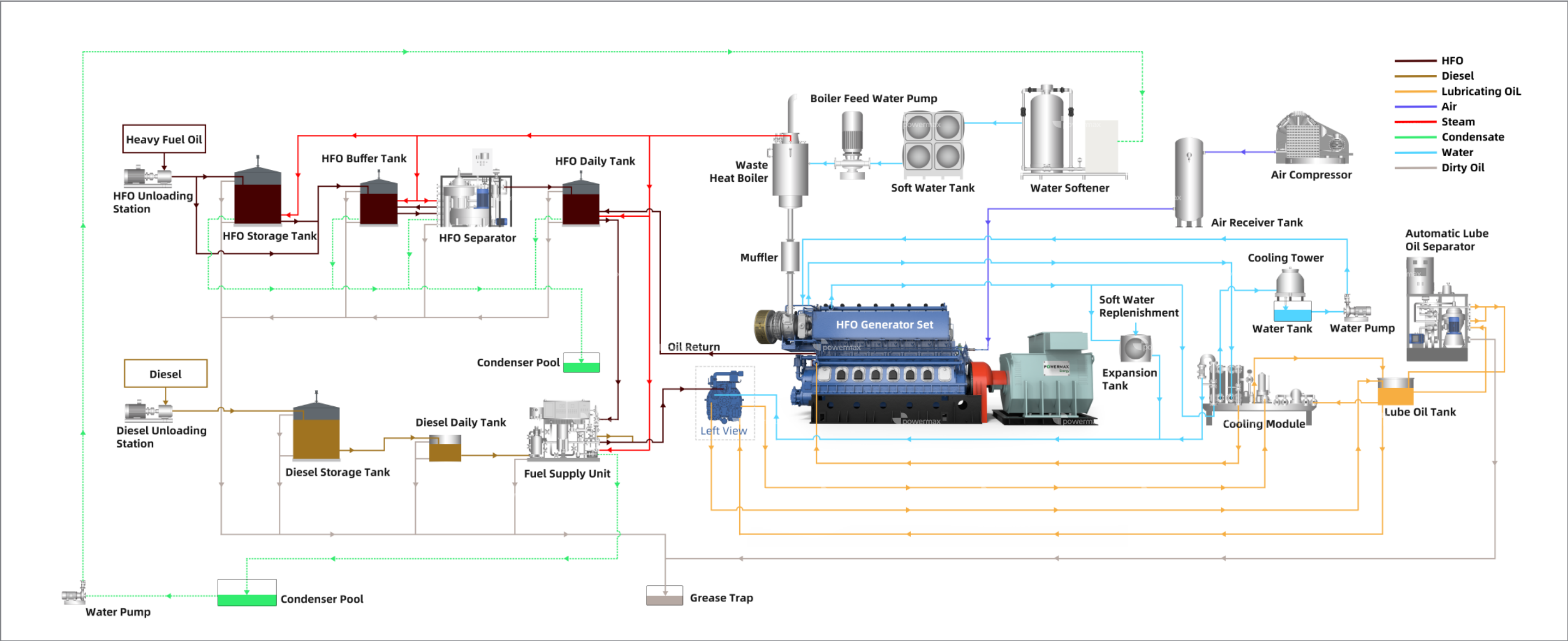


Agile Delivery



Controllable Cost

General Layout Flowchart



Overall Power Station Layout Presentation

1

Engine Configuration

- Engine Brands:** Powermax 300 Series, MAN, MTU, Cummins
- Power Range:** 1 MW – 4 MW
- Cylinder Configuration:** L4 / L6 / L8 / V12 / V16 cylinders
- Engine Speed:** 500 / 600 / 720 / 1000 / 1500 / 1800 rpm
- Aspiration:** turbocharged, air cooling / water cooling

2

Power Generation System

- Alternator Brands:** Siemens, Stamford, Leroy-Somer, and others
- Voltage Ratings:** 0.4 kV / 6.3 kV / 10.5 kV / 13.8 kV, etc.
- Frequency:** 50 Hz / 60 Hz
- Protection Rating:** IP23, IP44
- Output Switchgear:** low-voltage switchgear (standard), medium-/high-voltage switchgear (optional)

3

Control System

- Standard Control Panel:** DEIF, ComAp, Siemens
- Advanced Control System:** integrated SCADA system, distributed control architecture, online AI diagnostics
- Remote Monitoring & Communication:** 5G, GPS, and Beidou(BDS) Satellite Network



4

Fuel Supply System

- Fuel Storage System:** storage tank, buffer tank, daily fuel tank, fuel heating pipe
- Fuel Treatment System:** automated HFO separation and adaptive viscosity control(1600 l/h, 2500 l/h, 8000 l/h optional)
- Fuel Delivery System:** filter, supply pump, flow meter, oil mixing drum; automatic switch between diesel and HFO (900 l/h, 1800 l/h optional)

5

Cooling System

- Cooling Towers:** open-circuit cooling tower or closed-circuit cooling tower
- Radiators & Heat Exchangers:** horizontal radiator, vertical radiator, or plate heat exchanger
- Hybrid Cooling Solutions:** forced-air cooling, liquid cooling, or chiller system
- Maximum Ambient Temperature:** 40°C or 50°C

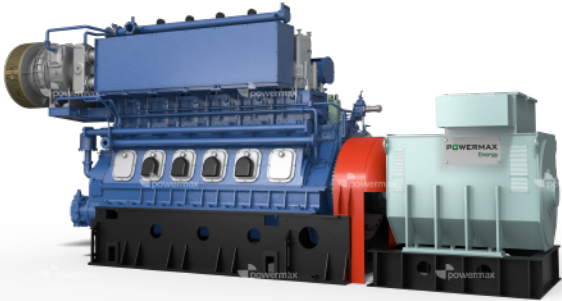
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Emission Control System

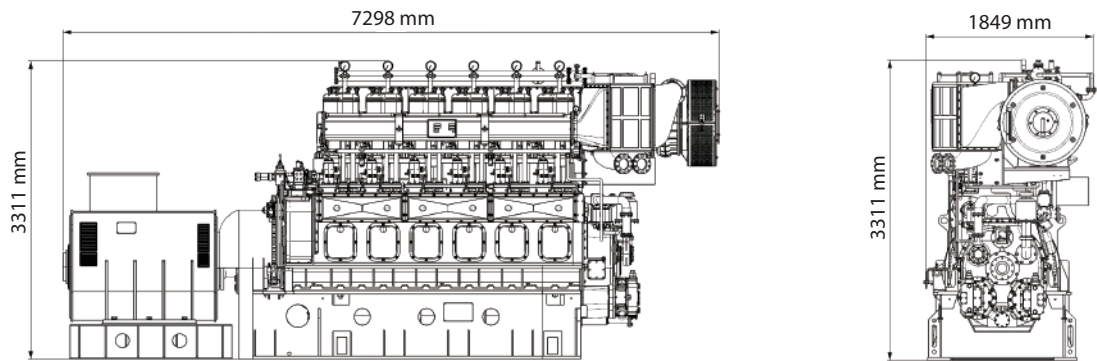
- Exhaust Silencing:** residential-grade or industrial-grade silencers
- Emission Control Devices:** DOC + DPF + SCR
- Emission Compliance:** configurable to meet Euro III, Euro V, and other applicable emission standards

HFO Generator Set - 300 Series

POWERMAX G6300



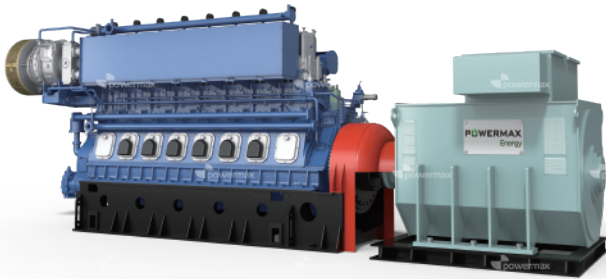
Powermax G6300 inline 6-cylinder HFO genset delivers 1000–1250 kW_e at 500/600 rpm. Featuring a 300 × 380 mm bore-stroke turbocharged design, it supports heavy oil combustion to reduce operating costs. Equipped with Siemens alternators, it offers easy maintenance, full automation and stable continuous power for small and medium off-grid power stations.



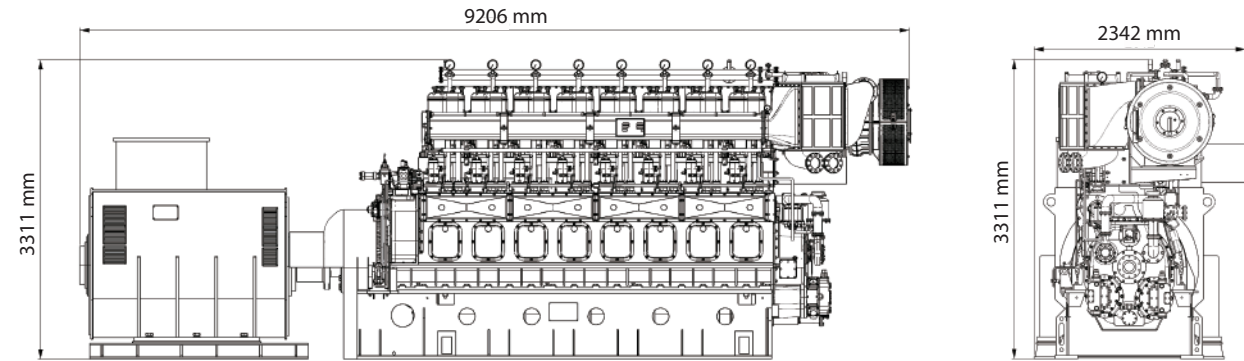
ITEM	TECHNICAL PARAMETER	
HFO Genset Type	1000 GF	1250 GF
Rated Engine Power	1100 kW _m	1375 kW _m
Rated Genset Power	1000 kW _e	1250 kW _e
Engine Model	TNJD G6300	
Cylinder Arrangement	L6	
Displacement	162 L	
Bore × Stroke	300 × 380 mm	
Compression Ratio	13:1	
Air Intake System	Turbocharged and intercooled	
Cooling System	Radiator or heat exchanger with cooling tower (Optional)	
Governor Type	Hydraulic mechanical / electronic (Optional)	
HFO Fuel Consumption	200 g / kWh ± 3%	
Lub Oil Consumption	≤ 1.0 g / kWh ± 3%	
Start-up Mode	Compressed air	
Exhaust Temperature	≤ 580 °C	
Max Back Pressure	≤ 2.5 kPa	
Frequency	50 Hz / 60 Hz	
Rated Speed	500 rpm / 514 rpm	600 rpm
Rated Voltage (V)	400 / 440 / 6300 / 6600 / 10500 / 13800 V	
Phase and Connection	3 Phase 4 Wires / Y Type connection	
Power Factor	0.8 lagging	
Mode of Excitation	Brushless	
Alternator	Siemens / Leroy-Somer (Optional)	
Overall Dimension (mm)	7298 × 1849 × 3311	7398 × 1849 × 3311
Net Weight (kg)	32500	33500

* For reference purposes only

POWERMAX G8300



Powermax G8300 inline 8-cylinder heavy oil genset covers 1600–2000 kW_e, adopting low-speed long-stroke turbocharged architecture with 215 L displacement. It achieves ultra-low HFO and lube oil consumption, with optional hydraulic mechanical or electronic governors, and open/closed cooling systems. Matched with reliable Siemens alternators, it ensures long-term steady power supply for medium industrial facilities and remote island power plants.

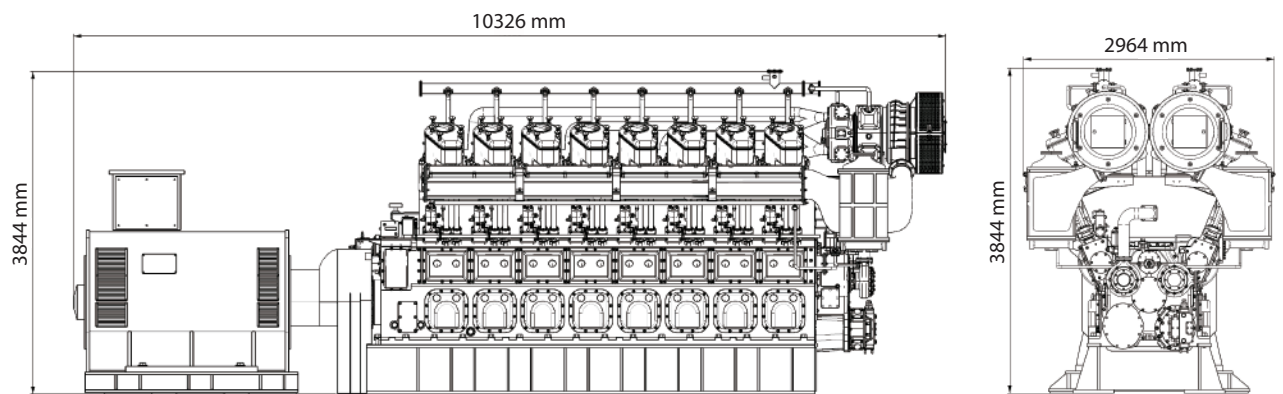
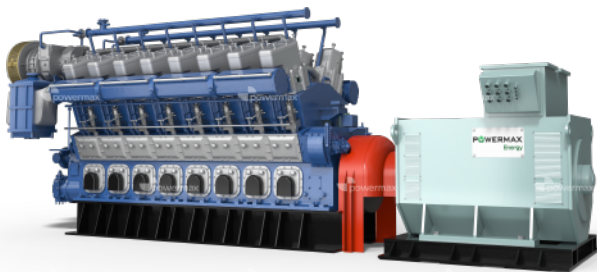


ITEM	TECHNICAL PARAMETER	
HFO Genset Type	1600 GF	2000 GF
Rated Engine Power	1760 kW _m	2200 kW _m
Rated Genset Power	1600 kW _e	2000 kW _e
Engine Model	TNJD G8300	
Cylinder Arrangement	L8	
Displacement	215 L	
Bore × Stroke	300 × 380 mm	
Compression Ratio	13:1	
Air Intake System	Turbocharged and intercooled	
Cooling System	Radiator or heat exchanger with cooling tower (Optional)	
Governor Type	Hydraulic mechanical / electronic (Optional)	
HFO Fuel Consumption	200 g / kWh ± 3%	
Lub Oil Consumption	≤ 1.0 g / kWh ± 3%	
Start-up Mode	Compressed air	
Exhaust Temperature	≤ 580 °C	
Max Back Pressure	≤ 2.5 kPa	
Frequency	50 Hz / 60 Hz	
Rated Speed	500 rpm / 514 rpm	600 rpm
Rated Voltage (V)	400 / 440 / 6300 / 6600 / 10500 / 13800 V	
Phase and Connection	3 phase 4 wires / Y type connection	
Power Factor	0.8 lagging	
Mode of Excitation	Brushless	
Alternator	Siemens / Leroy-Somer (Optional)	
Overall Dimension (mm)	9206 × 2342 × 3311	9306 × 2342 × 3311
Net Weight (kg)	42000	44000

* For reference purposes only

POWERMAX 16VG300

Powermax 16VG300 V16 large-displacement HFO genset reaches a maximum output of 4000 kWe with 250 kWe single-cylinder output. It delivers outstanding fuel economy, and high-efficiency Siemens alternators ensure stable power output. It supports full customization for desert, high-altitude and island conditions, making it ideal for large-scale continuously-operated off-grid energy stations.



* For reference purposes only

ITEM	TECHNICAL PARAMETER					
HFO Genset Type	2500GF	3000GF	3150 GF	3350 GF	3600 GF	4000 GF
Rated Engine Power	2750kWm	3300kWm	3465 kWm	3685 kWm	3960 kWm	4400 kWm
Rated Genset Power	2500kWe	3000kWe	3150 kWe	3350 kWe	3600 kWe	4000 kWe
Engine Model	TNJD 16VG300					
Cylinder Arrangement	V16					
Displacement	430 L					
Bore × Stroke	300×380 mm					
Compression Ratio	13:1					
Air Intake System	Turbocharged and intercooled					
Cooling System	Radiator or heat exchanger with cooling tower (Optional)					
Governor Type	Hydraulic mechanical / electronic (Optional)					
HFO Fuel Consumption	200 g / kWh ± 3%					
Lub Oil Consumption	≤ 1.0 g / kWh ± 3%					
Start-up Mode	Compressed air					
Exhaust Temperature	≤ 580 °C					
Max Back Pressure	≤ 2.5 kPa					
Frequency	50 Hz / 60 Hz					
Rated Speed	500 rpm / 514 rpm				600 rpm	
Rated Voltage (V)	400 / 440 / 6300 / 6600 / 10500 / 13800 V					
Phase and Connection	3 phase 4 wires / Y type connection					
Power Factor	0.8 lagging					
Mode of Excitation	Brushless					
Alternator	Siemens / Leroy-Somer (Optional)					
Overall Dimension (mm)	10326 × 2964 × 3844		10600 × 2964 × 3844		10750 × 2964 × 3844	
Net Weight (kg)	76000		78000		82000	84000

Application Scenarios of HFO Power Station

Mining & Industrial Sites

On-site power supply for large mining areas, including gold, iron and coal mines



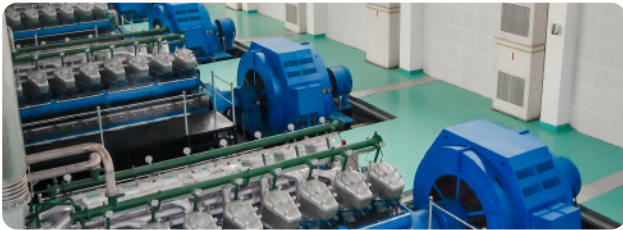
Islands & Offshore Facilities

Power supply for island development, offshore platforms and marine engineering projects



Overseas Projects

Power infrastructure for off-grid or weak-grid regions across Africa, Southeast Asia and the Middle East



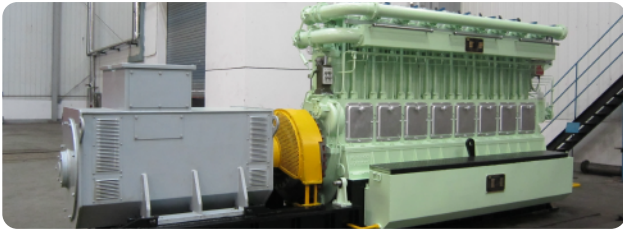
Industrial Parks

Self-operated power stations and main standby power for large manufacturing facilities



Emergency Power Supply

Continuous uninterrupted power supply for regions with unstable grid conditions



Remote Infrastructure

Temporary and long-term power supply for highway, railway and water conservancy projects

