

POWERMAX MODULAR POWER PLANT

1–50 MW DIESEL / HFO / DUAL-FUEL Prime Power Solutions



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Fuel-Flexible · Seamless Switching · Lower OPEX · Greener Power

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A STRONGER TOMORROW

OIL & GAS
POWER GENERATION
CLEANER ENERGY
BRIGHTER FUTURES

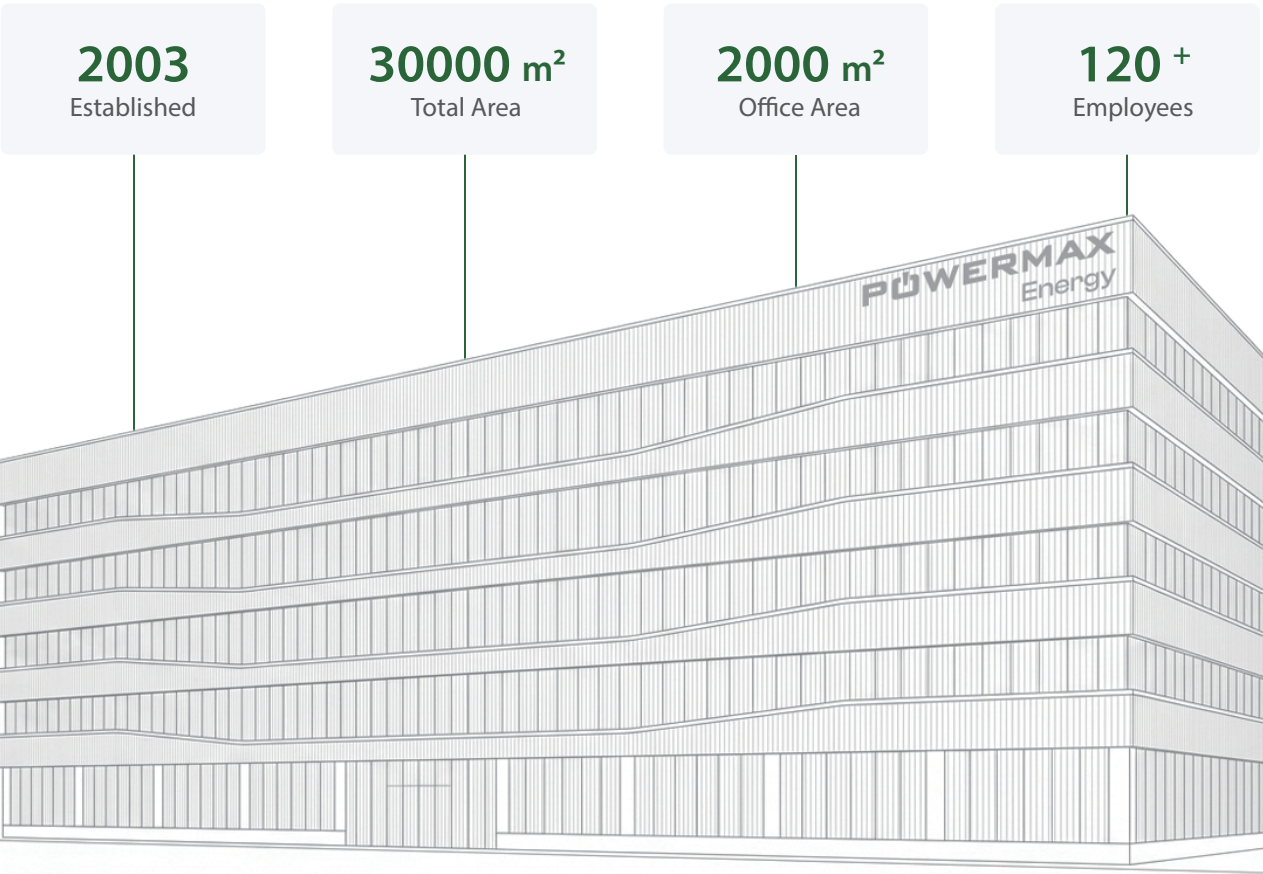
About Powermax Energy

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 comprehensive energy solutions and biomass-to-energy conversion. Leveraging 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 Diesel / HFO / Dual-fuel Power Station Solution

We deliver one-stop turnkey solutions for diesel / HFO / dual-fuel power stations, supporting full-scale construction of standardized high-power multi-fuel power plants. Our in-house developed dual-fuel engines support seamless operation in three modes: 100% heavy fuel oil, 100% diesel, natural gas-liquid fuel mixed dual-fuel mode. 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.

Core Value



Optimized Fuel-Cost Performance

Leverage locally-available low-cost natural gas or associated gas to cut kWh fuel expenditure.



Guaranteed Energy Security

Multi-fuel backup design; seamless auto switch to liquid fuel upon gas supply loss with no load dump, preventing power outages.



Improved Environmental Performance

Increasing the natural-gas substitution rate can reduce particulate matter, SOx and carbon intensity compared with 100% HFO operation.



Full Rated Output Capability

Rated output can be maintained under qualified fuel conditions and approved operating parameters.



Wide Gas-source Adaptability & Gas-circuit Safety

Supports PNG, LNG, CNG and oil-field associated gas, equipped with comprehensive gas-circuit safety interlock protections.



Cogeneration-ready Under Dual-fuel Mode

Waste-heat recovery for CCHP – Combined Cooling, Heat and Power during dual-fuel operation.

Dual-Fuel Operating Modes



100% HFO Mode

100% heavy-fuel-oil operation with natural-gas supply completely disconnected. Optimized for continuous heavy-duty prime-power operation at remote sites lacking gas sources, it retains full performance of the genset under full-load running conditions.



100% Diesel Mode

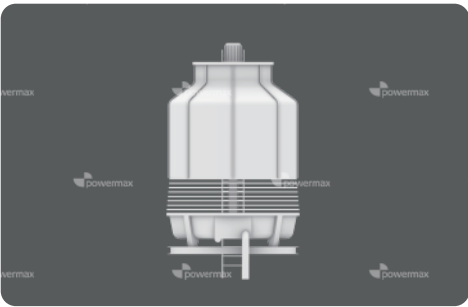
Pure-diesel independent operation, mainly applied for unit start-up and shut-down procedures, stable low-load running, as well as emergency backup when gas supply system encounters faults. It guarantees reliable power output during mode transition of the whole power station.



NG-Liquid Dual-Fuel Mixed Mode

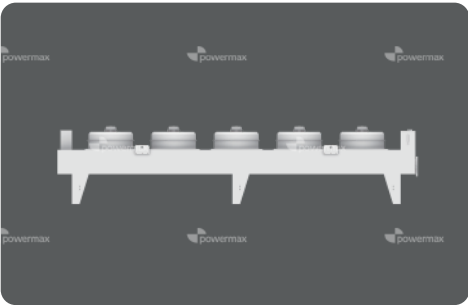
Mixed combustion of natural gas with diesel or HFO. Maximum gas substitution rate up to 86% , subject to engine load, gas composition, methane number, ambient conditions and liquid-fuel quality.

Cooling System Options for Dual-Fuel Plants



Cooling-Tower Dual-Fuel Power Plant

It utilizes circulating-water cooling with cooling towers for robust heat rejection of large dual-fuel prime-power units. Suited for water-abundant factory-built plants and large-capacity mine sites, it supports continuous operation across 100% HFO, 100% diesel and gas-liquid mixed dual-fuel modes.



Radiator-Type Dual-Fuel Power Plant

Closed-loop coolant circuit adopts radiator-fan heat rejection, requiring no external cooling water. With compact layout, it is ideal for remote desert, off-grid mining and oil-gas field projects, and compatible with on-site LNG / CNG gas supply systems.

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

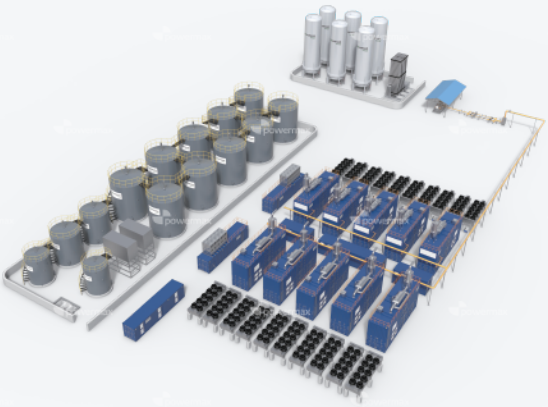
Modular Containerized Power Plant - G8300 Series

1 unit × 2 MW per unit



- Overall Dimension (L × W) : 32200 × 49700 mm
- Total Project Land Area: 1600 m²

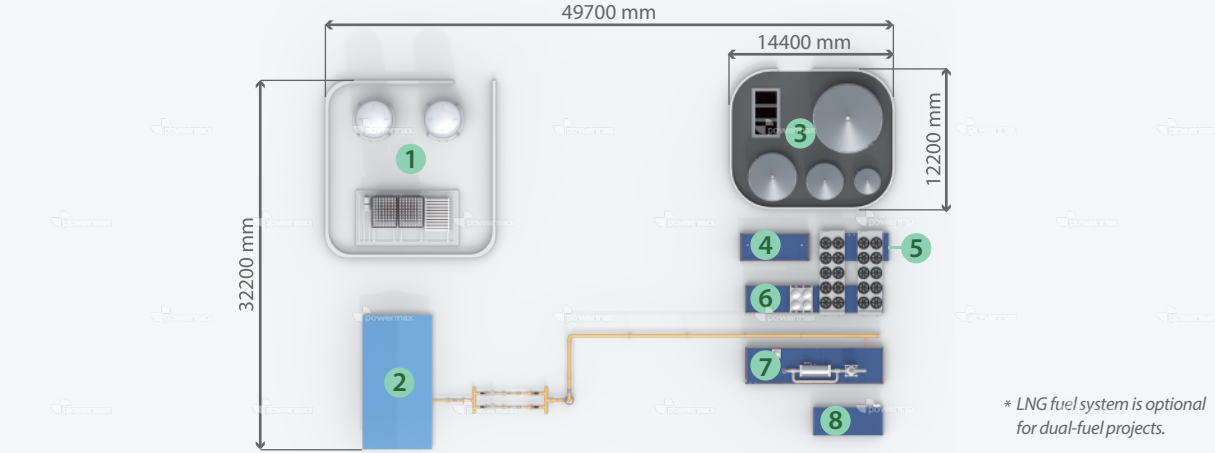
10 units × 2 MW per unit



- Overall Dimension (L × W) : 116700 × 65400 mm
- Total Project Land Area: 7632 m²

Modular Containerized Power Plant Functional Area Diagram

1 unit × 2 MW per unit



49700 mm, 32200 mm, 14400 mm, 12200 mm

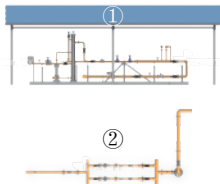
* LNG fuel system is optional for dual-fuel projects.

1 LNG Fuel Storage & Vaporization Area



① LNG Storage Tank (Total Volume: 100 m³)
② Main Air-heated Vaporizer

2 LNG Pressure Regulating Station



① Primary Gas Pressure Regulating Station
② Secondary Gas Pressure Reducing Skid

3 Tank Area



① HFO Storage Tank
② Diesel Storage Tank
③ HFO Buffer Tank
④ Residual Oil Tank

200m³, 60m³, 30m³, 10m³

4 Auxiliary Equipment Module



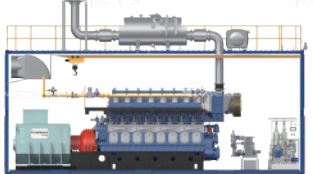
Overall Dimension(L × W × H): 40' GP ISO Container

5 Daily Oil Tank Module



Overall Dimension(L × W × H): 20' GP ISO Container

6 Power Module



Overall Dimension(L × W × H): Non-standard Container 11600 × 3210 × 5044 mm

7 Fuel Handling Module



Overall Dimension(L × W × H): 20' GP ISO Container

8 Electrical Module



Overall Dimension(L × W × H): 20' HQ ISO Container

Factory-built Power System

Factory-prefabricated dual-fuel power system, with both liquid-fuel circuit and gas-supply circuit fully assembled and factory-tested, shortens on-site installation and commissioning cycles and delivers predictable project costs.

Core Advantages



Fully Prefabricated



Rapid Deployment



Agile Delivery



Controllable Cost

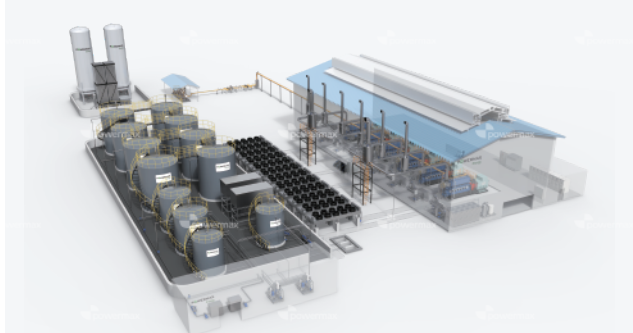
Factory-built Power Plant - G8300 Series

3 units × 2 MW per unit



- Overall Dimension (L × W) : 84400 × 64800 mm
- Total Project Land Area: 5469 m²

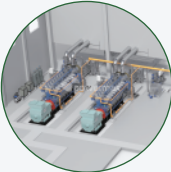
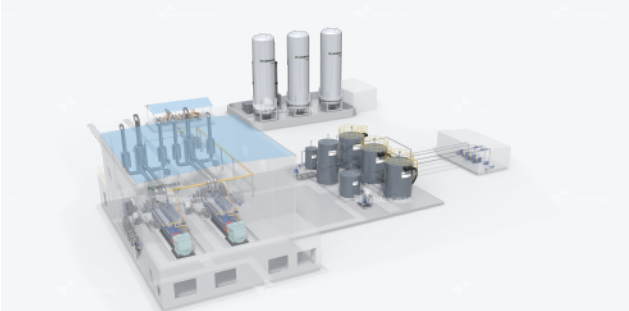
6 units × 2 MW per unit



- Overall Dimension (L × W) : 100300 × 65100 mm
- Total Project Land Area: 6530 m²

Factory-built Power Plant - G16V300 Series

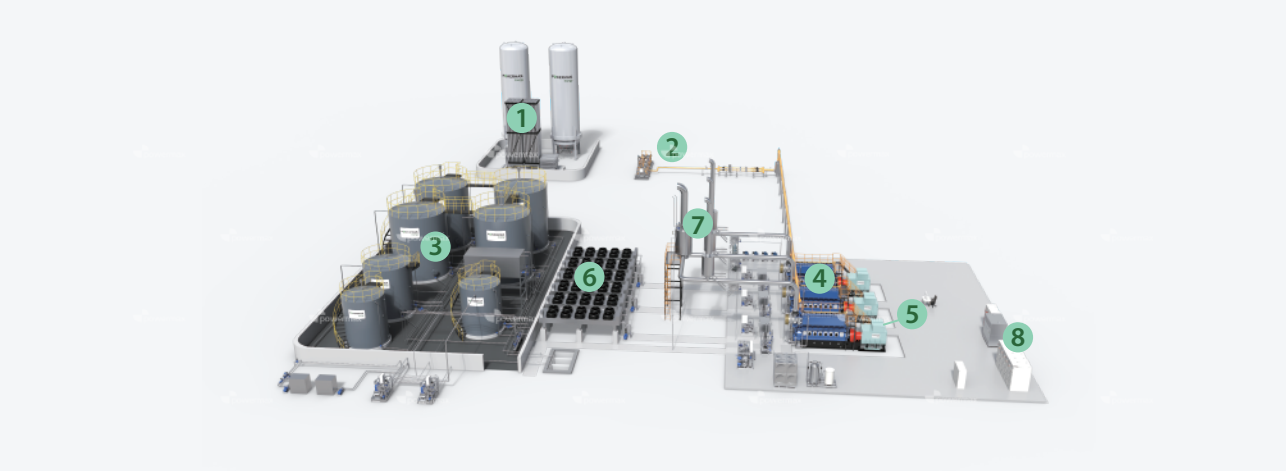
2 units × 4 MW per unit



- Overall Dimension (L × W) : 69000 × 63200 mm
- Total Project Land Area: 4361 m²

Factory-built Power Plant Functional Area Diagram

3 units × 2 MW per unit



1 LNG Fuel Storage & Vaporization Area

LNG Storage Tank: Stores cryogenic LNG with vacuum insulation, Total Volume: 100 m³.

Main Air-heated Vaporizer: Converts LNG to gas using ambient air heat.

2 LNG Pressure Regulating Station

Primary Gas Pressure Regulating Station: First-stage pressure reduction & gas filtration.

Secondary Gas Pressure Reducing Skid: Final pressure stabilization for genset supply.

3 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)

4 Engine Configuration

Engine Brands: Powermax 300 Series, other dual-fuel medium-speed engine options

Power Range: 1.6 MW – 5 MW

Cylinder Configuration: L8 / V16 cylinders

Engine Speed: 500 / 514 / 600 rpm

Aspiration: turbocharged and Intercooled

5 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: LV or MV generator output and switchgear configuration, subject to plant capacity and grid-connection requirements.

6 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

7 Emission Control System

Exhaust Silencing: residential-grade or industrial-grade silencers

Emission Control Devices: SCR, oxidation catalyst, particulate control and SOx control systems

Emission Compliance: subject to fuel quality and local stationary-source emission limits

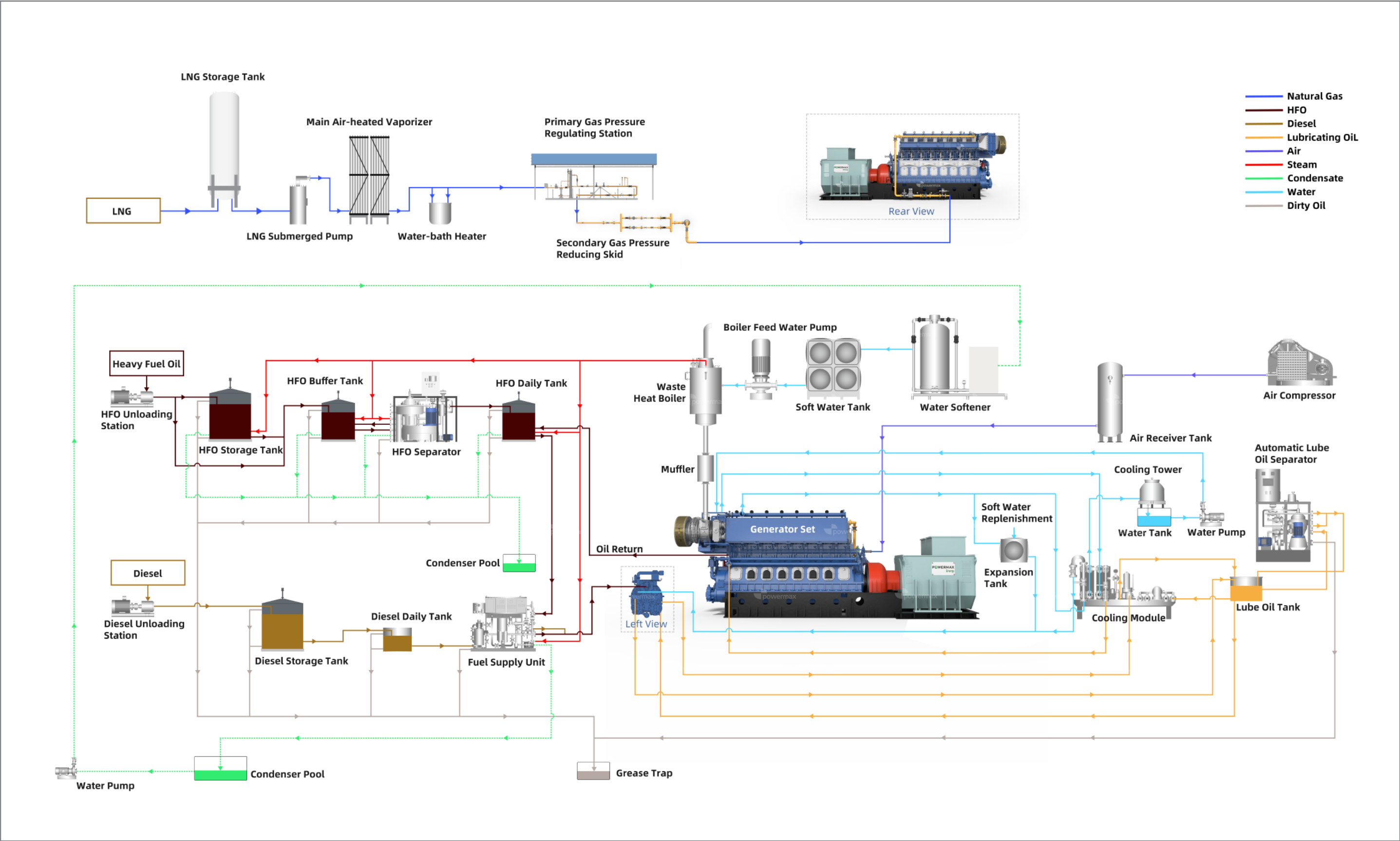
8 Control System

Standard Control Panel: DEIF, ComAp, Siemens

Advanced Control System: integrated SCADA system, distributed control architecture, online AI diagnostics

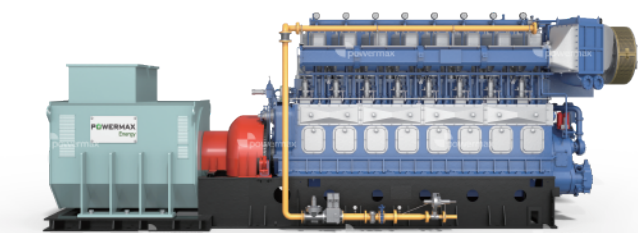
Remote Monitoring & Communication: 5G, GPS, and Beidou(BDS) Satellite Network

General Layout Flowchart

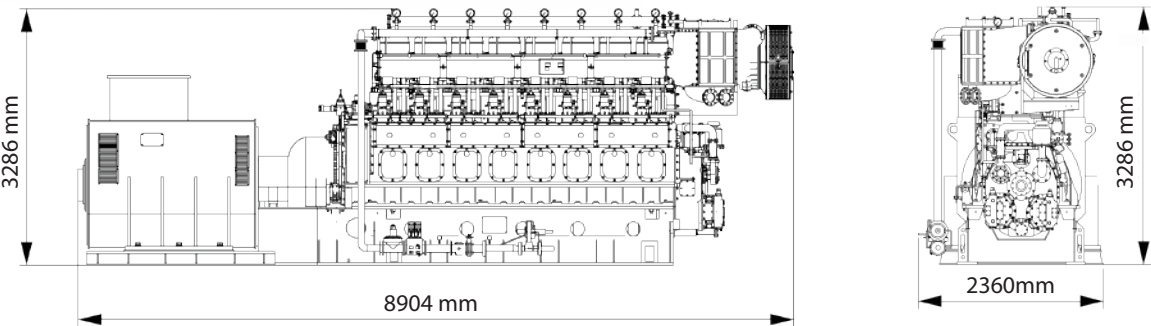


Diesel / HFO / Dual-fuel Generator Set

POWERMAX G8300/G8320



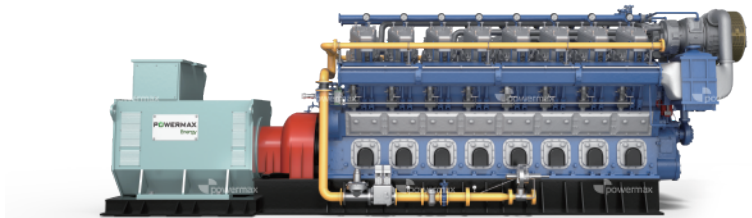
Powermax G8300/G8320 inline 8-cylinder dual-fuel genset delivers 1600-2500 kWe. It runs on natural gas, diesel and HFO, with auto fallback to liquid fuel during gas failure. Optional governors and cooling configurations are available. Paired with Siemens alternators, it provides stable prime power for mines, oil-gas sites and remote islands.



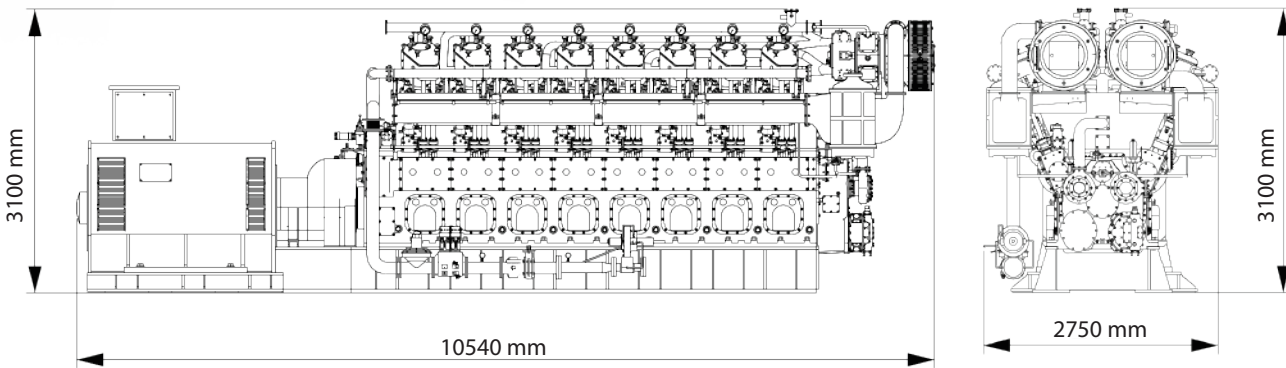
* For reference purposes only

ITEM	TECHNICAL PARAMETER		
Genset Type	1600 GF	2000 GF	2500 GF
Rated Engine Power	1760 kWm	2200 kWm	2750 kWm
Rated Genset Power	1600 kWe	2000 kWe	2500 kWe
Engine Model	TNJD G8300		TNJD G8320
Cylinder Arrangement	L8		
Displacement	215 L		244 L
Bore × Stroke	300 × 380 mm		320 × 380 mm
Supported Fuel	100% HFO / 100% Diesel / NG + HFO / NG + Diesel		
Max Gas Substitution Rate	Up to 86% (depends on load & gas quality)		
Gas Supply Requirement	Customized pressure for PNG / LNG-derived gas		
Combustion method	Mixed compression-ignition		
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	250 g / kWh ± 3%		
Lub Oil Consumption	≤ 1.0 g / kWh		
Start-up Mode	Compressed air		
Exhaust Temperature	≤ 450 °C		
Max Back Pressure	≤ 3 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)	8904 × 2360 × 3286	9100 × 2360 × 3286	9200 × 2360 × 3286
Net Weight (kg)	40000	45000	46000

POWERMAX G16V300/G16V320



Powermax G16V300/G16V320 V-16 large-bore dual-fuel genset outputs 2500-5000 kWe. Compatible with natural gas, diesel and HFO, it supports high-rate gas substitution while keeping low lube-oil consumption and auto liquid-fuel switch-over on gas fault. Multiple governor and cooling options are offered. Equipped with high-efficiency Siemens alternators, it supplies robust prime power for large mines, oil-gas sites and off-grid industrial parks.



* For reference purposes only

ITEM	TECHNICAL PARAMETER						
Genset Type	2500GF	3000GF	3150 GF	3350 GF	3600 GF	4000 GF	5000 GF
Rated Engine Power	2750kWm	3300kWm	3465 kWm	3685 kWm	3960 kWm	4400 kWm	5500 kWm
Rated Genset Power	2500kWe	3000kWe	3150 kWe	3350 kWe	3600 kWe	4000 kWe	5000 kWe
Engine Model	TNJD G16V300						TNJD G16V320
Cylinder Arrangement	V16						
Displacement	430 L						488 L
Bore × Stroke	300 × 380 mm						320 × 380 mm
Supported Fuel	100% HFO / 100% Diesel / NG + HFO / NG + Diesel						
Max Gas Substitution Rate	Up to 86% (depends on load & gas quality)						
Gas Supply Requirement	Customized pressure for PNG / LNG-derived gas						
Combustion method	Mixed compression-ignition						
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	250 g / kWh ± 3%						
Lub Oil Consumption	≤ 1.0 g / kWh						
Start-up Mode	Compressed air						
Exhaust Temperature	≤ 450 °C						
Max Back Pressure	≤ 3 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)	10540 × 2750 × 3100						
Net Weight (kg)	60000	61500	63500		65000		67500

Application Scenarios of Diesel / HFO / Dual-Fuel Power Station

Mining & Industrial Sites

Run dual-fuel with site associated gas / PNG to lower HFO use; auto switch to HFO for uninterrupted power if gas fails.



Islands & Offshore Facilities

Supports LNG gasification. Natural gas and HFO act as mutual backups to cut heavy oil logistics cost.



Overseas Projects

Adapt to local fuel diversity. Switch between gas, HFO and diesel to hedge fuel price volatility.



Industrial Parks

Dual-fuel operation via pipeline gas; auto switch to HFO on grid failure to secure plant power.



Emergency Power Supply

Dual backup fuel of natural gas and HFO for dependable emergency power.



Oil & Gas Field

Generate power from wellhead associated gas; reduce routine gas flaring and associated emissions.



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