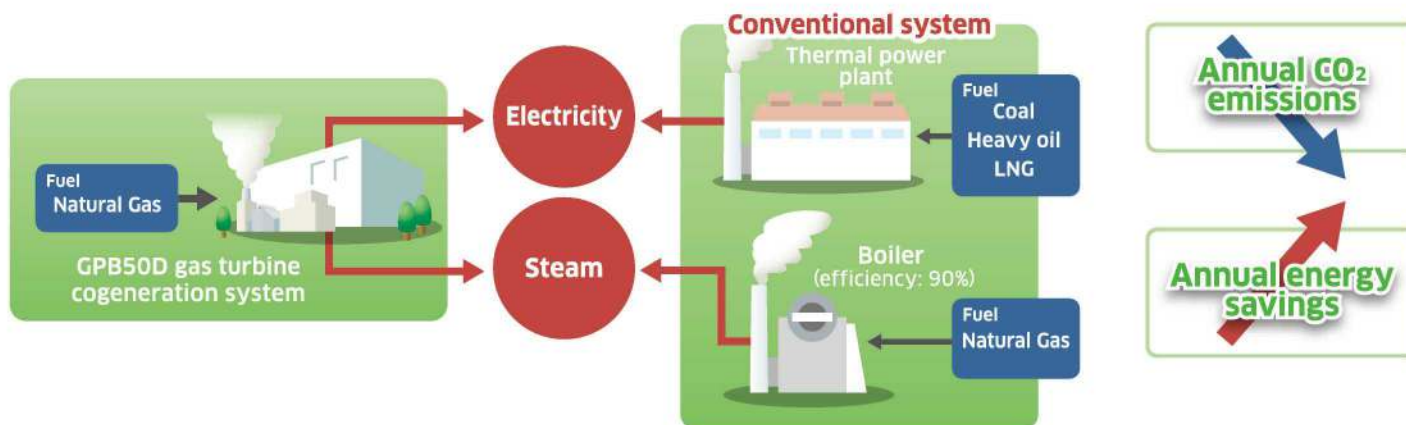


Contribution to the Environment



Maintenance Service Program

Service framework for greater reliability

Connecting the customer with major service locations via a network enables instantaneous confirmation of site-specific information for quicker, more precise operation and maintenance services.



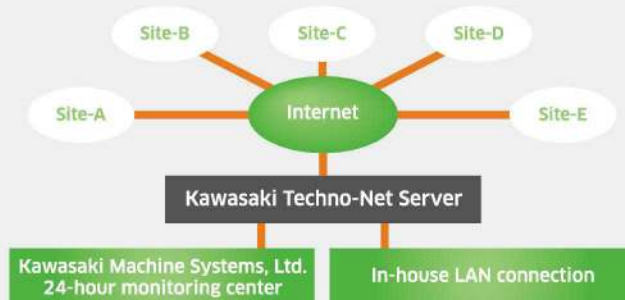
Techno-Net (remote monitoring system)

1. Monitoring of operational conditions

Year-round monitoring of power generation equipment's operational conditions enables a clear, precise understanding of each device's status.

2. Quick response

If a problem occurs, support staff are able to respond quickly based on malfunction/breakdown diagnostic data, resulting in much shorter equipment downtimes.



Maintenance Schedule

Borescope inspections: every year

- Part inspections via borescope and direct viewing.

Major inspections for high-temperature sections: not applicable

- No major onsite inspections. Maintenance of combustion chamber can be performed during borescope inspections.

Overhaul inspections: once every four years

- Gas turbine trade-in

Standard Maintenance Schedule

Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Borescope inspections	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
Overhaul					█															

(Conditions) Initial inspection included in borescope inspections. Based on continuous operation

global.kawasaki.com/en/energy/equipment/gas_turbines/index.html

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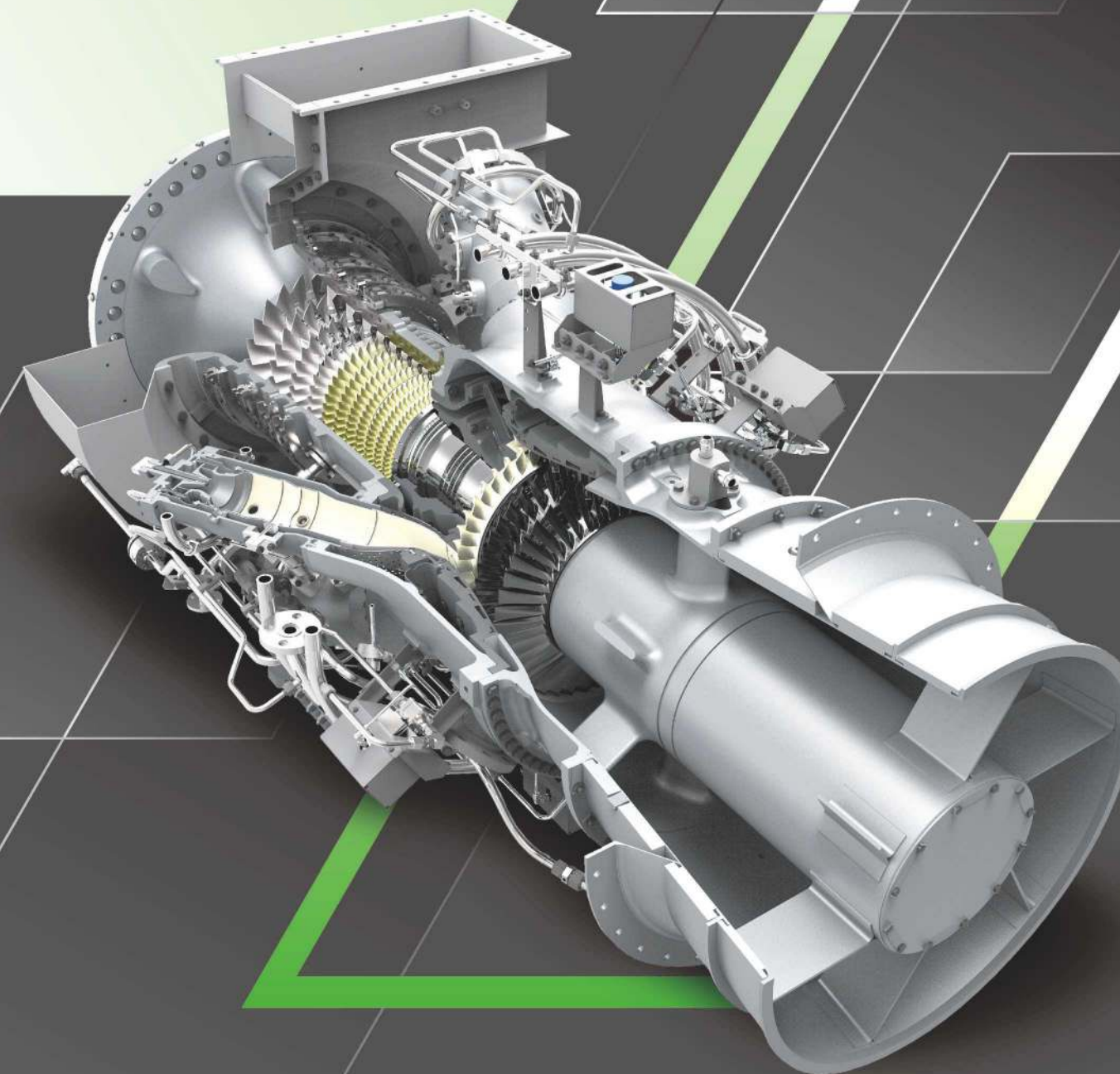
Kawasaki Gas Turbine Asia Sdn Bhd (Shah Alam, Malaysia)

Kawasaki Gas Turbine Asia Sdn Bhd (Jakarta Rep. Office)



GPB50D

Gas Turbine Generator Package



The Standard Solution for Power Generation

GPB50D gas turbine generator package offers high efficiency 5MW power utilizing Kawasaki M5A-01D gas turbine developed with the latest and proven technologies. Its high performance provides the optimal solution for power generation and co-generation. GPB50D's compact package design is also perfect for renewal projects of existing facilities.

GPB50D

Key Features

1 High Performance

Demonstrates a rated generating efficiency of 31.9%—the world's highest in the 5 MW class.

2 Low Emissions

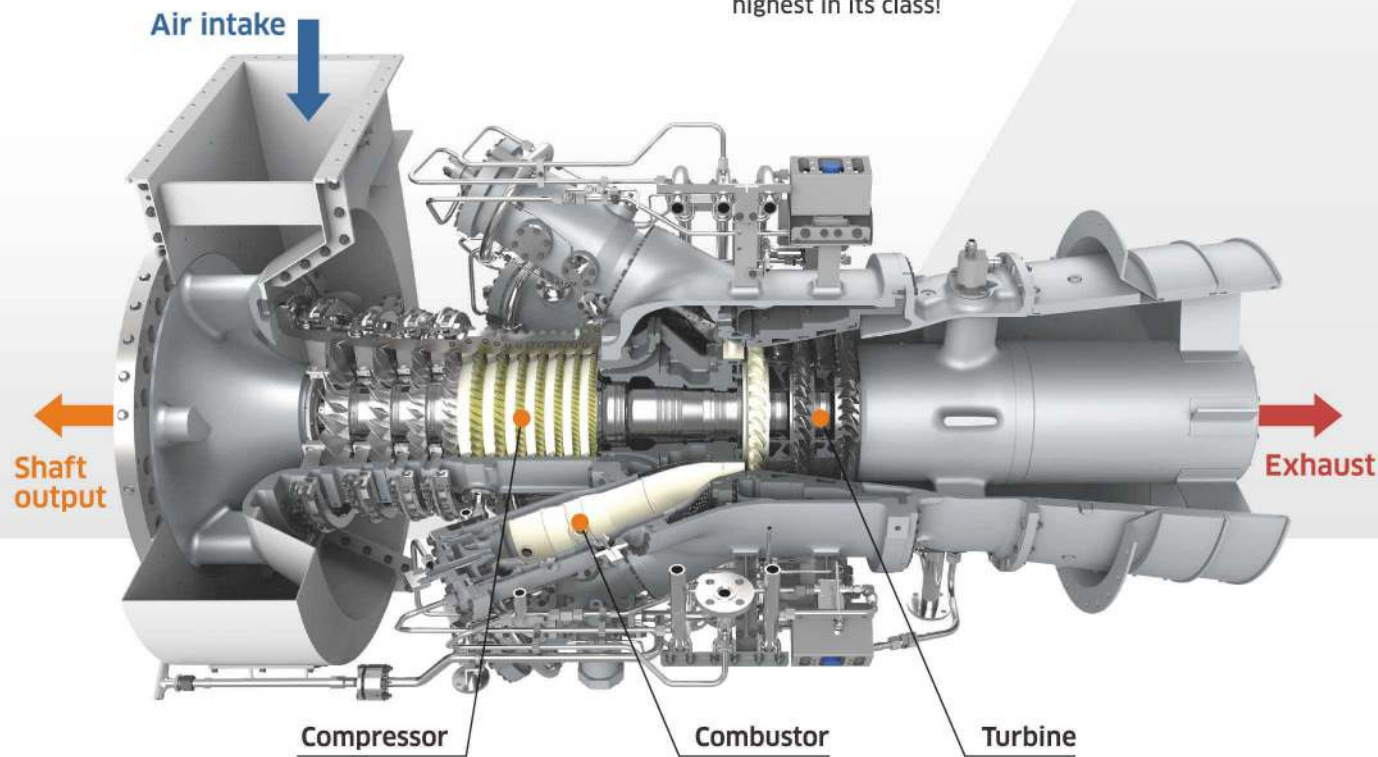
Uses dry low emission (DLE) technology to achieve nitrogen oxide (NOx) emissions of 15 ppm (at 15% O₂), one of the lowest emission rates in its class.

3 High Reliability

Incorporates cutting-edge technologies rooted in Kawasaki's development experience and achievements over the years in the area of small- and medium-size industrial gas turbines.

4 High Economic Performance

Integrates a heat recovery steam generator (HRSG) to achieve a rated total thermal efficiency of 84.5%—the highest in its class!



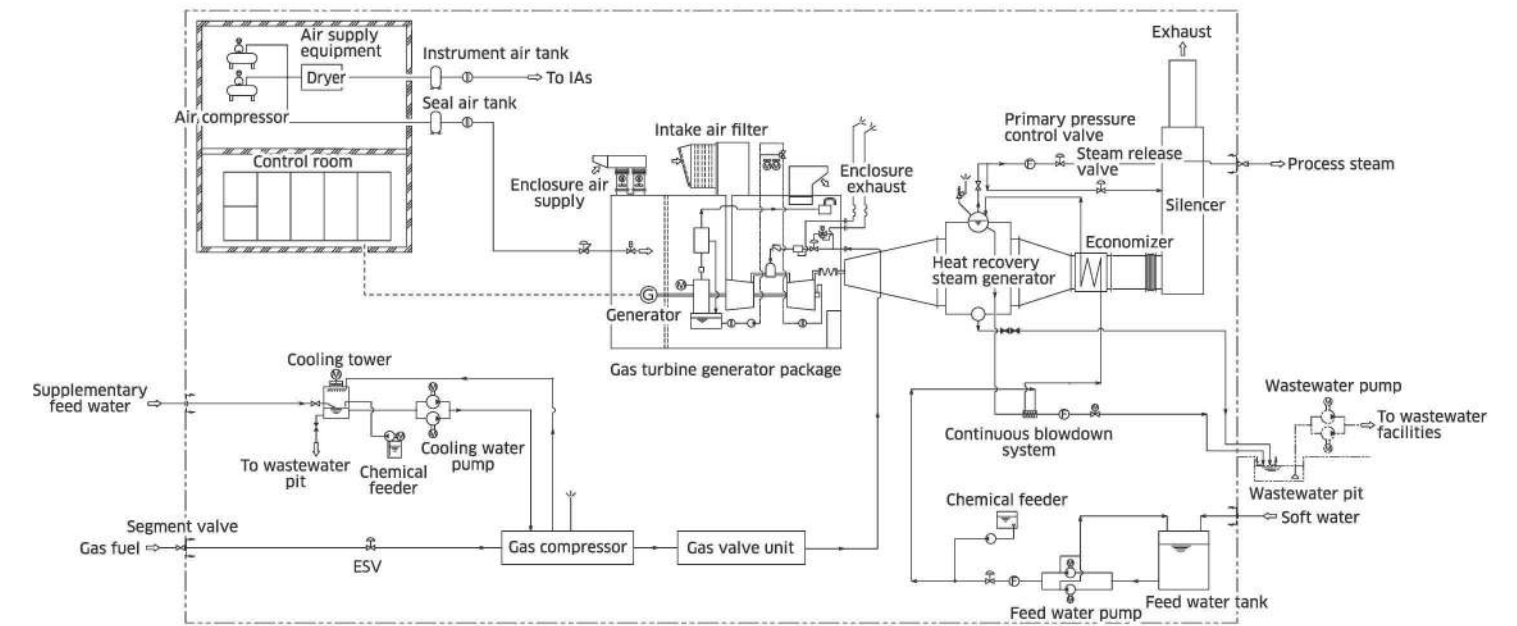
Performance Chart

GPB50D

Inlet air temp. (°C)	Electric output (kW)	Electrical efficiency (%)	Fuel Consumption (kW)	Heat rate (kJ/kWe-hr)	Steam output (kg/h)	Heat recovery rate (%)	Total thermal efficiency (%)
0	4,935	32.7	15,080	11,000	10,720	48.2	80.9
15	4,455	31.9	13,960	11,280	10,440	50.7	82.6
30	3,835	30.1	12,720	11,940	10,200	54.4	84.5

[Nominal Performance]
 Atmospheric pressure: 101.3 Pa (equivalent to 0 m elevation) Inlet air/exhaust gas pressure loss: 0.98 kPa/2.94 kPa
 Fuel: 100% CH₄ LHV: 35.9 MJ/Nm³ * Please contact Kawasaki for information on other gas fuels, DLE operating range, etc.
 HRSG: 0.83 MPaG at above-noted air pressure, 80° C feed water temp., no blowdown

Typical System Flow



Typical Layout

