ТЕМПЕРИЛОДЖИСТИКСЕООД
TEMPERI LOGISTICS LTD

Manufacturers of gas turbine units in the EU and Asia

Part 2

2024

Asia's Largest Gas Turbine Manufacturers.

1. **Kawasaki Heavy Industries Ltd.,** Japan

The world's largest Japanese concern, a manufacturer of power plants and equipment, in particular gas turbine plants, engines, industrial robots, heavy equipment, aerospace and defense equipment, rolling stock and ships.

Includes 100 companies in Japan and around the world, more than 50 holdings (factories, distribution centers, branches and centers for marketing and sales).

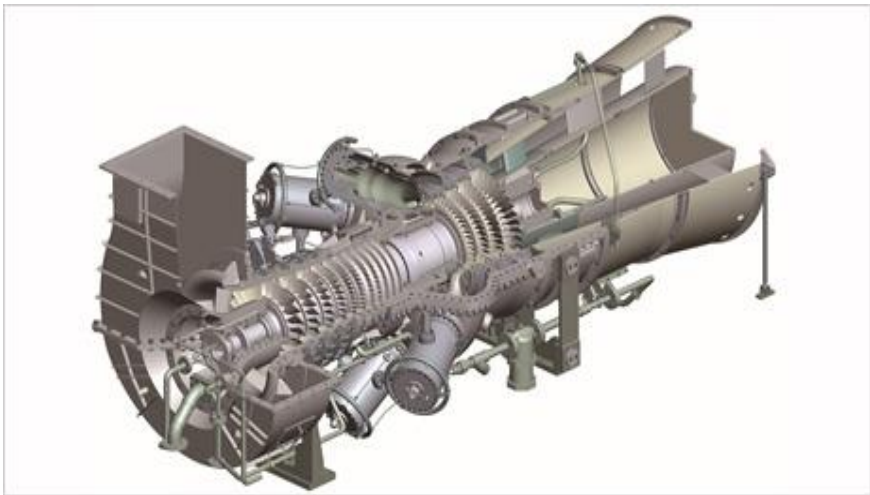
Energy Solution & Marine Engineering Company

Cogeneration, power plants, gas turbines, gas engines, etc.

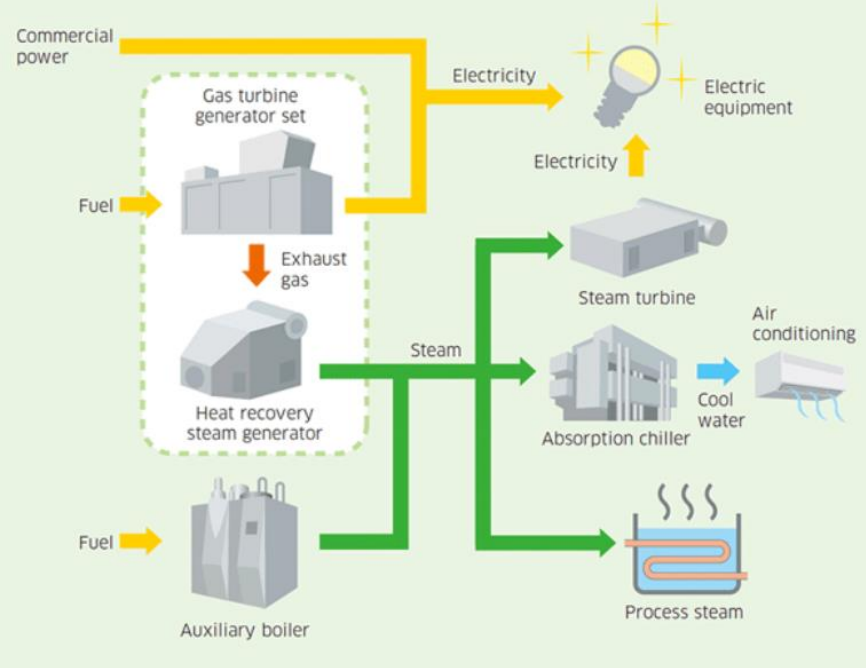
Products:

- Gas Turbine Cogeneration System (Kawasaki GPB Series)

A cogeneration system drives a gas turbine using primary energy (fuel) and continuously produces multiple types of secondary energy (e.g. electricity, steam).



In a gas turbine cogeneration system, fuel is used as the primary energy and multiple types of energy are produced to make more efficient use of energy. In addition, the system limits NOx production and reduces environmental impact by using a gas turbine as a drive source.



By using a DLE (Dry Low Emission) combustion chamber, the system has a NOx emission rate below the NOx emission standards set in many regions. A variety of fuels can be used, including city gas, natural gas, liquefied petroleum gas, kerosene, diesel and fuel oil A.

Model range

Engine Series	M1A Gas Turbine Series					
Gas Turbine Model	**M1A-13A**	**M1A-13D**	**M1A-17**	**M1A-17D**	**M1T-13A**	**M1T-13D**
Gas Turbine Generator Model	GPB15	GPB15D	GPB17	GPB17D	GPB30	GPB30D
Electric Output kW	1,450	1,450	1,755	1,755	2,850	2,850
Heat Rate kJ/kWe-hr	15,130	15,280	13,120	13,120	15,350	15,510
Exhaust Gas Temperature °C	524	534	526	526	523	534
Exhaust Gas Mass Flow x10³ kg/hr	28.8	28.5	28.8	28.8	57.6	57
HRSG Steam Output x10³ kg/hr	5	5.1	5	5	9.9	10.2
Total Thermal Efficiency %	79.2	79.7	80.4	80.4	78.8	79.3
NOx (02 : 15%) ppm	-	25	-	9*/15	-	25
Approximate Package Dimension (L,W,H) m	5.3 x 1.7 x 2.4		6.0 x 1.9 x 2.6		6.0 x 2.4 x 2.4	
Approximate Package Weight (dry) x10³ kg	14		14		21	

The Kawasaki GPB series is designed for base load applications, both in parallel with the grid and in island mode.

In addition, the Kawasaki GPB series can operate in cogeneration mode with the ability to automatically supply electricity and heat (steam, hot water, direct heat) by collecting waste heat using a heat recovery steam generator (HRSG), heat exchanger, or dryer, and in a combined cycle with a steam turbine generator. Due to the high overall thermal efficiency, the Kawasaki GPB series is able to operate very efficiently.

Engine Series	M5A Gas Turbine Series
Gas Turbine Model	M5A-01
Gas Turbine Generator Model	GPB50D
Electric Output kW	4,715
Heat Rate kJ/kWe-hr	11,100
Exhaust Gas Temperature °C	516
Exhaust Gas Mass Flow x10³ kg/hr	62.6
HRSG Steam Output x10³ kg/hr	10.6
Total Thermal Efficiency %	81.8
NOx (02 : 15%) ppm	15
Approximate Package Dimension (L,W,H) m	8.7 x 2.4 x 3.5
Approximate Package Weight (dry) x10³ kg	41

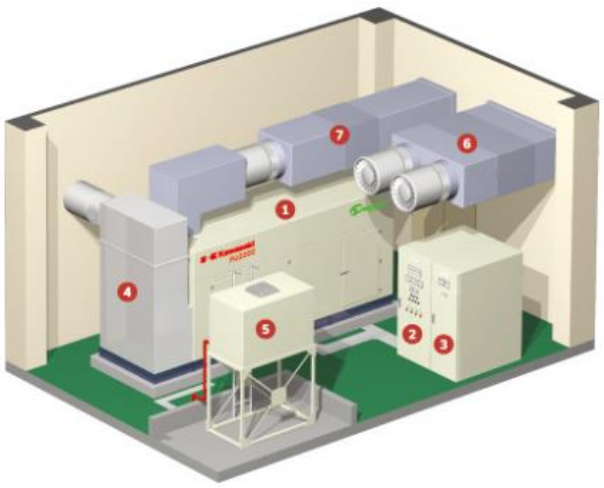
Engine Series	M7A Gas Turbine Series					
Gas Turbine Model	M7A-01	M7A-01D	M7A-02	M7A-02D	M7A-03	M7A-03D
Gas Turbine Generator Model	GPB60	GPB60D	GPB70	GPB70D	GPB80	GPB80D
Electric Output kW	5,410	5,280	6,590	6,530	7,660	7,660
Heat Rate kJ/kWe-hr	12,300	12,460	12,070	12,090	10,830	10,830
Exhaust Gas Temperature °C	548	545	519	516	525	525
Exhaust Gas Mass Flow x10³ kg/hr	77.6	77.6	95.8	95.8	97.3	97.3
HRSG Steam Output x10³ kg/hr	14.5	14.4	16.4	16.2	17	17
Total Thermal Efficiency %	82.5	82.3	80	79.8	83.1	83.1
NOx (02 : 15%) ppm	-	35	-	25	-	9.9/15
Approximate Package Dimension (L,W,H) m	11 x 2.6 x 3.7					
Approximate Package Weight (dry) x10³ kg	55		58		58	

Engine Series	L20A Gas Turbine Series	L30A Gas Turbine Series
Gas Turbine Model	**L20A**	**L30A**
Gas Turbine Generator Model	GPB180D	GPB300D
Electric Output kW	17,970	32,360
Heat Rate kJ/kWe-hr	10,690	9,110
Exhaust Gas Temperature °C	545	519
Exhaust Gas Mass Flow x10³ kg/hr	213	315.8
HRSG Steam Output x10³ kg/hr	39.7	54.1
Total Thermal Efficiency %	84	84.3
NOx (02 : 15%) ppm	15	15
Approximate Package Dimension (L,W,H) m	17.4 x 3.5 x 3.4	14.2 x 4.5 x 5.3
Approximate Package Weight (dry) x10³ kg	143	155

- Standby Generator Sets (Kawasaki GPS Series)

Typical model

Kawasaki gas turbine standby generating equipment consists of a generator set consisting of an alternator and a gas turbine mounted on a common bed, and other equipment such as an automatic start generator panel, a gas turbine starter, an exhaust muffler, a fuel tank for daily maintenance, and air handling equipment.



1. Generator set

The generator, gas turbine and associated equipment are mounted as a single unit on a common platform and enclosed in a soundproof casing.

2. Automatic generator start panel. This system combines the starter panel and the gas turbine control panel.

3. Gas turbine starter

Both electric and air types are available. The electric type is standard and consists of a battery pack and charger. The air type consists of an air tank, air compressor and starting valve unit.

4. Exhaust muffler

5. Fuel tank

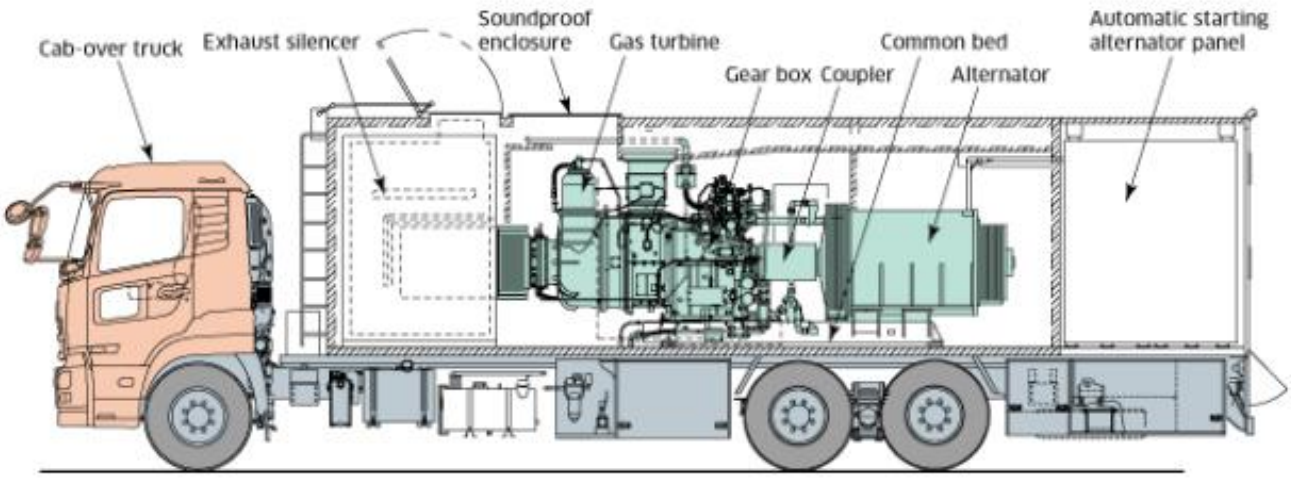
6. Air supply system (for indoor installation)

7. Ventilation system (for indoor installation). Consists of a fan, muffler and other components.

- Mobile Generator Set (Kawasaki MGP/TGP Series)

  A mobile generator set is a mobile private power generation system in which a truck or trailer is equipped with a power plant, alternator, and other associated equipment.

  These systems are effective as emergency power sources in the event of a disaster or major power outage, and as temporary power sources for jobs such as installing or testing power lines.



- CHP・Cogeneration / Distributed Power
- Oil & Gas Applications

Web: https://global.kawasaki.com/

2. **Bharat Heavy Electricals Limited,** India

Bharat Heavy Electricals Limited is an Indian state-owned enterprise and the largest manufacturer of power generation equipment under the Ministry of Heavy Industries, with 29,000 employees.

The company designs, engineers, manufactures, constructs, installs, commissions and services a wide range of products, systems and services in various sectors including power generation (thermal, hydro, gas, nuclear and solar), transmission, transportation, defence, aerospace, oil and gas, and emerging sectors such as battery energy storage systems and electric vehicle chargers.

The company has a network of 16 manufacturing units, 2 repair units, 4 regional offices, 8 service centres, 8 overseas offices, 15 regional centres, 7 joint ventures and an infrastructure to execute over 150 projects at sites across India and overseas.

The company can supply power equipment of up to 20,000 MW per annum.

BHEL has global connections in over 76 countries across all continents.

BHEL has a combined installed capacity of over 9,000 MW of power plants overseas in 21 countries including Malaysia, Oman, Iraq, UAE, Bhutan, Egypt and New Zealand.

Energy sector products:

1. Steam turbines, generators, boilers and related auxiliary equipment for fossil fuel fired plants up to 1000 MW
2. Emission control equipment including flue gas desulphurization systems for SOx control, high efficiency electrostatic precipitators for particulate matter control, and boiler modification and selective catalytic reduction systems for NOx control.
3. Gas turbines and generators up to 299 MW
4. Hydro turbines and generators up to 400 MW
5. Nuclear turbo generator sets 220/235/500/540/700 MW
6. Plant performance enhancement through revamps, modernisation, flexibility, capacity upgrading, residual life assessment, condition diagnostics and plant life extension.

BHEL manufactures a complete range of Heavy Duty Industrial Gas Turbines for all utility and industrial applications.

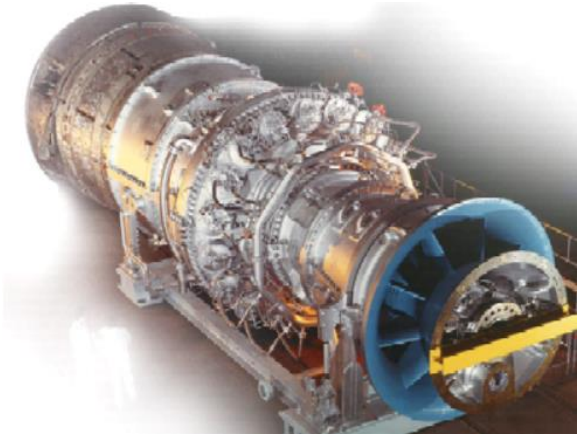
They are installed in refineries, petrochemical plants, gas compressor stations and power plants in India and abroad.

Basic models cover a power range from 25,000 to 290,000 kW.

Models:

- *Frame 5 GT* is a small size single shaft high power gas turbine for open and cogeneration applications, for power generation plants together with other plants in the process industry, has the following characteristics:
  - 7-stage axial compressor.
  - 2-stage turbine with air-cooled 1st stage nozzle.
  - 10 annular combustors with reverse flow, suitable for dual fuel combustion.
  - Horizontal split casing, 2-bearing machine.
  - Auxiliary base contains starting system, lubrication system, fuel system with gearbox drive shaft for driving lubricating oil, fuel, hydraulic oil and drives of spray air compressor.
  - Diesel/engine starting device.
  - Loading mechanism is provided to reduce the speed according to the 50Hz/60Hz generator.
  - Generator - hot end drive.

- *Frame 6B* is a single shaft high power gas turbine with split base for auxiliary module and turbine module with characteristics:
  - 17-stage axial compressor.
  - 3-stage turbine with 1st and 2nd stage blades and air-cooled nozzles.
  - *10 annular combustion chambers. Can be reverse flow annular combustion chambers.*
  - *Honeycomb seals for 2nd and 3rd stages for increased efficiency.*
  - *Auxiliary base contains starting system, lube oil console, shaft driven gearbox driving lube, fuel, hydraulic oil and spray air compressor drives.*
  - *Diesel/engine starting device.*
  - *Equipped with load transmission for speed reduction.*
  - *Generator - hot end drive.*
    - *Frame 9E*
    - *Frame 9FA*
    - *Frame 9FB*



BHEL Gas Turbine Catalogue: https://hpep.bhel.com/images/prod/gt/catalog.pdf

Web: https://www.bhel.com/ https://hpep.bhel.com/product.jsp?prod=gt&sub=main

3. **Harbin Electric Corporation,** China

Harbin Electric is a Chinese state-owned company, a major manufacturer of power equipment (one of the three largest Chinese manufacturers). It develops and manufactures equipment for thermal, nuclear and hydroelectric power plants, as well as turbines for ships and wind power plants.

70% of Harbin Electric Company's sales come from China, other important markets are the UAE, Pakistan, Turkey, Bangladesh, Indonesia and Ecuador.

Among the subsidiaries:

Harbin Turbine Company

The company produces steam turbines, marine turbines, high-power gas turbines.

Products

6F.01, 9F.03, 9F.05 and 9HA.01 gas turbines and combined heat and power plant steam turbines, generators and waste heat boilers, etc. By 2017, Harbin Electric had signed 24 contract projects and sold 52 sets of combined heat and power equipment, including 32 sets of 9FA model, 17 sets of 9FB model, 2 sets of 6FA and 1 set of 9HA model, occupying 30% of China's market share.

Web: http://www.harbin-electric.com/

4. **Dongfang Electric Corporation (DEC),** China

DEC is a Chinese state-owned company, a major manufacturer of power equipment (one of the three largest Chinese manufacturers). DEC produces 1/3 of all Chinese equipment for thermal power plants and 2/5 for hydroelectric power plants. The company has representative offices in India, Indonesia, Iran, Pakistan and Vietnam. Dongfang Electric Corporation produces equipment for thermal power plants (boilers, steam and gas turbines, generators), hydroelectric power plants (turbines), nuclear power plants, wind power plants, solar power plants, as well as inverters, control and measuring devices, equipment for cleaning and filtering water and gases, desalination plants, hydrogen fuel cells for vehicles.

Dongfang Turbine Co. Ltd. researches, designs and manufactures equipment for power plants, shipyards, chemical, transportation and environmental protection industries. The company's wide range of equipment and models includes advanced gas turbines (E, F and J class), related steam turbines, generators, waste heat boilers (heat recovery steam generators) and more.

DEC's gas turbine product range includes:

- D Series: The rugged and reliable D Series is compatible with a variety of fuels.
- F Series: Highly efficient and highly reliable, the F Series has the largest fleet of machines in operation.
- J Series: Highly productive and highly reliable, the J Series provides the most cost-effective conversion.

DEC Gas Turbines Deliver Enhanced Combined Cycle Efficiency and Ultra-Low NOx Emissions.

Web: http://www.dongfang.com.cn/

5. **Shanghai Electric Group,** China

Shanghai Electric Group Company Limited is the largest Chinese manufacturer of power and industrial equipment (one of the three largest companies in the country and the world's largest manufacturer of steam turbines), with about 40 thousand employees.

In 2021, Shanghai Electric acquired 40% of the Italian manufacturer of power equipment Ansaldo Energia.

Shanghai Electric specializes in the production of equipment for nuclear, thermal, wind and solar power plants, equipment for the transmission and distribution of electricity (including steam turbines, steam boilers, wind generators, circuit breakers, switchgear, electric transformers, high-voltage inverters, equipment for coal liquefaction and petrochemical hydrogenation), industrial automation, printing, packaging and transport equipment (including metal-cutting machines, escalators, electric motors, ship crankshafts, railway and aerospace equipment, seawater desalination plants, 3D printers) and environmental protection equipment.

Shanghai Electric's sales come from power equipment (including thermal, nuclear and wind), 50% from industrial equipment (including elevators, machine tools and robots), 30% from the service sector (project development, power plant and equipment maintenance). Shanghai Electric accounts for almost half of China's nuclear power equipment market.

Among the subsidiaries:

- Shanghai Turbine Works Company (turbine manufacturing)
- Shanghai Generator Works (production of generators)

Products

- SINGLE-SHAFT GAS TURBINE AE94.3A

Rated power kW Max.: 30,000 kW (40,788.63 hp) Min.: 22,000 kW (29,911.67 hp). AE94.3A, the F-class gas turbine, is one of the most widely used models in the domestic market in recent years. Its greatest feature is flexible and diverse, combined cycle configuration forms are rich, and it can meet all kinds of configuration including 1 on 1, 2 on 1, single-shaft, multi-shaft. The model uses a horizontal splitted cylinder structure, a central tied-rod rotor, a 15-stage axial compressor, a 2-stage adjustable IGV, a 4-stage axial flow turbine and a annular-type combustion chamber with 24 circumferentially VeLoNOx burners, which ensure low emissions while at a lower load range. In addition, AE94.3A gas turbine has the characteristics of flexible operation and quick start-up, which is suitable for peak shaving and grid frequency regulation. The normal loading rate is 13 MW/min, which can reach 22-30 MW/min when participating in peak load

regulation of power grid. It takes only about 5 minutes from initial state to full speed no-load state during start-up of gas turbine, and only about 23 minutes from full speed no-load state to basic load. AE94.3A is compact, reliable, easy maintenance, fast start and environmental sustainable. The technical features are as below: 1) High efficiency 15-stage axial compressor, with 2 stages of VGVs, 1 annular combustion chamber and 24 Dry low NOX hybrid burners for both fuel gas and fuel oil, 4 stage turbine. 2) Robust rotor design with high stiffness, low weight, easy maintenacce on site. 3) Efficient and reliable secondary air system, featured Rotor Displacement System design.

- Gas turbine AE94.2

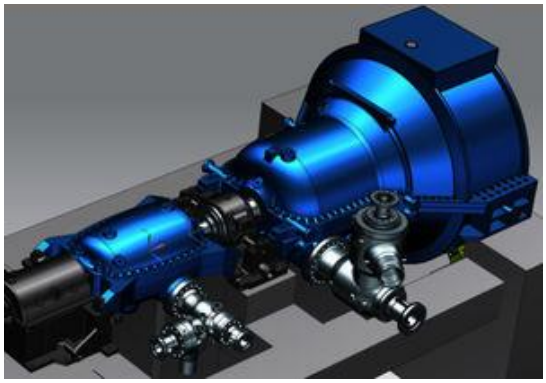
AE94.2 (E Class) gas turbine, is widely used in overseas markets and some domestic markets. Its greatest feature is its reliability and durability, as well as its high output performance. In addition, because of its unique cylindrical combustion chamber, it can adapt to a variety of special fuels, including light oil, some heavy oil, blast furnace gas, coke oven gas, etc. It has gained favor from many dual- fuel-demand customers in global and domestic market. In terms of structure, AE94.2 and AE94.3A are basically the same. A horizontally splitted cylinder and a central tied-rod rotor are adopted. The compressor has 16-stage axial flow and 1-stage adjustable IGV. The first six compressor blades are coated with anticorrosive coatings and the four-stage axial flow turbine. The major difference is that the combustion chamber adopts two cylindrical combustion chambers distributed on both sides of the GT body, with eight burners on each upper part of the combustion chamber. The normal loading rate of AE94.2 is 11 MW/min and 30 MW/min for peak load regulation, which also has the characteristics of quick start-up and shutdown. The AE94.2 is a compact, reliable unit, with the feature of easy maintenance,superior fuel flexibility, fast start and environmental sustainable. 1) Structural features: high efficiency 16-stage axial flow compressor, with 1 stage IGV, two silo combustion chambers with 2*8 dry low NOx hybrid burners for both fuel gas and fuel oil, and 4-stage turbine. 2) Easy maintenance: robust rotor design with hign stiffness, low weight, easy maintenacce on site. 3) Efficient and Reliable secondary air system, featured Rotor Displacement System.

- Gas turbine AE64.3A

AE64.3A, or small F class gas turbine, has an increasing demand in a growing number of small power plants or distributed energy projects in recent years. AE64.3A can be called a scaled-down AE94.3A. It is similar in structure to AE94.3A. It is also an axial flow compressor with 15-stage and 1-stage adjustable IGV. The first four-stage blades and the first three-stage vanes are coated with anti-corrosion coating. The combustion chamber also adopts annular type structure. The normal loading rate of AE64.3A gas turbine is 3.5MW/min and 7MW/min in peak load regulation of power grid. It also has the characteristics of flexible start-up and shutdown. The AE64.3A GT is compact, reliable, easy maintenance and environmental sustainable. The technical features are as below: 1) High efficiency 15-stage axial compressor, with 1 stage IGV, annular combustion

chamber and 24 Dry low NOx hybrid burners for both fuel gas and fuel oil, 4 stage turbine. 2) Robust rotor design with hign stiffness, low weight, easy maintenacce on site. 3) Fast start, fast ramp and hot restart capabilities, and time to reach base load within 25min. 4) NOx emission can be lowered to 15ppm. 5) Fully assembled shipping for gas turbine. Highly integrated auxiliary systems.

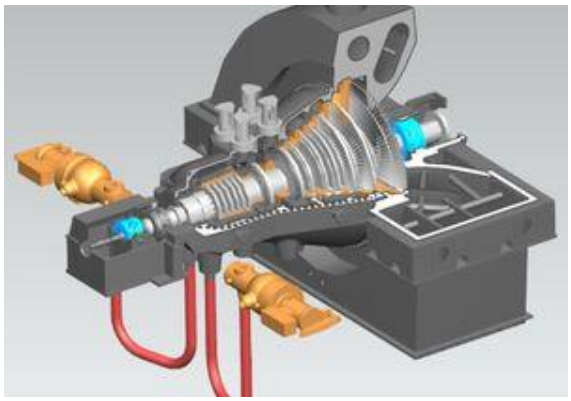
- Gas turbine F Class CCPP



Ae94.3a gas turbine and QFSN-300-2 water hydrogen cooled gas turbine generator are selected to form the power equipment of gas turbine island in Shanghai Electric F class 1 on 1 multi-shaft combined cycle, HI + LD or HS + ILA double casing module steam turbine and QF-150-2 air cooled generator are selected to form the power equipment of steam turbine generator, and SGH-F triple-pressure reheat type HRSG is matched. AE94.3A gas turbine, HS + ILA double casing steam turbine and QFSN-500-2 water hydrogen cooled generator are selected as the power equipment of the turbine island for 1 on 1 single-shaft combined cycle, which is matched with SGH-F triple-pressure reheat type HRSG. CCPP output：~483MW CCPP efficiency：≥59.7% Steam extraction： Industiral（＜3.0MP：~250t/h District：~300t/h（NC）, ~400t/h（NCB）

- Gas turbine E Class CCPP（270MW Class）

Shanghai Electric AE94.2 type gas turbine and QF-180-2 type air-cooled gas turbine generator are selected to form the power equipment of gas turbine island in the E-Class 1 on 1 multi-shaft combined cycle., IL single casing module or IS + LD double casing module steam turbine and QF-100-2 type air-cooled generator are selected to form the power equipment of steam turbine generator, and SGH-E double pressure non reheat HRSG is matched.



CCPP output：~270MW CCPP efficiency：≥53.1% Steam extraction： Industiral（＜4.0MPa）：~250t/h District：~200t/h（NC, ~300t/h NCB）

Web: http://www.shanghai-electric.com/

6. **Nanjing Turbine and Electric Machinery Group,** China

南京汽轮电机（集团）有限责任公司
NANJING TURBINE & ELECTRIC MACHINERY (GROUP) CO,LTD.

Nanjing Turbine and Electric Machinery Group, a state-owned company, develops and manufactures high-power gas turbine generator sets and steam cycle combined cycle power equipment, cogeneration steam turbine generator sets, large and medium engines and other products used in steel, petrochemical, cement and water conservancy industries.

In addition to meeting the needs of the domestic market, the products are also exported to Southeast Asia, South Asia, Africa and the Middle East.

The company's turbines are designed and manufactured using the world's leading full 4D flow technology with a single machine capacity of 6-330 MW and include more than 160 types such as condensing turbines, steam extraction turbines, backpressure turbines and backpressure steam extraction turbines.

Products

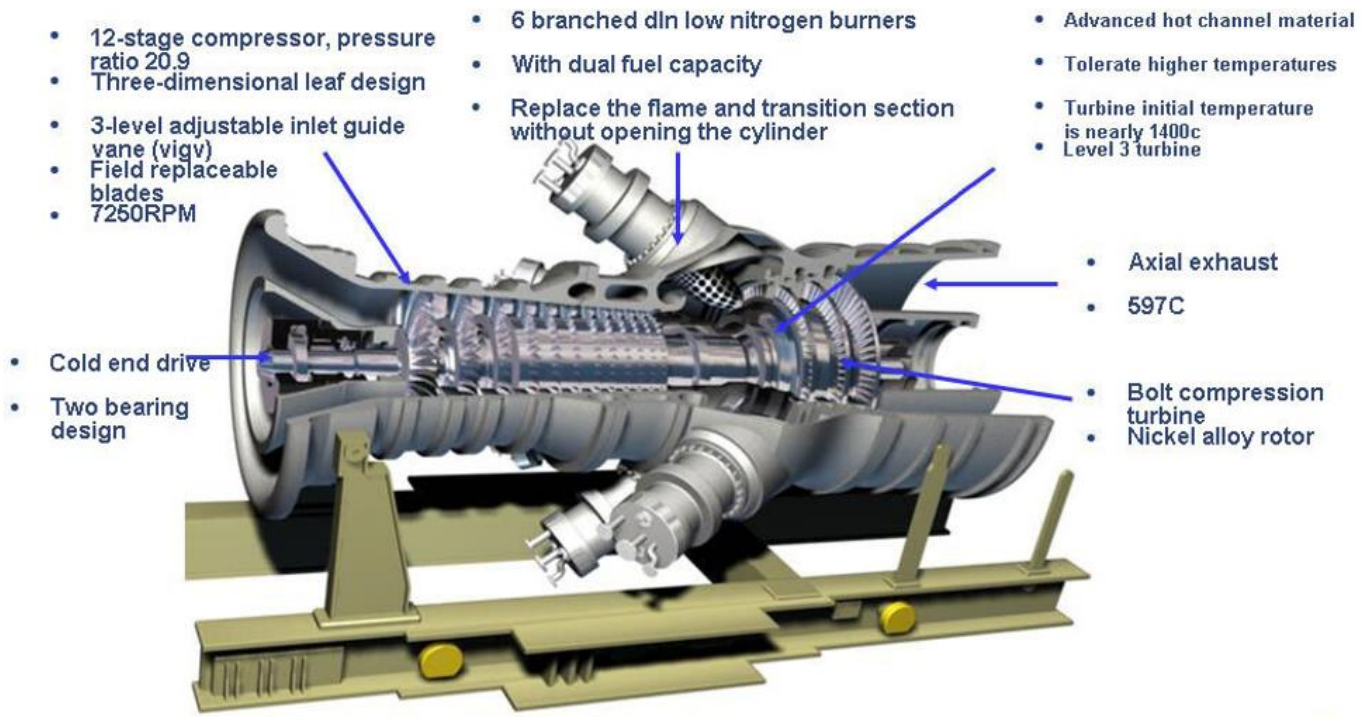
More than 160 types of gas turbines and auxiliary equipment with single machine power of 6-350 MW.

QF, QFW, QFR series, as well as the blast furnace gas recovery turbine unit (TRT).

A full range of medium and high power AC motors with single machine power of 130 - 5000 kW and voltage class 380, 6000, 10000 V.

- Gas turbine 6f.01(50 MW)

Gas turbine for small and medium cogeneration and combined cycle power generation, gas turbine efficiency 37.9%

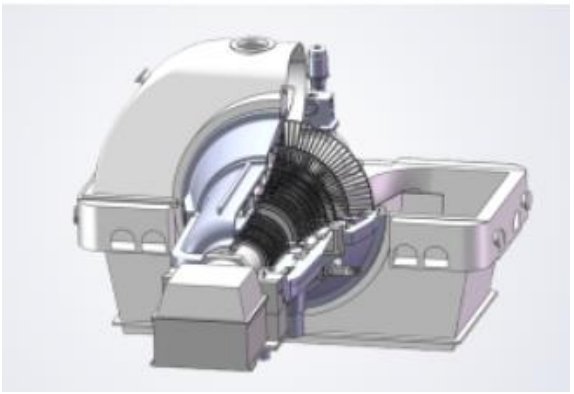


- Gas turbine 6f.03

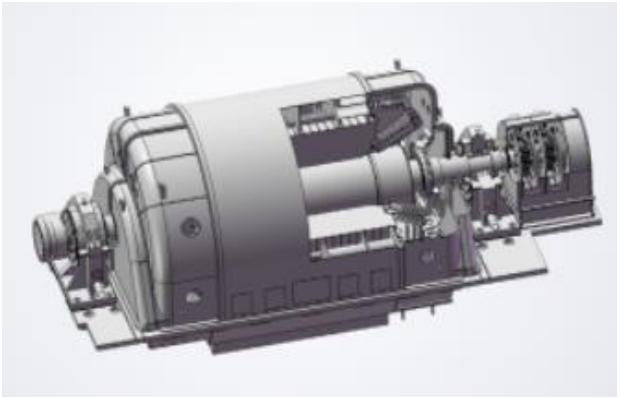
Main performance indicators of gas turbine:

Performance	Output （MW）	Heat consumption （kJ/kWh）	Effectiveness%
Simple loop	80	9 991	36%
1×1 combined cycle	123	6 510	55.3%
2×1 combined cycle	245	6 467	55.7%

- Condensing steam turbine (50~135MW)



- 135MW class turbine generator



Web: http://en.ntcchina.com/

7. **Doosan Enerbility,** South Korea

Doosan Enerbility is a heavy industry company, including the production and construction of nuclear power plants, thermal power plants, turbines and generators, desalination plants, castings and forgings.

In 2009, Doosan acquired the Czech manufacturer of energy systems Škoda Power. In 2011, the company acquired AE&E Chennai Works (currently Doosan Power Systems India).

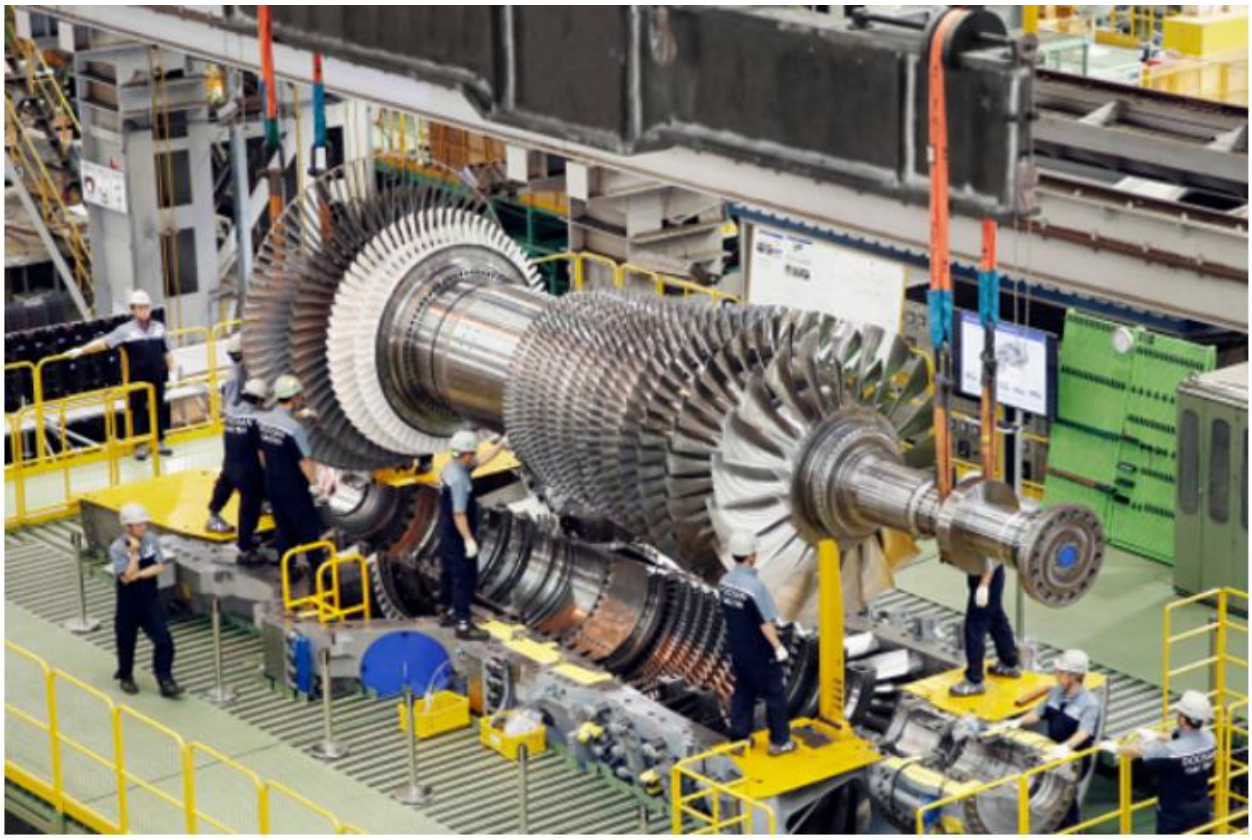
It is the parent company of Bobcat and Škoda Power.

Subsidiaries: Doosan Power Systems, Doosan IMGB, Doosan Heavy Industries Vietnam, Doosan Vina HaiPhong, Doosan Power Systems India, Doosan HF Controls.

The Doosan Heavy Industry Business segment (one of the company's 6 segments) is engaged in the production of turbines, water treatment plants, etc.

Products:

Gas turbines from small to large sizes, hydrogen gas turbines for hydrogen dual fuel and full hydrogen models.



The Doosan gas turbine range includes (all can also run on hydrogen):

- DGT6-300H S1 – 60 Hz H-class gas turbine
- DGT6-300H S2 – H+ class gas turbine
- DGT-100 – 90 MW flexible mid-size gas turbine
- •DGT-5 – Small gas turbine operating on lower heating value (LHV) fuel

Example: 200 MW turbines at the Fadhili power plant in Saudi Arabia

Doosan's global network in Europe and Asia:

Web: https://www.doosanenerbility.com/

Summary Part 2

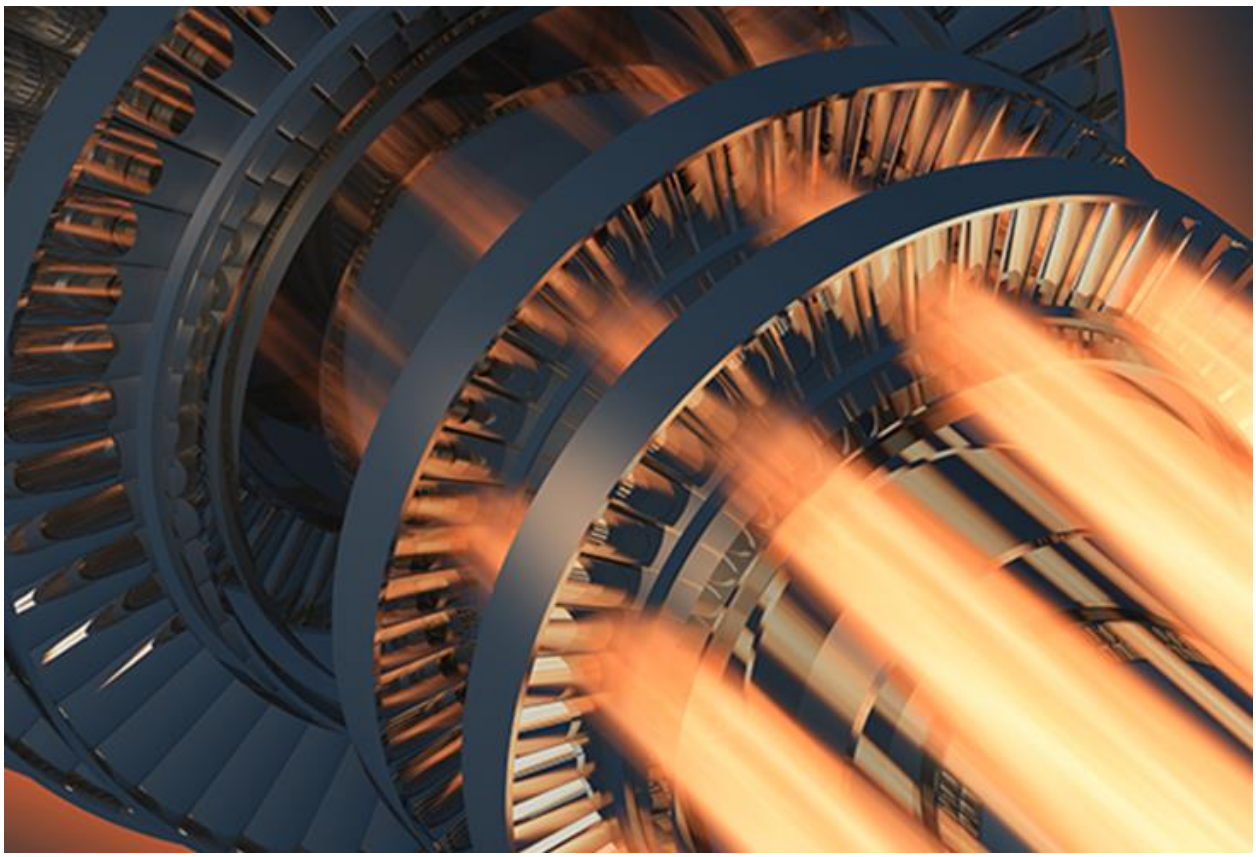
The gas turbine market is a dynamic and rapidly growing sector, driven by the demand for electricity due to urbanization and industrialization worldwide.

Gas turbines are used in open and combined cycle installations in aviation to propel aircraft, in the power generation industry to generate electricity, in the oil and gas industry to drive compressors and generate electricity, in the shipping industry to provide ship propulsion, and in various industrial sectors.

In 2023, the volume of primary energy consumption on a global scale reached a record high of approximately 620 exajoules (EJ).

This is an increase of 2% compared to the previous year. Such data are presented in a report by the Energy Institute, published on June 20, 2024.

Asia, the largest developing region, is home to 60% of the world's population, 60% of the world's major cities, and the natural population growth is positive and amounted to 55 million people in 2023. These factors indicate that the region will face growing demand for electricity in the future. According to the Statistical Review of World Energy, primary energy consumption in the region increased by a quarter from 220.48 EJ in 2013 to 272.45 EJ in 2021. In 2023, the Asia-Pacific region had the highest demand among all regions, consuming 292 EJ of primary energy, 47% of total global demand.



The Asia-Pacific region accounted for 85% of the primary energy demand in the Global South, dominated by the economies of China, India, Indonesia, Japan and South Korea.

However, gas was more positive than oil, with production able to meet 74% of demand. Gas demand in the Asia-Pacific region grew by almost 2%, led by 7% growth in China and India.

India, as part of the draft National Electricity Plan (NEP 2022), outlined the progress made during 2017-2022 and detailed plans for capacity additions between 2022 and 2027, and forecast that 370 MW of gas-fired power generation capacity would be commissioned by 2027, increasing the share of natural gas in power generation to 6.2%.

Thailand plans to build a 600 MW gas-fired power plant in Chachoengsao province in 2025, experiencing rising energy demand due to economic growth, with the country's primary energy consumption increasing from 4.51 exajoules in 2010 to 5.11 exajoules in 2021.

The gas turbine market in the Asia region is expected to grow at a CAGR of over 3.5% over the next 5 years.

China is expected to dominate the market due to its growing demand for clean and efficient electricity, and gas-fired power plants could see faster growth and add 40-50 GW of new capacity by 2025, according to the Five-Year Plan for National Economic and Social Development and the long-term goals through 2035.

In March 2022, GE Gas Power and Harbin Electric announced the construction of a new 2 GW gas-fired power plant in China. The project will use three GE 9HA.01 gas turbines.

China currently has the largest pipeline of gas power projects in Asia (approximately 91 gigawatts of gas capacity under proposal or construction). Next in line was Vietnam, with an expected addition of 56 gigawatts of gas capacity to its grid. Developments like these will shape the dynamics of the Asian gas turbine market in the near future.

Part 2 of the report covers Asian players in the gas turbine market, namely:

1. Kawasaki Heavy Industries Ltd., Japan
2. Bharat Heavy Electricals Limited, India
3. Harbin Electric Corporation, Китай
4. Dongfang Electric Corporation (DEC), China
5. Shanghai Electric Group, Китай
6. Nanjing Turbine and Electric Machinery Group, China
7. Doosan Enerbility, South Korea