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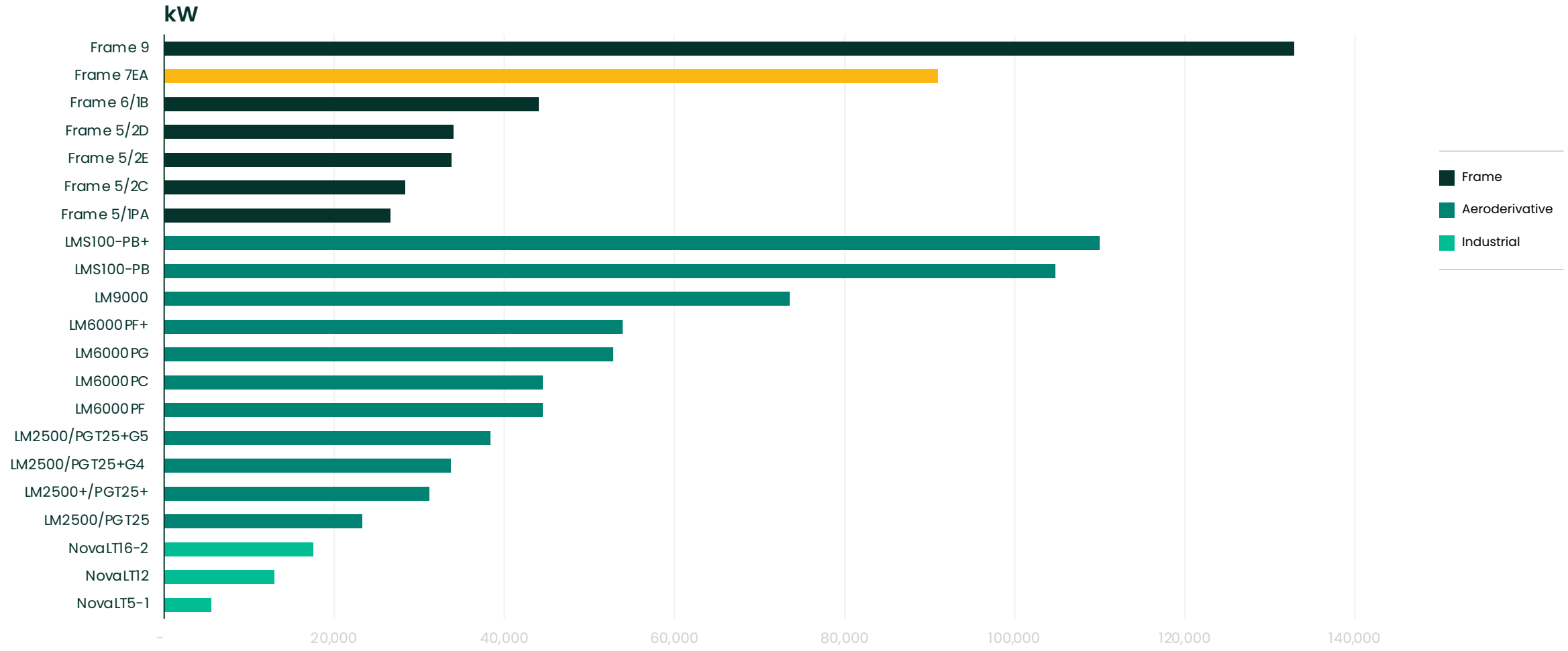
Frame 7/1EA gas turbine (91 MW)

40+ years of continuous enhancements

Exclusive distributor of GE Power products for the oil and gas market

Industry leader in gas turbine technology



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Frame 7/1EA

Single-shaft gas turbine with hot-end drive and proven reliability and energy efficiency.

With over 1,150 units installed worldwide, the Frame 7/1EA gas turbine is well-proven for its energy efficiency, maintainability—as well as high reliability and availability in both power generation and mechanical drive applications.

It's a fuel-flexible turbine that can operate on natural gas, liquefied natural gas (LNG), distillate, and treated residual oil in a variety of applications.

It is continually improved by advanced technology injections through our conversions, modifications, and upgrades.

Key technical and benefits

- Output: 91,000 Kw
- Efficiency: 33.9%
- The combustion chamber system is available in both standard (diffusive) and DLN1+ (Dry Low NOx) versions
- Enhanced fuel flexibility with no impact on combustor's operability or integrity

Main applications

- LNG
- Pipeline
- Gas storage

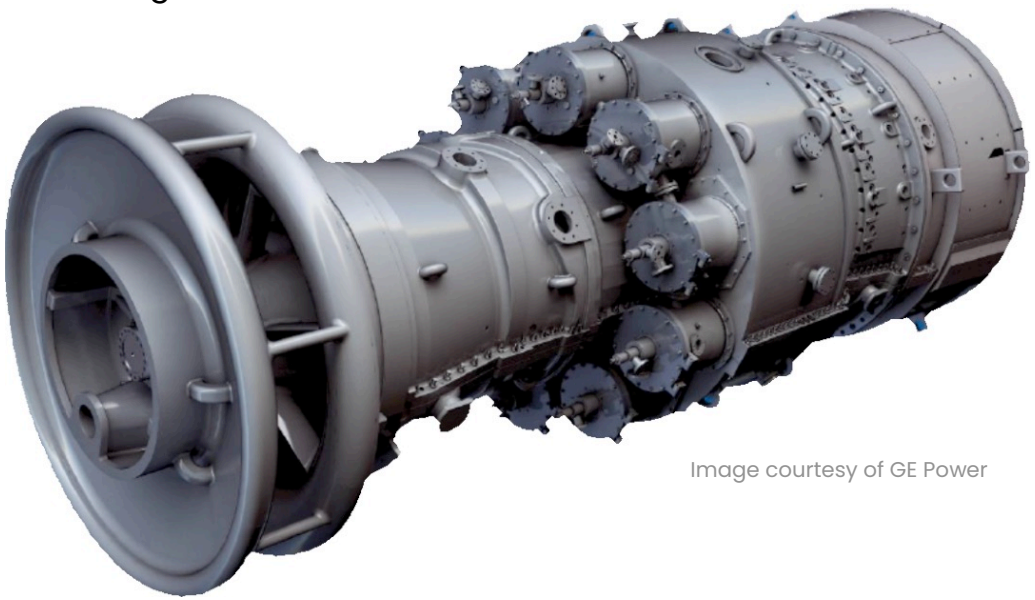

Image courtesy of GE Power

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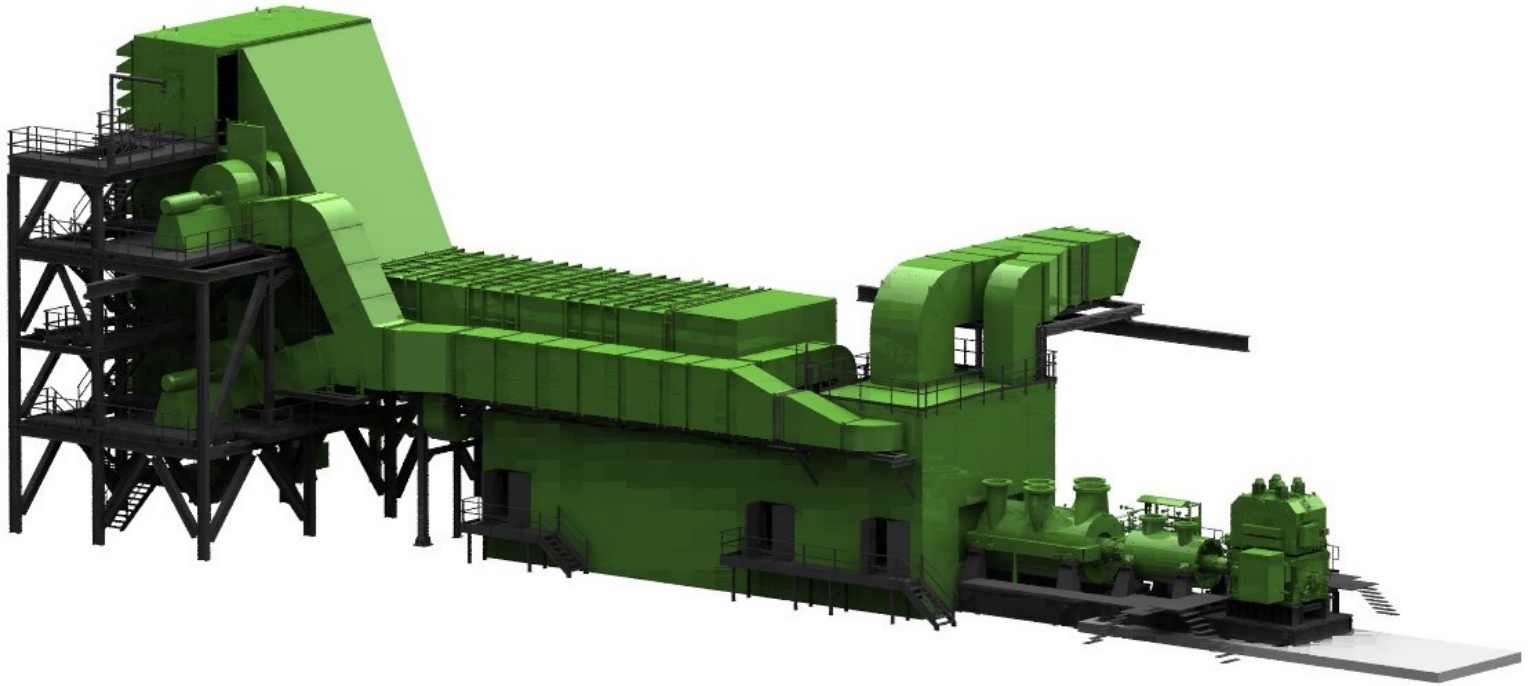
Package

Compact design

- Compact and quick to install
- Suitable for generator-drive and mechanical-drive applications
- Dual-base configuration for auxiliaries and engine



Typical mechanical-drive package

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Package

Installation and maintenance

The Frame 7/1EA gas turbine is delivered with an auxiliary skid that includes:

- Auxiliary gearbox and coupling
- Lubricating oil system with filters, pumps, heat exchanger, and reservoir
- Starting motor and turning device
- Hydraulic oil system with shaft-driven oil pump

Horizontal mid-split casings enable easier access to turbine components and facilitate maintenance at site.

Service/upgrades

To improve the performance of aged models, a wide range of upgrade kits are available, including:

- Power output increase MW
- Efficiency % increase
- Maintenance intervals extension
- Emissions reduction

Frame 7/1EA interval extension capability

Standard or DLN combustion inspections	Maintenance intervals—factored fired hours (FFH)/factored fired starts (FFS)
DLN1	12,000/450
DLN1 LN (low NOx)	24,000/600
DLN1+ LN	32,000/1,300
DLN1+ ULN (ultra low NOx)	32,000/1,300
STD	8,000/450
STD with Extendor™	24,000/900
STD with Advanced Extendor™	32,000/900
MNQC (multi nozzle quiet combustion)	12,000/450

Note: Frame 7/1EA gas turbine maintenance in public GER3620

Datasheet

Main architecture attributes

- 17-stage axial compressor
- Three turbine stages with air-cooled first and second-stage nozzles and buckets
- 10 combustion chambers with reverse-flow STD/DLN1+/DLN1+ ULN combustion system (single-digit NOx emissions)
- Able to burn a wide range of fuels including crude oil
- Dual-fuel capability with STD/DLN1+DLN1+ ULN combustion system; up to 100% H_2 burnability with STD combustor

Power generation

		DLN
Power	MW	91
Efficiency	%	33.9
NOx	ppm	4
Exhaust	°C	552
Speed	rpm	3,600

Package (typical dimensions and weights)

		GT skid	Aux skid	CE CO+ helper skid
LxWxH	m	11.6.x3.6x4.4	8.4x3.6x3.6	15.5x5.1x4.5
Weight	kg	134,000	38,000	308,000

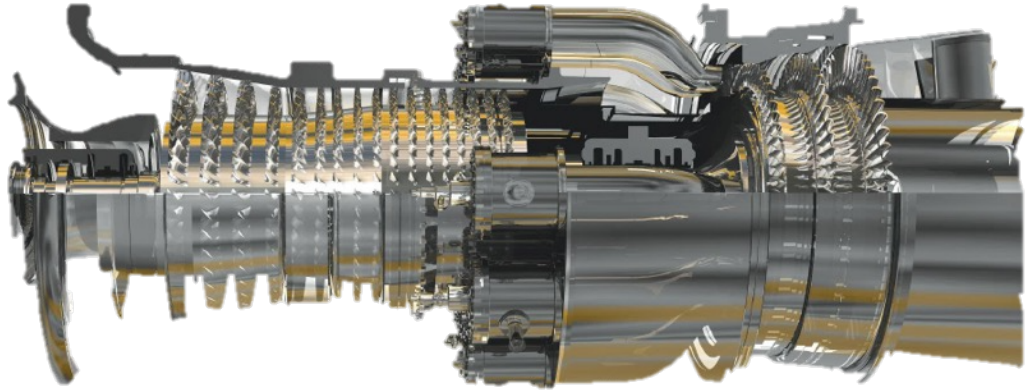

Image courtesy of GE Power

ISO conditions with natural gas fuel, ambient temperature 15°C, no inlet or exhaust losses, sea level, 60% relative humidity.
Assuming average losses for EG and GB.

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Projects

Saudi Arabia: power plant

- High fuel flexibility
- Frame 7/1EA operating with crude oil

Yamal: LNG project

- Frame 7/1EA operating in harsh ambient conditions down to -50°C
- Mechanical-drive: Frame 7/1EA drives three large centrifugal compressors

Massa plant

- Proven experience to test Frame 7/1EA and other large gas turbines in string configuration with driven equipment

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