



9F Power Plants

With over 440 units deployed to more than 40 countries, GE has the largest operating and most experienced OEM F-class fleet in the world. Our 9F gas turbine delivers consistent performance and accommodates a diverse range of fuels, making it ideal for a variety of combined cycle and CHP applications. The simple and robust air-cooled architecture is designed for longer parts durability and extended service inspection intervals, making the 9F an ideal choice for life cycle value.

288-314 MW SIMPLE CYCLE OUTPUT
>60% COMBINED CYCLE EFFICIENCY



Capability

Proven reliability/availability with 440+ units sold, more than 18 million fired hours, and 260,000 fired starts



Versatility

Operating in more than 40 countries across the Middle East, China, Europe, India, Asia, and South America



Sustainability

Delivers high steam-to-power ratio for high fuel utilization on any CHP application (industrial cogeneration, district heating, desalination)



288-314 MW

SIMPLE CYCLE
OUTPUT

>60% COMBINED CYCLE EFFICIENCY

The 9F.05 heavy duty gas turbine provides combined cycle efficiency of more than 60% with low 15 ppm NO_x emissions. It is an all-around workhorse that provides great hot day performance to maximize customer economics under wide range ambient conditions.



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		9F.04	9F.05
SC Plant Performance	SC Net Output (MW)	288	314
	SC Net Heat Rate (Btu/kWh, LHV)	8,810	8,930
	SC Net Heat Rate (kJ/kWh, LHV)	9,295	9,422
	SC Net Efficiency (% , LHV)	38.7%	38.2%
Gas Turbine Parameters	Compression Pressure Ratio (X:1)	16.9	18.3
	GT Generator Type (Cooling)	Hydrogen	Hydrogen
	Number of Combustor Cans	18	18
	Number of Compressor Stages	18	14
	Number of Turbine Stages	3	3
	Exhaust Temperature (°F)	1,150	1,184
	Exhaust Temperature (°C)	621	640
	Exhaust Energy (MM Btu/hr)	1,524	1,700
	Exhaust Energy (MM kJ/hr)	1,608	1,794
	GT Turndown Minimum Load (%)	35%	35%
	GT Ramp Rate (MW/min) ¹	23	24
	NO _x (ppmvd) at Baseload (@15% O ₂)	15	25
	CO (ppm) at Min. Turndown w/o Abatement	24	24
	Wobbe Variation (%)	+/-15%	+/-10%
Startup Time, Conventional/Peaking (Min.) ²	23/20	23/20	
1x1 CC Plant Performance	CC Net Output (MW)	443	493
	CC Net Heat Rate (Btu/kWh, LHV)	5,666	5,619
	CC Net Heat Rate (kJ/kWh, LHV)	5,978	5,928
	CC Net Efficiency (% , LHV)	60.2%	60.7%
	Plant Turndown – Minimum Load (%)	48%	43%
	Ramp Rate (MW/Minute) ¹	22	24
	Startup Time (RR Hot, Minutes) ³	30	30
1x1 CC Power Plant Features	Bottoming Cycle Type	3PRH	3PRH
	HP Throttle Press. (psia/bar)	2,400/165	2,685/185
	HP Throttle Temp. (°F/°C)	1,085/585	1,112/600
	Reheat Temp. (°F/°C)	1,085/585	1,112/600
	ST Configuration (Type)	STF-D650	STF-D650
	GT Generator Type (Cooling)	Hydrogen	Hydrogen
2x1 CC Plant Performance	CC Net Output (MW)	889	989
	CC Net Heat Rate (Btu/kWh, LHV)	5,649	5,603
	CC Net Heat Rate (kJ/kWh, LHV)	5,960	5,911
	CC Net Efficiency (% , LHV)	60.4%	60.9%
	Plant Turndown – Minimum Load (%)	22%	20%
	Ramp Rate (MW/Minute) ¹	44	48
	Startup Time (RR Hot, Minutes) ³	39	39
2x1 CC Power Plant Features	Bottoming Cycle Type	3PRH	3PRH
	HP Throttle Press. (psia/bar)	2,400/165	2,685/185
	HP Throttle Temp. (°F/°C)	1,085/585	1,112/600
	Reheat Temp. (°F/°C)	1,085/585	1,112/600
	ST Configuration (Type)	STF-D650	STF-D650
	GT Generator Type (Cooling)	Hydrogen	Hydrogen
ST Generator Type (Cooling)	Hydrogen	Hydrogen	

1.) Ramp rates are Fast Ramp via AGC.

2.) Start times recognize purge credit. Turning gear to full speed, full load and synchronized to grid. Peaking maintenance factors may apply depending on the operating profile.

3.) Start times are based on rapid response technologies in hot start conditions with purge credit recognized. Simultaneous start sequence of gas turbine may apply depending on exact project configurations.

NOTE: All ratings are net plant, based on ISO conditions and natural gas fuel. Actual performance will vary with project-specific conditions and fuel. All performance figures based on Once-Through condenser with 1.2" Hga condenser pressure.
2PNRH = Two pressure, non-reheat; 3PRH = Three pressure, reheat.