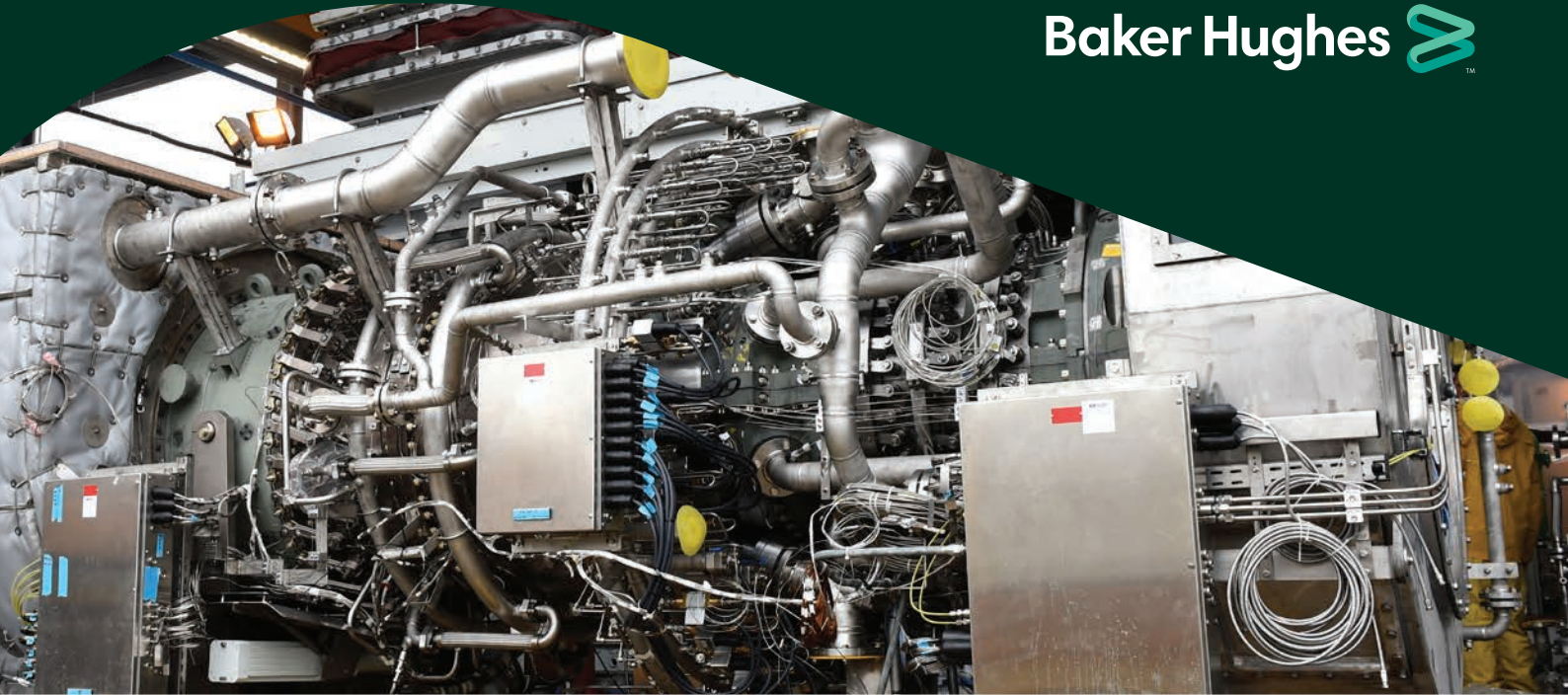




Case study

Gas turbine experience with hydrogen for energy transition

NovaLT™ roadmap

Today

- Start-up and burn gas blends up to 100% hydrogen
- Switch on the fly from natural gas to gas blends up to 100% hydrogen with no hardware modifications

Next

- New burner design and verification for NOx emissions abatement
- 100% hydrogen Dry Low NOx (DLN) combustion with full annular rig and engine test verification

Hydrogen power generation

Baker Hughes has established experience burning a variety of fuel mixtures with high hydrogen content, including about 70 projects worldwide using frame and aeroderivative gas turbines.

We recently contributed 100% H₂ NovaLT™16 turbines and reciprocating compressors to development of a green ammonia pilot plant. Ammonia is to be synthesized from nitrogen produced by an air separation unit (ASU) and hydrogen produced by an electrolyzer. Compressed hydrogen storage allows inventory management, securing stability of ammonia production as well as power generation with the 100% H₂ NovaLT™16 turbines, which will provide peaking service for a quick response to grid energy demand, while maintaining high efficiency through the entire load range thanks to VATN technology.

NovaLT™16 turbines provide value added by power generation duty because of their unique ability to start and run on 100% hydrogen at all times. The annular combustor design and dual-shaft configuration enable wide operating range and a high degree of control.

Baker Hughes gas turbine fleet experience with H₂ and inerts

Hydrogen

- 68 units installed
- Unique experience with hydrogen-fueled gas turbine
- NovaLT™16 in Australia; green ammonia site in progress (100% H₂)

Inerts

- ~30 customer sites
- N₂ blend gas up to 40%

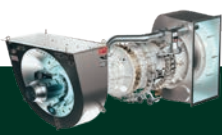
Gas turbine	Max. inerts	Max. H ₂
PGT10	40%	82%
GE10	40%	100%
LM2500/+	15%	60%
LM5000	15%	50%
LM6000	15%	33%
Frame 3/2	25%	60%
Frame 5/1	40%	50%
Frame 6/1	40%	95%
Frame 7/1	40%	50%
Frame 9/1	36%	60%

NovaLT™ gas turbines

NovaLT™ gas turbines set new standards in cost-effectiveness while providing higher efficiency and longer operational uptime for the entire asset lifecycle.

They use standardized modular components, offer a variety of output and design options, and deliver up to 99% availability and 35,000-hour mean time between maintenance.

We've significantly improved manufacturing time and consistency—while simplifying future upgrades and advanced technology injections.

			
	NovaLT™5-1	NovaLT™12	NovaLT™16
Power	5.7 MW	12.5 (13) MW	16.9 (17.5) MW
Efficiency	30.7 %	35.3 (36.8) %	36.4 (37.5) %
Nominal shaft speed	16,630 rpm	8,900 rpm	7,800 rpm

Power generation (mechanical drive)

Baker Hughes 