

Aero Combustion Turbines

Steve Cooper – GE Energy



TEXAS COMBINED HEAT & POWER INITIATIVE

★
Clean, Efficient, and Reliable Energy to Power Texas

Aero Combustion Turbines

Characteristics of Aero Combustion Turbines

- 18 to 100 MW power range (Nominal)
- Gas, liquid or dual fuel capability
- Great CHP efficiency
- Low operating costs, no start penalties
- Performance flexibility

Aero Combustion Turbines

Aeroderivative Heritage



B747
B767, MD-11, A310/330



A300



CF6-80C2



C-5



DC-10



TF39/CF6-6



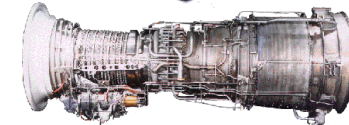
LMS100
100 MW



LM6000
40-55 MW



LM2500+
28-34 MW



LM2500
18-24 MW

- Technology & Innovation
- Quality/Reliability
- Engine Serviceability

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Fuel Requirements

- Pressure – 375 to 850 PSIG
- Flow – 7.5 to 22 MMCFD
- Heating value – 800 to 1200 Btu/scf

Liquid Fuel

- 0 – 50 psig at boost pump suction
- 25 to 95 gpm

Aero Combustion Turbines

Fuel Awareness

- Fuel requirements are based on LHV
- Medium BTU fuel nozzles available
 - Gas < 800 Btu/scf may require nozzle change
- Low BTU may effect fuel pressure
- Modified Wobbe Index
- Gas make-up effects emissions

Aero Combustion Turbines

Emissions and NO_x/CO Abatement

- GTG emissions control technologies
 - Water for NO_x – 25 ppm
 - Steam for NO_x – 25 ppm
 - DLE – 15/25 ppm NO_x
- SCR/COR
 - NO_x – 90% reduction
 - CO – 95% reduction
 - VOCs – 30% to 40% reduction (nominal)

Project Examples ...

Prime Mover Technologies

Aero Combustion Turbines Industries



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Major Airports with GT Cogen Facilities



Aero Combustion Turbines



Joseph McNamara

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Selected paintings



KIAC COGENERATION PLANT

2001

Oil and alkyd on panel

36x36"

Calpine, JFK Airport, 121 MW

2 x LM6000PC, comb cycle

Chilled & hot water to airport physical
plant

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Prime Mover Technologies

Aero Combustion Turbines

Texas Tech, 21 MW

1 x LM2500PE STIG,

Steam to campus physical plant



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University Of Texas at Austin



1 x LM2500+G4 + HRSG

27MW + Steam to campus physical plant

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Texas Medical Center Central Heating & Cooling



1 x 6000PD + HRSG

45 MW + Steam to physical plant

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Look forward to helping you ...



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