

# Solar Mobile Turbines

- Rental
- Lease
- Used Sales
- BOP
- Operation
- Maintenance



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WHERE THE WORLD TURNS FOR POWER

# More Than A Turbine Supplier



Transportation to anywhere in the World

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Balance of Plant, Transformers & Distribution

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Mobilization and Setup

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Greenfield to Commercial Operation in 8 weeks.

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Nassau, Bahamas, 20 MW Liquid Fuel

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Prudhoe Bay, Alaska USA; 15MW Natural Gas Fuel

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.....A Power Solutions Provider

## Our Goal

To provide a power  
solution that meets your  
unique needs.

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## A Power Solutions Provider

Performance  
Reliability



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# Mobility



Cusiana, Colombia 5 MW

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# Mobility



OEFC Toronto, Canada 98 MW

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# Truck Transportable



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# Ship Transportable



**Turbine Loaded on ship**

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# Air Transportable



# Self-contained Power Plant

## Power Control Room & Trailer

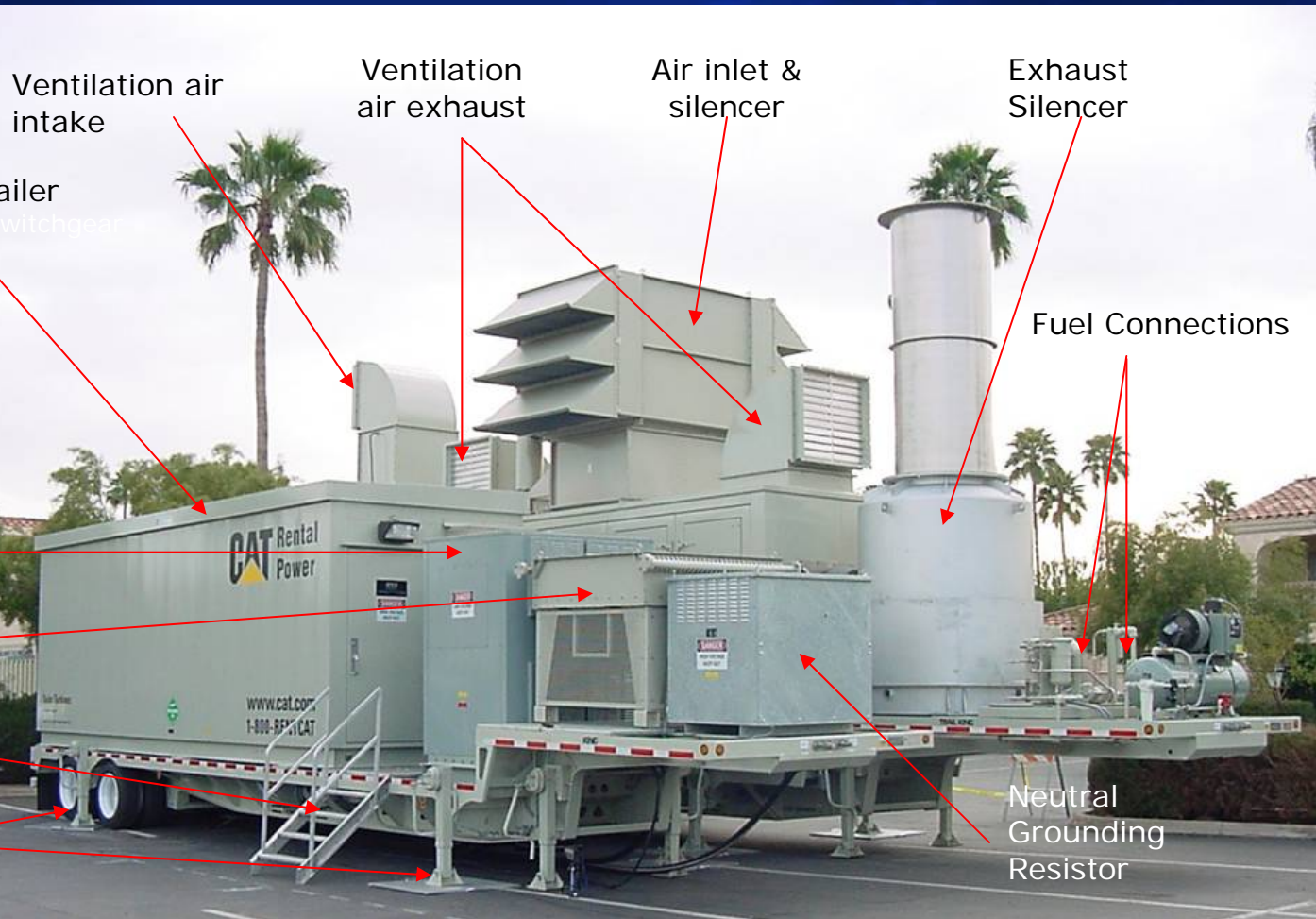
- 13.8 KV 60 Hz, 11 KV 50 Hz switchgear
- CO2 fire system
- MCCC for all turbine accessories
- 120VDC battery systems
- Allen Bradley TT4000 Monitor/control

## Aux. Power Transformer

## Lube oil cooler

## Access stairs & platforms

## Leveling jacks & pads



Ventilation air intake

Ventilation air exhaust

Air inlet & silencer

Exhaust Silencer

Fuel Connections

Neutral Grounding Resistor

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# Ease of Placement



Heavy Turbine & Power Control room easily set in place

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# Modular Components



Fast & Easy Installs

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# Easy Siting Requirements



Leveling jacks allow placement on uneven surfaces

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# Easy Siting Requirements



No Expensive Foundations Required

# Rapid Installation



CO2 Fire System

# Rapid Installation



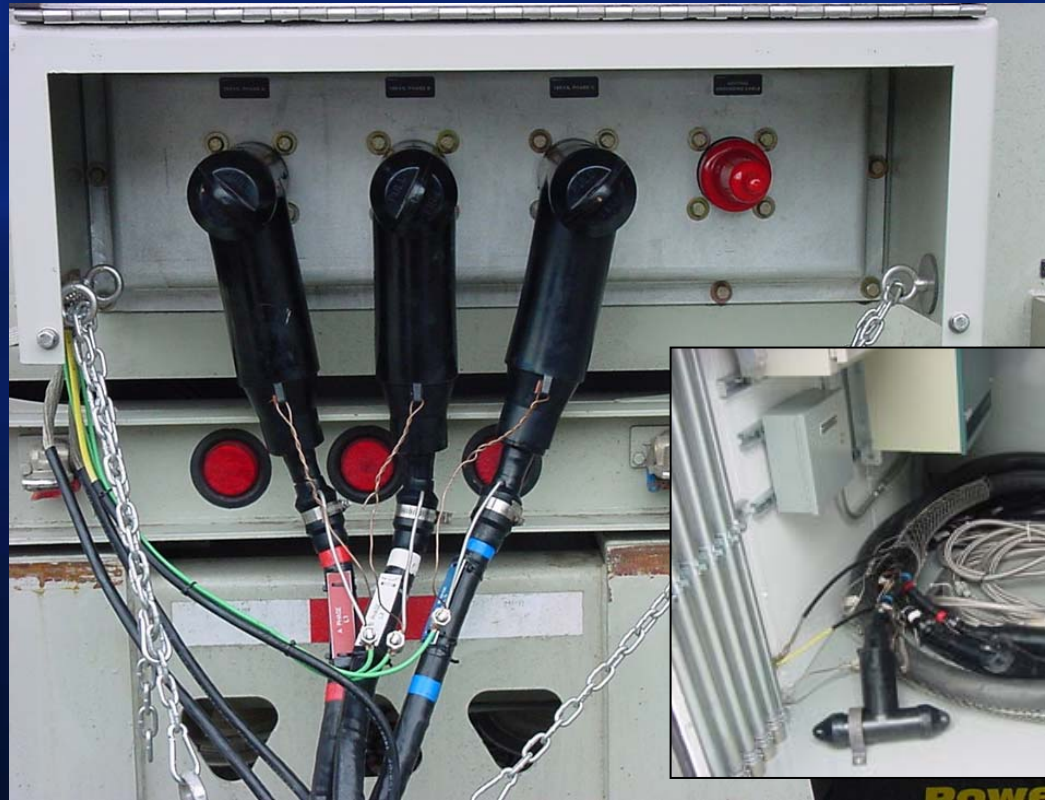
Oil Cooler Lines

# Rapid Installation



Color Coded Quick Connectors

# Rapid Installation



13.8KV Quick Connect Load Cable

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# Set Up & Operational in 3 - 5 Days



Experienced Field Set Up Crew

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## Ease of Use

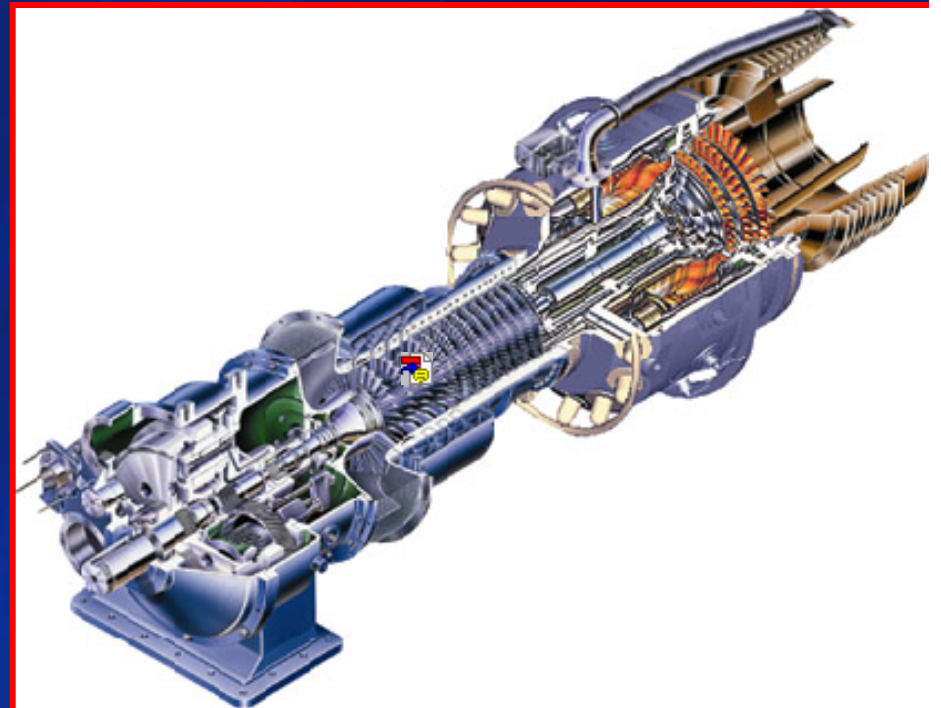


Stairs & Platforms contribute to an easy installation

# XQ5200 Performance 60 Hz

## *“Taurus™ 60 Industrial Gas Turbine”*

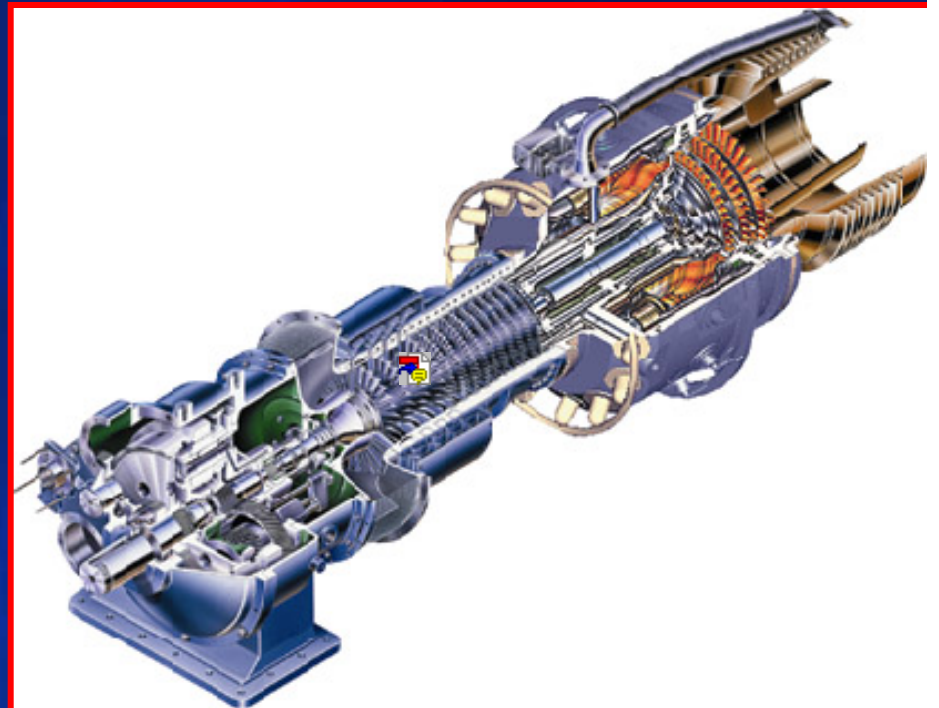
- ISO Conditions (5,200MWe)
  - 15° C (59° F) Sea Level, 0 Inlet/Exhaust Losses
  - Varies with Air Temperature and Altitude
- Taurus 60 at 152 M (500 ft.) Elevation, Typical Losses
  - 5367 kWe @ 4.4° C (40° F)
  - 4345 kWe @ 32° C (90° F)
- Taurus 60 at 457M (1500 ft.) Elevation, Typical Losses
  - 5165 kWe @ 4.4° C (40° F)
  - 4182 kWe @ 32° C (90° F)



# XQ5200 Performance 50 Hz

## *“Taurus™ 60 Industrial Gas Turbine”*

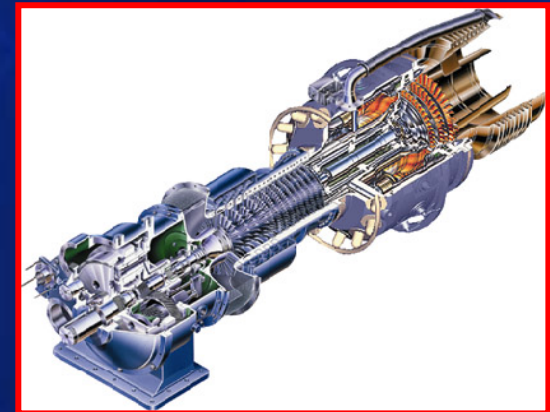
- ISO Conditions (4,900MWe)
  - 15° C (59° F) Sea Level, 0 Inlet/Exhaust Losses
  - Varies with Air Temperature and Altitude
- Taurus 60 at 152 M (500 ft.) Elevation, Typical Losses
  - 4,900 kWe @ 4.4° C (40° F)
  - 4345 kWe @ 32° C (90° F)
- Taurus 60 at 457M (1500 ft.) Elevation, Typical Losses
  - 5165 kWe @ 4.4° C (40° F)
  - 4182 kWe @ 32° C (90° F)



# XQ5200 Emissions

*"SoLoNOx™ Dry Low NOx Combustion System"*  
Natural Gas

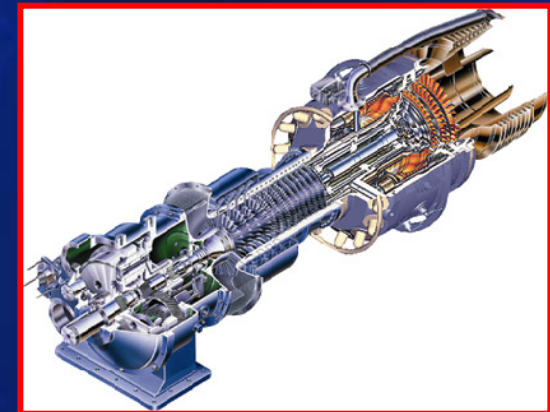
- **NOx: 25 ppmv**
  - 0.5 kg (1.1 lb.)/MW-hr
  - 0.36 g/bhp-hr
  - 2.64 kg (5.84 lb.)/hr
- **CO: 50 ppmv**
  - 0.62 kg (1.37 lb.)/MW-hr
  - 0.44 g/bhp-hr
  - 3.22 kg (7.11 lb.)/hr
- **UHC (Unburned Hydrocarbons): 25 ppmv**



# XQ5200 Emissions

*"SoLoNOx™ Dry Low NOx Combustion System"*  
Distillate Fuel (Diesel, Kerosene)

- **NOx: 96 ppmv**
  - 2.0 kg (4.4 lb.)/MW-hr
  - 1.49 g/bhp-hr
  - 10.3 kg (22.76 lb.)/hr
- **CO: 50 ppmv**
  - 0.62 kg (1.37 lb.)/MW-hr
  - 0.44 g/bhp-hr
  - 3.22 kg (7.11 lb.)/hr
- **UHC (Unburned Hydrocarbons): 25 ppmv**



# XQ5200 Product Features

- Proven Taurus 60™  
Gas Turbine
  - Over 1,400 Units Sold
  - Designed for  
Unmanned Operation
- 60/50 Hz Configuration
  - CSA/NRTLc Certification (US)



## XQ5200 Product Features (cont')

- Natural Gas or Diesel
- Low Profile
  - 7.3M (24 ft.) Stack Height
- Sound Attenuation Package
- No Concrete Foundations Required
  - 18M (60 ft.) x 9M (30 ft.) Area for Each 5.2 MW System



## XQ5200 Product Features (cont')

- Highway Transportable
- Turbine Generator Trailer & 2-Axle Booster Unit
  - 18.9M (62 ft.)
  - Weight: 57MT (125,000 lbs.)
- Power Control Room Trailer
  - 14M (46 ft.)
  - Weight: 25MT (55,000 lbs.)
- Shipped Loose
  - Step deck or 12.2M (40 ft.) High Cube
  - 8.2MT (18,000 lbs.)
- Designed for All U.S. States and Canadian Provinces

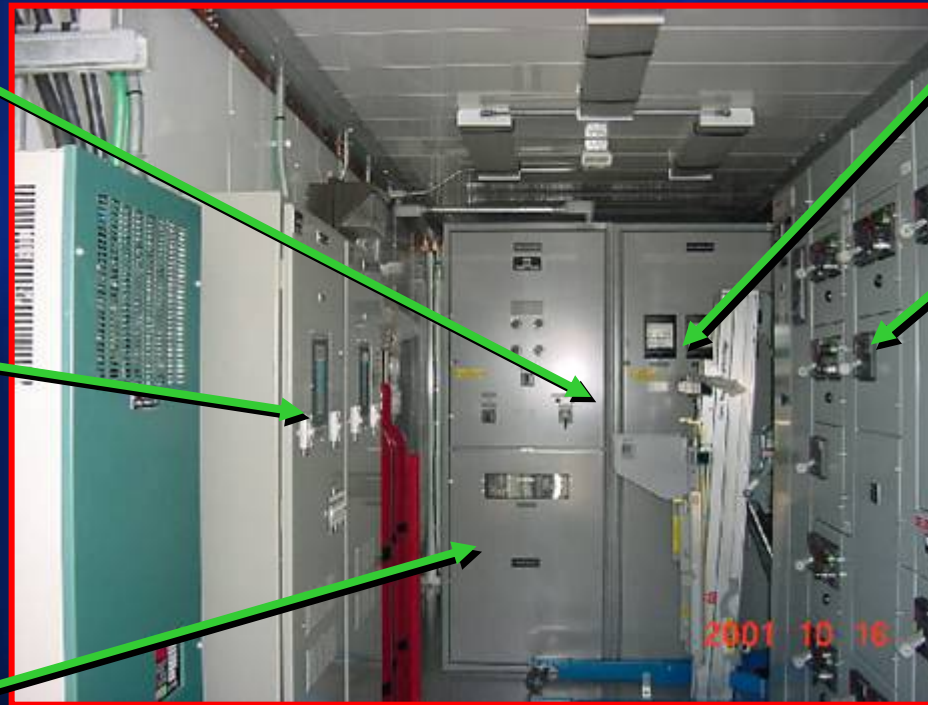


# XQ5200 Product Features (cont')

Metal-Clad  
15Kv  
Switchgear

Turbine &  
Switchgear  
Battery  
Systems

Beckwith  
Programmable  
Protective  
Relay Module



Step-down transformer &  
Neutral Grounding  
Resistor

Basler Over  
Current Relays

400 or 480  
Volt Motor  
Control  
Center

Generator  
Voltage:  
11,000 or  
13,800 Class F  
Insulation/  
Class F  
Temperature  
Rise

## XQ5200 Product Features (cont')



PLC Control System  
(Turbine and Generator)

- Auto Synch
- Voltage Adjust
- kW Control
- KVAR/Power Factor Control

Remote Control and  
Monitoring:

- SCADA Supervisory Interface  
(RS232C/422)
- Remote Dial-up (Modem)



# XQ5200 Installation Requirements

- Minimum Soil Loading  
12.2MT/M2 (2,500 lb./ft<sup>2</sup>)  
Flat and Level Surface
- Gas Supply  
1725- 2068 KPAG (240-300 psig) Gas Supply
- Connections for Medium Voltage  
Other Loads Are Fed Internally From 11 or 13.8 kV Aux. Transformer
- Grounding to Grid



# XQ5200 Installation Requirements (cont')

- Small Drain Tank, 70 L (20 gal.)
- Crane with Lifting Capability of 2.5MT (5,500 lbs.)
- Installation and Commissioning
  - 3 Man Crew to Install
  - Standard Hand Tools
  - 5-7 Days to Commission
- Input Signal From Utility Tie Breaker
  - Island Mode Operation



# Operations and Service

## *Maintenance and Operation*

- Rental Rate Covers all Maintenance, inspections and Failure Repair.
- Routine Daily Maintenance by End User or Peterson Operators (if provided)
- Typical Overhaul Interval is 30,000 Hours
- Overhaul by Exchange of Entire Turbine
- Limited Field Maintenance, 2 Inspections/Year



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*Solving Power Problems Now*

*Thank you!*