Electrification Solutions For Reducing Gas Flaring
October 2015
Agenda

• Gas Turbine Overview
• Solar Gas Turbines Products & Markets
• Power Generation Applications
• Solutions for Reducing Gas Flaring
• Total Lifecycle Support
• Summary
Solar Turbines Incorporated

- World’s Largest Manufacturer of Industrial Gas Turbines (1 to 22 MW)
- Over 15,000 Gas Turbines Sold
- Over 6,000 Gas Compressors Sold
- Installations in over 100 Countries
- Direct End-to-End Sales & Service
- More than 2 Billion Fleet Operating Hours
- Global Workforce ~ 8,000 Employees
- 48 Sales & Service Locations
- 70% of Products are Exported
- Based in San Diego, California, U.S.A.
- Subsidiary of Caterpillar Inc. Since 1981
Gas Turbine Overview
Solar Gas Turbine Families

**Saturn 20**
1590 hp/1210 kWe
(Over 5040 Units)

**Centaur 40 & 50**
4700-6130 hp
3515-4600 kWE
(Over 3660 Units)

**Taurus 60**
7700 hp/5670 kWe
(Over 1960 Units)

**Taurus 70**
10,915 hp / 7965 kWe
(Over 800 Units)

**Mars 90 & 100**
13,220 – 15,900 hp
9450 – 11,350 kWe
(Over 1300 Units)

**Titan 130**
20,500 hp / 15,000 kWe
(Over 820 Units)

**Titan 250**
30,000 hp / 21,745 kWe
(Over 40 Units and Growing)
Complete Package Systems

- Saturn 20
- Centaur 40 and Centaur 50
- Mercury 50 and Taurus 65 - Generator Set Only
- Taurus 60 and 70
- Mars 90 and Mars 100
- Titan 130 and Titan 250
Fuel Flexibility

- **Pipeline**: Methane
- **Associated Gas**: C4+ C2+C3 Methane
- **Landfill and Digester**: CO₂ and N₂ Methane
- **Raw Natural Gas - Wellhead**: CO₂ and N₂ Methane
- **Gasified Biomass & Waste**: Carbon (CO) Hydrogen
- **Refinery**: Hydrogen C2+C3 Methane
- **Coal and Coke**: Hydrogen

**Liquid Based**

**Hydrogen Rich**
Worldwide Markets

- Oil & Gas Industry
- Industrial Power Generation
Reliable Experience in All Environments

- Arctic
- Desert
- Tropics
- Offshore Platforms
- Floating Production, Storage and Offloading Vessels
- Industrial
Power Generation Applications

- Base Load Power
- Standby Power
- Peaking Power
- Cogeneration
- Mobile Power
Products for Fast-Track Projects

Mobile Power Unit
MPU

Modular Power Plant
MPP
MPP & MPU - Complete Power Plants

- Proven Gas Turbine Technology
- SoLoNOx or Conventional
- Electrical Equipment Room
- Plug and Play Electrical and Mechanical Connections
- Auxiliary Balance of Plant Modules
Power Generation for Oil & Gas Customers

4 Taurus 60 Mobile Power Units
Iraq

22.8 MWe Mobile Power Unit
Majnoon Oil Field
Power Generation for Oil & Gas Customers

2 Taurus 60
Mobile Power Units
United States
Low Emissions
Fast Deployment
Fuel Flexibility

11.3 MWe
Dual-Fuel Mobile Power
Power for Shale Gas Plant Commissioning
Flared Coke Oven Gas for Power Generation
Flared Coke Oven Gas for Power Generation

- 42,000 Tons of coal per year displacement
- 94,000 Tons reduction of CO2 emissions
- 17,000 auto CO2 emissions
Total Lifecycle Support

- Commissioning
- Technical Support
- Machinery Management Services
- Fleet Assessment Services
- Package Refurbishment
- Controls Retrofits
- Package Upgrades
- Compressor Restage
- Overhaul
- Service Parts
- Technical Training

Solar Turbines
A Caterpillar Company
Summary

• Solar® gas turbines provide power generation solutions for gas flaring
  – environmental friendly
  – fuel flexibility

• Mobile Power Units and Modular Power Plants offer a complete power plant solution for fast track projects with minimum field risk
Thank you
Questions???