

# PROPOSAL

Presented To:

**Derwick Associates**

for

**Solar Turbine Genset Equipment**

*Prepared By*



Proposal No. 710-3313

March 11, 2010

**This document is privileged and contains confidential information intended for use only by  
Derwick.**

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## **1.0 Introduction**

ProEnergy Services (“ProEnergy”) is pleased to provide this proposal to Derwick Associates (“Derwick”) for two (2) Solar Centaur 40 Turbine Gensets.

The Solar Gensets have been engineered for very high reliability and durability as well as ease of maintenance.

## **2.0 Turbine Genset Scope of Supply**

We are offering two (2) Solar Centaur 40 Turbine Gensets which includes the following scope of supply:

### **2.1 Solar Centaur 40 Specifications and Scope**

- 3,500 kw, 9,125 btu/hp-hr
- Refurbished
- So-Lo-NOx dry low NOx system
- Configured for 60hz but can be converted to 50hz
- Axial exhaust
- Includes inlet / exhaust equipment
- Includes all drawings and documentation

### **2.2 Exclusions**

Any other equipment or service not described in our proposal is excluded.

## **3.0 Pricing**

Pricing references the scope of equipment described in this proposal:

- Two (2) Solar Centaur 40 Turbine Genset

Equipment is subject to prior sale until down payment is received.

### **3.1 Equipment Pricing**

- Two (2) Solar Centaur 40 = \$3,800,000.00 USD

### 3.2 Payment

This proposal and pricing is based upon receipt of the progress payments shown below:

- Down Payment: 10% to initiate procurement and to take the units off the market. **Non-refundable**
- Balance: Upon notice of readiness to ship.

Name: ProEnergy Services LLC

Bank: US Bank

Routing # 081000210

Account # 152305958703

Swift Code: USBKUS 44IMT (that is an “i” not a 1)

### 3.3 Taxes, Duties and Fees

No sales or use taxes have been included in this quotation. The prices quoted exclude any federal, state or local taxes or fees which may be associated with the export, import or purchase of equipment and/or services.

### 4.0 Warranty

ProEnergy will provide a one (1) year warranty on the entire gas turbine generator package and any other balance of plant equipment provided.

### 5.0 Terms & Conditions

This proposal shall be valid for thirty (30) days; provided, however, the obligation to treat this proposal as confidential, and that it cannot be shared with any third party without the prior written consent of ProEnergy shall survive.

ProEnergy and Derwick will negotiate in good faith to establish general terms and conditions that are usual and customary of the sale of used equipment.

## **6.0     Site Services**

ProEnergy would be pleased to also provide a proposal for the installation, startup and commissioning of the facility. This would include providing construction supervision as well as startup engineers for all equipment provided.

ProEnergy can also provide an experienced service representative to assist the operating personnel after the equipment goes online.

## **7.0     Follow Up**

Please contact the following person at ProEnergy for information regarding this proposal:

Omar Petit, Regional Sales Manager

[opetit@proenergyservices.com](mailto:opetit@proenergyservices.com)

Office: 660.829.5100

Cell: 660.281.8588

or

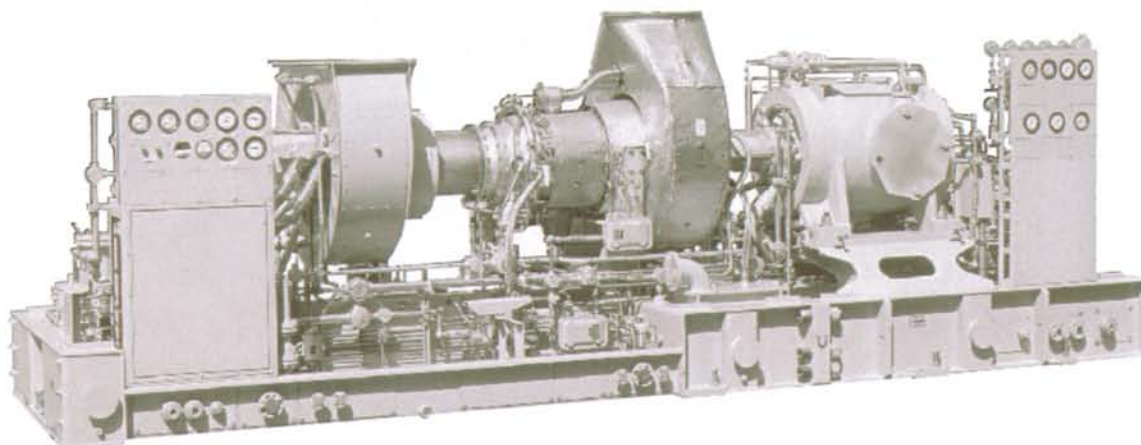
Joaquin Mavares

[jmavares@proenergyservices.com](mailto:jmavares@proenergyservices.com)

Office: 660.829-5100

Cell: 713.992.1790

**Attachment A**  
**Solar Centaur 40 Specifications**



### General Specifications

#### **Centaur® 40 Gas Turbine**

- Industrial, Two-Shaft
- Axial Compressor
  - 11-Stage
  - Variable Inlet Guide Vanes
  - Compression Ratio: 10.3:1
  - Inlet Airflow: 18.7 kg/sec (41.3 lb/sec)
  - Max. Speed: 15,000 rpm
- Combustion Chamber
  - Annular-Type
  - Conventional or Lean-Premixed, Dry, Low Emission (SoLoNOx™)
  - 10 Fuel Injectors (Conventional)
  - 12 Fuel Injectors (SoLoNOx)
  - Torch Ignitor System
- Gas Producer Turbine
  - 2-Stage, Reaction
  - Max. Speed: 14,965 rpm
- Power Turbine
  - 1-Stage, Reaction
  - Max. Speed: 15,500 rpm
- Bearings
  - Journal: Tilting-Pad
  - Thrust: Fixed Tapered Land
- Coatings
  - Compressor: Inorganic Aluminum
  - Turbine and Nozzle Blades: Precious Metal Diffusion Aluminide
- Velocity Vibration Transducer

### Key Package Features

- Driver Skid with Drip Pans
- Driven Equipment Skid
  - Compressor
  - Compressor Auxiliary Systems
- 316L Stainless Steel Piping  $\leq 4$ " dia
- Compression-Type Tube Fittings
- Electrical System Options
  - NEC, Class 1, Group D, Div 1
  - CENELEC, Zone 1
- *Turbotronic™* Microprocessor Control System
  - Freestanding Control Console
  - Color Video Display
  - Vibration Monitoring
- Control Options
  - 24-VDC Control Battery/Charger System
  - Package Temperature Monitoring
  - Serial Link Supervisory Interface
  - Turbine Performance Map
  - Compressor Performance Map
  - Historical Displays
  - Printer/Logger
  - Predictive Emissions Monitoring
  - Process Controls
  - Compressor Anti-Surge Control
  - Field Programming
- Start Systems
  - Pneumatic
  - Direct-Drive AC
- Fuel Systems
  - Natural Gas
  - Alternate Fuels
- Integrated Lube Oil System
  - Turbine-Driven Accessories
- Oil System Options
  - Oil Cooler
  - Oil Heater
  - Tank Vent Separator
  - Flame Trap
- Axial Compressor Cleaning Systems
  - On-Crank
  - On-Crank/On-Line
  - Stationary Cleaning Tank
  - Portable Cleaning Tank
- Gearbox (if applicable)
  - Speed Increases
  - Speed Decreasers
- Air Inlet and Exhaust System Options
- Enclosure and Associated Options
- Factory Testing of Turbine and Package
- Documentation
  - Drawings
  - Quality Control Data Book
  - Inspection and Test Plan
  - Test Reports
  - Operation and Maintenance Manuals



# Solar Turbines

A Caterpillar Company

## CENTAUR 40

### Gas Turbine Compressor Set

Oil & Gas Applications

#### Performance

|               |                                      |
|---------------|--------------------------------------|
| Output Power  | 3500 kW<br>(4700hp)                  |
| Heat Rate     | 12 905 kJ/kW-hr<br>(9,125 Btu/hp-hr) |
| Exhaust Flow  | 68 185 kg/hr<br>(150,320 lb/hr)      |
| Exhaust Temp. | 445°C<br>(835°F)                     |

Nominal Rating – per ISO  
At 15°C (59°F), at sea level

No inlet/exhaust losses

Relative humidity 60%

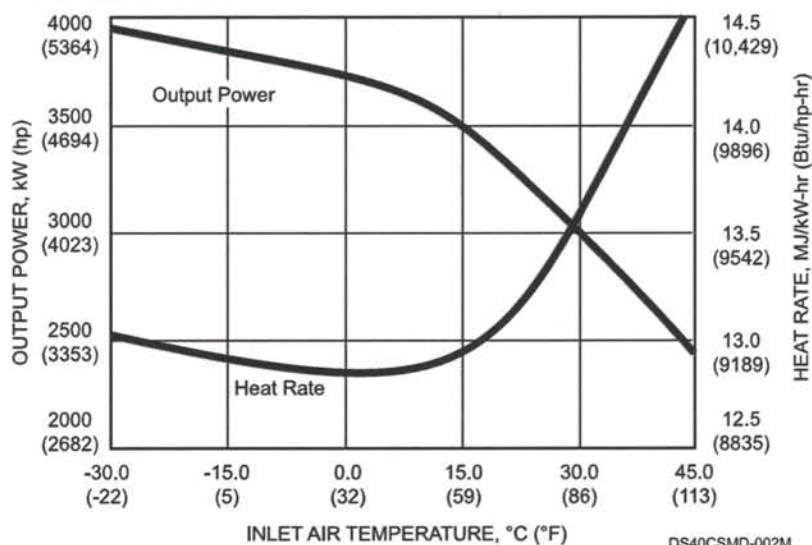
Natural gas fuel with  
LHV = 35 MJ/nm<sup>3</sup> (940 Btu/scf)

Optimum power turbine speed

AC-driven accessories

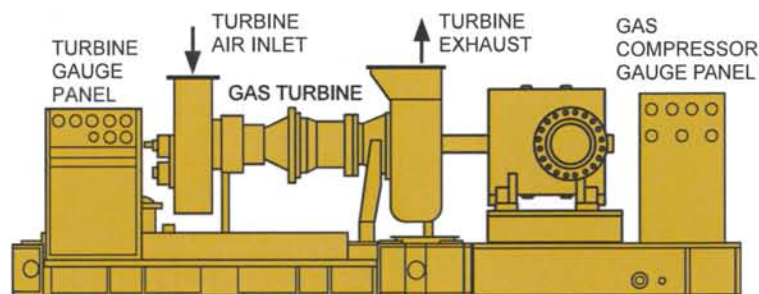
Engine efficiency: 27.9%

#### Available Power



#### Package Dimensions

|                 |                       |
|-----------------|-----------------------|
| Length:         | 8.9 m (23' 3")        |
| Width:          | 2.4 m (8' 0")         |
| Height:         | 2.7 m (8' 11")        |
| Typical Weight: | 24 950 kg (55,000 lb) |



DS40CS-003M





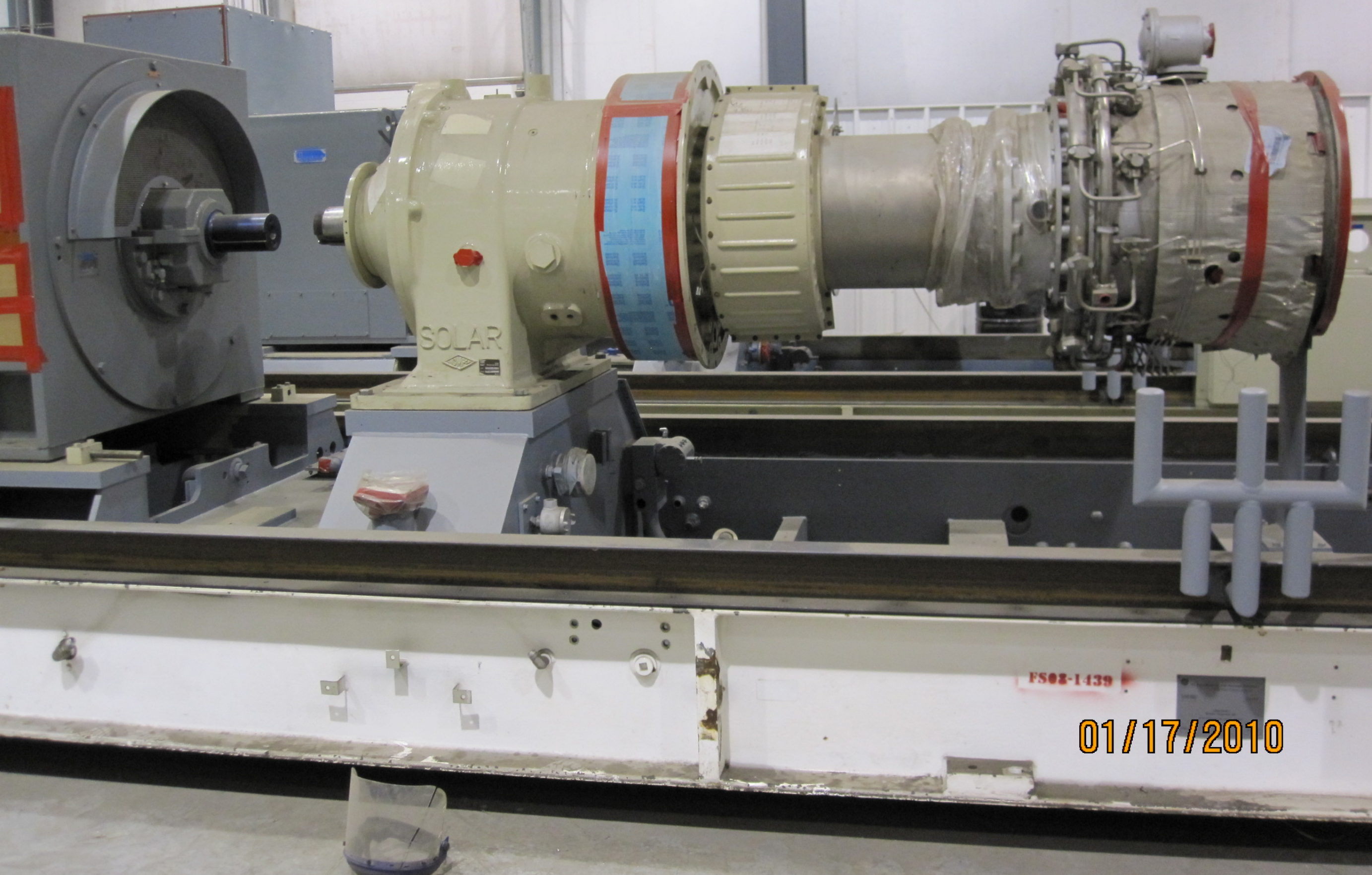
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