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December 16, 2008

Derwick Associates  
157 Hampton Point Dr.  
Suite #4  
St. Augustine, FL 32092

Subject: Proposal for 2 X LM2500

Attention: Neil Karr

Dear Neil:

Proenergy Services is pleased to provide this proposal to your company for two (2) GE LM2500PE gas Turbines.

The GE LM2500PE is a highly reliable, mid-size packaged power plant developed for either 50 or 60Hertz applications, with design emphasis placed on energy efficiency availability, performance and maintainability. The GE LM2500PE design is proven technology with more than 400 units of its class in service. We believe the superior performance of the GE LM2500PE makes it ideally suited to meet your project needs.

The attached Technical Proposal is in response with your request. It describes what will be supplied by ProEnergy. Our overall objective of is to provide the best equipment available as well as our full line of services. ProEnergy will also provide Technical Proposal Drawings, Process Flow Diagrams and Electrical One Lines,

In this offering Proenergy Services proposes to supply two (2) GE LM2500PE, 60 Hertz units for installation and operation in simple cycle service.

This equipment will be reconditioned with new wiring and instrumentation; each package will have an upgraded control system to ensure the reliability of the unit.

Our price includes a (12) month warranty on all equipment supplied by ProEnergy as well as an experienced technical representative on call in Venezuela during the warranty period.

Our pricing is valid for 30 days and the major equipment offered in this proposal is subject to prior sale

ProEnergy EPC Services appreciates the opportunity to submit this proposal and looks forward to the receipt of an expression of interest from you. Please feel free to contact

me at (713) 992 170 if you have questions in regard to this proposal or need more information.

Thank you for your consideration.



Joaquin S. Mavares  
Director of International Sales  
ProEnergy Services

## Confidentiality

This Proposal is submitted in confidence for evaluation by Buyer. Its contents are proprietary to Seller. By taking receipt of this Proposal, Buyer agrees not to reveal its contents in whole or in part beyond those persons in its own organization necessary to properly evaluate this Proposal or to perform any resulting contract. Buyer shall not reveal the contents of this Proposal to a third party or make copies of this Proposal without the prior written consent of Seller. Buyer shall return this entire Proposal to the undersigned, if Buyer does not accept this Proposal.

## • GAS TURBINE GENERATOR SET SCOPE OF SUPPLY

We are offering two (2) refurbished dual fueled LM2500PE gas turbines generator set ISO Rated at 22 MW which includes the following scope of supply:

- LM2500PE Water injected gas turbine completely overhauled and configured for both natural gas and liquid fuel operation.
- Coupling for direct drive at 3600 rpm, 60hz operation
- Weatherproof acoustic enclosure for gas turbine and electric generator
- "Single lift" I beam base plate to support turbine and 23.4 MW Brush generator (13.8KV)
- New Air inlet filtration system for GT combustion air, generator cooling air and compartment ventilation systems.
- Turbine exhaust system including industrial grade silencer and stack
- Separate lube oil systems for turbine and generator including fin-fan coolers
- Electro hydraulic starting system
- Fire detection and extinguishing system
- New or Refurbished Electronic control panel for gas turbine & generator including 24v control batteries and charger
- Gas turbine water wash system
- Neutral and line side cubicles mounted including CT's and lightning arrestors (Proenergy Services electrical scope ends at these cubicles)
- One modular control room with Turbine Control Panel, Generator Control Panel, GTG MCC's, batteries and chargers.

## II. PRICING OF EQUIPMENT

### A. FIRM PRICE

The price quoted is not subject to escalation or adjustment if a purchase commitment is received and accepted by Proenergy Services prior to December 19, 2008. Equipment is subject to prior sale.

### B. TAXES, DUTIES, FEES

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

### C. PRICE

Pricing references the scope of equipment and service work described in this proposal:

- Two (2) each GE LM 2500 gas turbine generator\*
- New GT Controls
- Overhauled & Tested Gas Turbine to GE Standards

#### Equipment Price:

- \$9,500,000 USD Each
- \$19,000,000 USD Total

### D. PAYMENT

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

Down Payment: Before Dec 19 of US \$ 3,000,000 to initiate procurement for refurbishment and to take units off the market. **Non-refundable**  
Balance of US \$16,000,000 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 an 1)

E. SCHEDULE

Proenergy Services expects to prepare the equipment for shipment FOB Sedalia, Mo as follow:

- Unit k-101      Delivery by Feb 27, 2008
- Unit k-201      Delivery by March 30, 2008

F. GENERAL TERMS AND CONDITIONS OF SALE

Proenergy Services and purchaser will negotiate in good faith to establish general terms and conditions for sale that are usual and customary for the sale of used equipment.

H. WARRANTY

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

I. SITE SERVICES

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

Proenergy Services can also provide an experienced service representative to assist the operating personnel during the first (2) months after the Equipment goes online.

## J. EXCLUSIONS

Proenergy has excluded the items listed below from our offering. Any other equipment or service not described in our written proposal is also excluded.

- Balance of plant and energy optimization controls
- Building, foundations, anchor bolts, embedments and grouting
- Bus bars and bus duct beyond generator lineside and neutral enclosures
- Distributed plant control
- Filter house support structure, other than standard
- Field Supervision
- Fuel, fluids and chemicals
- Fuel storage tanks, forwarding equipment and primary fuel filter
- Gas compression, filtration, and separation or regulation equipment
- High voltage transformer(s), cables, switchgear and associated equipment
- Interconnecting piping, conduit, and wiring between equipment modules (site layout is unknown at this time)
- Plant utilities
- Power plant calibration tools and ordinary hand tools
- Spare parts (quoted separately)
- Transportation to job site and off loading of equipment
- Water injection pressurization equipment
- Water treatment and purification equipment
- Yard light and fences

## **BASIC (Typical) SCOPE OF SUPPLY**

### **Gas Turbine**

General Electric LM2500 - PE-MG gas turbine, ISO rated at 31,235 HP for continuous duty, with a heat rate of 6772 Btu/HP-hr (LHV). Suitable for base load or peaking, designed for simple cycle, combined cycle or cogeneration service. Turbine is shock mounted and shipped in position, ready to run. Turbine is complete with "last chance" inlet screen and bellmouth seal for protection against foreign object damage.

### **Generator**

Air-cooled generator B.E.M. Model 167ESS (or equal) with brushless excitation, suitable for Class 1, Group D, Division 2 areas, rated at 35,412 KVA @ 0.85 pf, 59°F cooling air, 13,800 volts, 60 Hz. The generator can handle the full continuous power of the gas turbine at any ambient temperature throughout the operating range. Filtered air from the inlet air filter is used to cool the generator. A cooling water loop and its associated fans and pumps are not required. The generator is a utility grade, 2-pole, synchronous design and includes a brushless excitation system with permanent magnet generator. Neutral and lineside cubicles and voltage regulator are also included.

### **Coupling**

The LM2500 gas turbine drives the generator with a dry, flexible-diaphragm coupling that bolts directly to the forged generator hub and the turbine output hub. No gearbox is required. The coupling transmits the full turbine load torque at all operation conditions. The coupling spacer is removed for shipment and is re-installed at the jobsite by Proenergy.

### **Enclosure**

Both gas turbine and generator are fully covered by a weatherproof acoustic enclosure. The enclosure is completely assembled and mounted over the equipment prior to testing and shipment. Both turbine and generator compartments are fully ventilated with redundant fans. Explosion-proof AC lighting and DC emergency lighting are provided in both compartments. A bridge crane in the turbine enclosure simplifies engine removal and maintenance.

### **Baseplate**

Full length I-beams are used to support the gas turbine, generator, and air inlet system. This provides single lift capability for the total equipment package.

Dowelling of baseplate sections in the field is not required. Lifting spools are incorporated in the baseplate design. A spreader bar and rigging are provided at no charge if returned prepaid to Proenergy within 8 weeks of shipment. The rigidity of the baseplate is suitable for UBC earthquake Zone 4 installations.

## **Inlet Air System**

Proenergy furnishes a modular, multi-stage filtration system consisting of weatherhoods and inlet screens, a pre-filter and a final barrier filter. All air for ventilation systems is filtered to the same level as turbine combustion air. Optional anti-ice system, evaporative cooling system and combustion air heating or chilling system are available. Filtered air is silenced before entering the turbine plenum. This compact arrangement eliminates the need for customer-supplied inlet ducting when the standard design is utilized. Internal lighting of the filter house is provided for inspection and service. Internal and external ladders and platforms for servicing the filter are included.

## **Exhaust System**

The LM2500 package includes a thermally insulated exhaust collector to direct the turbine exhaust gases to an 80"h x 55"w rectangular flange in the side of the main enclosure. Customer furnished expansion joint, ducting; ducting supports and mounting hardware are required for heat recovery applications. For simple cycle, an exhaust silencer assembly may be ordered as an option. Right-hand exhaust, as viewed from the exciter end, is standard. Left-hand exhaust may be ordered as an option.

## **Piping System**

Stainless Steel throughout. Lube Oil, Water and Fuel piping and fittings are Type 304 Stainless Steel. Steam piping and fittings are Type 321 Stainless Steel, and all piping is fabricated in accordance with ANSI B31.1 Power Piping Code requirements. Pipe spools are hydrostatically tested at 1.5 time's maximum working pressure. Fuel, steam and high pressure hydraulic piping welds are 100% x-ray inspected. Lube oil piping welds are randomly x-rayed. Turbine and Generator Lube Oil Reservoirs are Type 304 Stainless Steel. The pressure vessels on the turbine baseplate (Water Wash Tanks, Generator Lube Oil Rundown Tanks) are also Type 304 Stainless Steel and are ASME Code stamped.

## **Fuel System**

A natural gas fuel system using an electronically controlled fuel-metering valve is supplied in the basic package. For full-load operation, the gaseous fuel must be supplied to the baseplate at 375 psig  $\pm$  20 psig (lower starting pressures available

Liquid fuel or dual fuel systems are available as factory options. Fuel specifications are included in Section 12. All necessary shutoff valves, piping and instruments between the baseplate connection and the engine are included.

## **Lube Oil Systems**

Two systems - mineral oil for the generator, synthetic oil for the gas turbine. Each lube oil system includes duplex full-flow filters, stainless steel piping and reservoirs and stainless steel trimmed valves. The oil from both systems is cooled by dual-core fin-fan coolers mounted on the enclosure roof. All interconnecting piping is included. The coolers are 100% redundant and either can handle the cooling load. The full-flow oil filters can be serviced during operation. An optional water-cooled design is available utilizing duplex shell and tube coolers for customer installation on a separate foundation.

## **Electro-Hydraulic Starting Module**

Rotates turbine for starting and water washing. The starting system includes a 200 HP electric motor, hydraulic pump, filters, cooler and controls mounted on a separate baseplate. The pump powers a hydraulic starting motor mounted on the turbine auxiliary gearbox. Customer furnishes interconnecting hydraulic piping between hydraulic start module and rotating equipment module.

## **Digital Control System**

The Proenergy control system provides operating, safety and sequencing controls for the gas turbine and generator. The unit panel is suitable for mounting indoors in a non-hazardous, air-conditioned control room. The panel contains a Woodward programmable, microprocessor-based controller for fuel management and sequencing. Also included are a Bently-Nevada vibration monitor, a manual/auto voltage regulator, a color CRT, and meters and switches for starting, synchronizing, and loading. CRT annunciates alarms and shutdowns, status, analog valves (pressure, temp. etc.), with RS-232 interface to customer DCS. Baseplate mounted equipment includes pressure, level, flow, speed and temperature sensors, plus valves and actuators. 24V DC Nickel-Cadmium batteries and dual battery chargers for control system power are included.

## **Fire Protection System**

The fire and gas detection and extinguishing system includes optical flame detection, hydrocarbon sensing and thermal detectors; complete with factory installed piping and nozzles in both generator and engine compartments. The fire protection system includes cylinders of CO<sub>2</sub> extinguishant mounted on the side of the generator set enclosure. Proenergy furnishes a dedicated 24V DC battery and

charger to power the fire protection system. Fire system alarms and shutdowns are annunciated at the turbine control panel. An alarm sounds at the turbine enclosure and unit control panel if the gas detectors sense high gas levels, or if the system is preparing to release the extinguishant. When activated, the primary extinguishant cylinders discharge into both the turbine and generator compartments via multiple nozzles, and ventilation dampers close automatically. After a time delay, the reserve supply of extinguishant is discharged, if required.

## **"On Line" Cleaning and Soak Wash System**

For baseload application, an "on-line" cleaning system is included which allow customers to clean the compressor section of the engine during full power operation. The same system reservoir and piping are utilized for off-line soak washing. Baseplate connections are provided for customer supplied purified water at 15-85 psig and air at 85-120 psig filtered to 20 microns.

## **Component Testing and Package Full Load Test**

The generator is tested to IEEE 115 or IEC 34.3 standards at its factory of manufacture. The gas turbine is performance tested at the G.E. Aircraft Division factory. The entire assembled generator set is then tested at Proenergy' factory to verify performance guarantees. A full KW load string test of the turbine generator set is performed using the contract controls and auxiliary systems. Water and steam systems are functionally proven but normally not operated during the full load test.

## **Drawings, Documentation and Manuals**

The basic equipment package is supplied with a customer drawing package, which includes general arrangement drawings, flow and instrument diagrams, electrical one-line drawings and a conduit interconnection plan. Additional electrical interconnect and logic drawings are provided for record. Maintenance manuals are provided, printed in the English language, using standard English engineering units. The manuals cover operating concepts for power generating equipment, guides to troubleshooting, and basic information on components and equipment within the turbine generator set.

## **Training (Optional)**

Hands-on training for 10 customer's operators and supervisors. Experienced instructors, using specially developed training materials, provide a firm groundwork of basic theory, plus advanced concepts with classroom and hands-on training.

## LM 2500 PERFORMANCE RATINGS

# 60

Hertz

## LM GAS TURBINE GENERATOR SETS PERFORMANCE RATINGS

	Base, KW(e)	Btu/kWh, Lhv(kJ/kWh)		No. Shafts	Turbine Shaft Speed, rpm	Exhaust Flow, lb/sec (kg/sec)		Exhaust Gas Temp. °F (°C)	
LM1600	13,794	9,593	(10,121)	3	7,000	100.0	(45.4)	909	(487)
LM2500	21,960	9,550	(10,075)	2	3,000	148.0	(67.1)	1,008	(542)
LM2500+	28,540	9,150	(9,653)	2	3,000	188.0	(85.3)	969	(520)
LM2500 STIG 50	27,020	8,620	(9,094)	2	3,000	168.0	(76.2)	941	(505)
LM5000	34,500	9,290	(9,801)	3	3,000	275.0	(124.7)	811	(433)
LM5000 STIG 80	46,360	8,340	(8,799)	3	3,000	330.0	(149.7)	767	(408)
LM5000 STIG 120	49,600	8,110	(8,556)	3	3,000	344.0	(156.0)	752	(400)
LM6000	43,076	8,247	(8,701)	2	3,600	279.0	(127.0)	842	(450)

Specifications subject to change without notice.

Ratings at 59°F (15°C), sea level, no inlet/exhaust losses, natural gas fuel.

Includes Generator and Gearbox losses.