

# **PURCHASE SPECIFICATIONS**

**FOR**

## **THREE (3) LOW HOUR PRATT & WHITNEY POWER SYSTEMS' 60MW FT8-3 SWIFTPAC GAS TURBINE PACKAGES**



ITEM NO. CTG~GT2F-0416



## OVERVIEW

Thank you for your inquiry and interest in [CTG Power Systems International, Inc. \(CTG\)](http://www.CTGPowerSystems.com). CTG is one of the world's leading, privately held heavy power generation equipment sales and energy services companies. Established in 1996, with its corporate headquarters located in Tampa Florida, CTG has become a longstanding and trusted global provider of new, used and refurbished heavy electrical power generation equipment. We also offer renewable energy equipment solutions according to each customer's exact specification through our affiliate company, The Renewable Technologies Corporation. CTG's core business model provides value added new, used and refurbished power equipment solutions, including engineering, financing, project management and technical support services to domestic and international electrical utility companies, power developers, private industry and contractors.

Learn more about our services and equipment offerings at: [www.CTGPowerSystems.com](http://www.CTGPowerSystems.com).

Please do not hesitate to call us at: +1 (813) 920-3500 or Email us at: [Info@CTGPowerSystems.com](mailto:Info@CTGPowerSystems.com) with any questions or inquiries you may have.

## THIS OFFERING

This section provides the general description, scope of supply, and supplementary requirements for equipment, materials, and services included with these **THREE (3) SURPLUS LOW HOUR PRATT & WHITNEY POWER SYSTEMS' 60MW FT8-3 SWIFTPAC GAS TURBINE PACKAGES bearing Item No. CTG~GT2F-0416**. In general, American standard specifications are quoted throughout this prospectus and subsequent contract documents.

**Disclaimer:** All surplus assets offered for sale are offered "As Is," "Where Is," with no returns and without recourse against CTG Power Systems International, Inc. ("CTG") unless otherwise noted in the offering and the final contract purchase sale agreement.

No guarantee, warranty or other representation is either expressed or implied unless specifically noted in the offering documents as to the working condition of said property; and no claims will be considered for damages or missing parts not reported in the sales listing.

It is incumbent upon the buyer to thoroughly inspect the equipment being offered and determine its condition, maintenance history and suitability for its use or application. This document and all information contained herein is the confidential and proprietary information of CTG. Any unauthorized review, use, disclosure, copying or distribution is prohibited. This document may not be disclosed to others without the express written permission from CTG Power Systems International, Inc. This document may not be used or reproduced except in rendering services to CTG. This notice shall appear on any reproduction, in whole or in part, of this document. © CTG Power Systems International, Inc.



## **THREE (3) LOW HOUR PRATT & WHITNEY POWER SYSTEMS' 60MW FT8-3 SWIFTPAC GAS TURBINE PACKAGES**

### **History:**

In response to an energy deficit in the region several years ago, company had established two reserve power plants. The plant was never called into service. A new transmission line finalized in 2016 solved the energy deficit. The need for reserve power is no longer present. Company has decommissioned the plants and CTG is now initiating a sales process on behalf of the ownership. The plant is in excellent functional and physical condition.

### **Scope of Supply:**

Pratt & Whitney SwiftPac Power plant consisting of:

- 3 Pratt & Whitney Power Systems 60 MW FT8-3 SwiftPac dual fuel (gas/diesel) turbine packages
- 2 x water treatment facilities for demineralization of injection water (water is injected to
- reduce NOx-emissions from 176 ppm to 25 ppm/diesel: to 42 ppm)
- Step up transformer 11,5/132 kV 160 MVA
- Switchgear 11.5 kV / auxiliary equipment

The Plant was delivered and maintained by PW Power Systems (PWPS - formerly Pratt & Whitney ®) a subsidiary of Mitsubishi Heavy Industries Ltd. (MHI), and had provided emergency power capacity since 2008, but had only operated for less than four hundred hours - for maintenance purposes – only. Reference Addendum A

For all intents and purposes, the plant components are in like new condition and exceptionally well maintained. For more information regarding the SwiftPac and the sales process, please

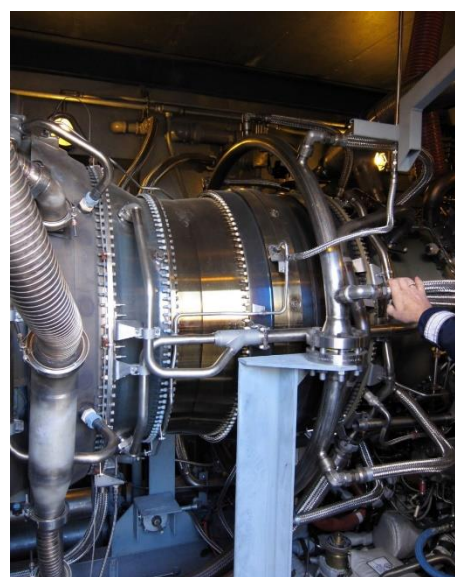
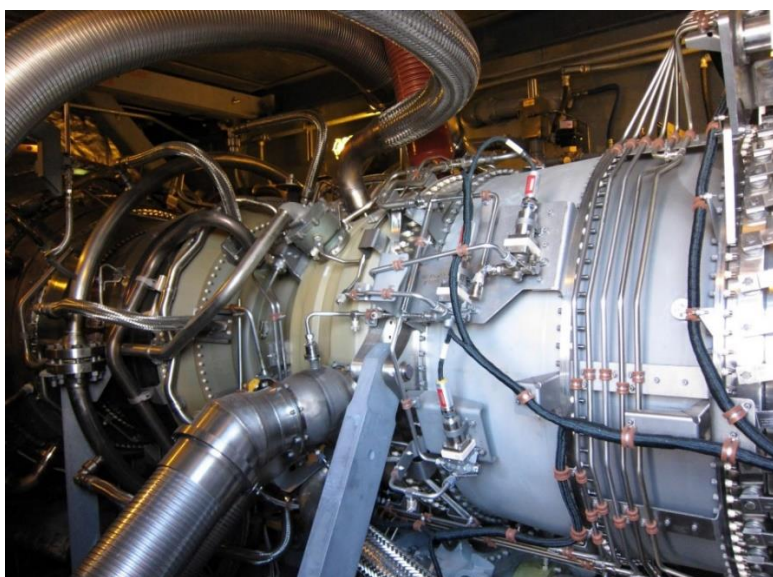
**CTG Power Systems International, Inc.**

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**Website: <http://www.CTGPowerSystems.com>**







## **EXCLUSIONS, EXCEPTIONS AND ASSUMPTIONS**

- Dismantling, Matchmarking Packing and Prep for Transport
- Civil engineering design of any kind (CTG will provide GTG related input data for civil engineering design)
- Plant hazardous area classification drawing and report (CTG will provide GTG related input data for hazardous area classification design)
- Plot plan drawing of the Power Station
- Building and civil works, if any
- Drains and/or vent piping from the gas turbine generator skid to a remote point
- Site grounding
- Lightning protection
- Feasibility and power systems study
- Balance of plant
- Plant utilities, including compressed air supply and off skid piping
- Fuel boosts compressor, if required
- Liquid fuel filtering system
- Fuel, fluids and chemicals for gas turbine generator set installation, commissioning and operation
- Generator controls other than that defined in GE scope of supply
- Load sharing control
- Balance of plant control
- Training other than that defined in the scope of supply
- Travel and Living expenses for Customer witnessing factory tests
- Third Parties Site Testing
- Any indoor or outdoor storage areas
- Provision for storage
- Generator rotor removal tool
- Any special or additional instrumentation
- Turbine Intake Chilling System
- Black Start System
- Maintenance Tools
- Transportation and Site Security
- Labor and technical assistance for the site installation, commissioning, and start-up of the Equipment
- Import duties and tariffs (port of entry and/or installation country) and any taxes associated with the sale.
- Consumable and Operational Spare Parts
- Long Term Service Agreement (LTSA) Turbine and Generator

Note: (any or all of the above scope of equipment and services to be provided under separate proposal)



All equipment is offered subject to prior sale or disposition. Written confirmation by ctg power systems international, inc. (ctg) prior to acceptance of order. All sales are subject to ctg terms and conditions, a copy of which will be provided to customer.

**Availability:** Immediately  
**Inspection:** Immediately after verification of bank references and credit  
**Warranty:** No / Equipment is Sold: "As Is/ Where Is" ( Extended Warranty is available)  
**Removal & Freight:** Buyer Responsibility; FOB EX/WORKS  
**Purchase:** Immediately  
**Delivery:** Buyer Responsibility

**PRICE:** CALL CTG

### **PAYMENT TERMS**

The following terms will secure the units immediately:

- ❖ Bank Letter Confirmation of Funds
- ❖ Irrevocable Corporate Purchase Order accompanied by a non-refundable 10% Cash Deposit ( after inspection)
- ❖ Balance of purchase funds to be placed in joint escrow account
- ❖ Final Payment Due Prior to Removal and load out.

### **TERMS AND CONDITIONS OF SALE**

#### **GENERAL**

This document together with any additional documentation signed by Seller and Buyer represents the Agreement between the parties. These terms may not be modified except in writing signed by an authorized representative of Seller. Any terms and conditions submitted in Buyer's inquiry or purchase order shall be null and void unless specifically agreed to in writing signed by an authorized representative of Seller. Catalogs, circulars and similar pamphlets of Seller are provided for general information purposes only and are not a part of the Agreement. Except as expressly contained herein no representation or warranty is made as to performance, size, durability, or other specifications of Sellers products and any information contained in catalogs, circulars and similar promotional or advertising material is for general informational purposes only.



### **TAXES/DUTIES**

Any sales, use or other similar type taxes or import or export duties imposed on this transaction are not included in the price. Such taxes and/or duties shall be billed separately to Buyer. Seller will accept a valid exemption certificate from Buyer if applicable; however, if such exemption certificate is not recognized by the governmental taxing authority involved and Seller is required to pay the tax covered by such exemption certificate, Buyer shall promptly reimburse Seller for the taxes paid.

### **EXCUSABLE DELAYS**

Seller shall not be responsible for nonperformance or delays in performance occasioned by any causes beyond Seller's reasonable control, including, but not limited to labor difficulties, delays of vendors or carriers, Seller's prompt receipt of Buyer's equipment, Seller's compliance with Buyer's change orders, fires, acts of God, war, non-governmental actions and material shortages. Any delays occasioned by such circumstances shall affect a corresponding extension of Seller's performance dates.

### **DELIVERY, TITLE AND RISK OF LOSS**

Delivery manifests and dates are approximate, and are based upon prompt receipt of approvals, receipt of equipment from Buyer or vendors (as may be appropriate), or otherwise prompt receipt of all necessary information. Unless otherwise specified by Seller, all shipments are F.O.B., Seller's facility. Full risk of loss (including transportation delays and losses) shall pass to Buyer upon delivery of products to the F.O.B. point, or if Seller consents to a delay in shipment at the request of Buyer, risk of loss shall pass to Buyer upon notification by Seller that equipment is ready for transport.

### **WARRANTY**

These Pratt & Whitney SwiftPac 60 packages are offered and sold **"As Is/Where Is"** without warranty either expressed or implied, unless specifically agreed to elsewhere and the effects of corrosion, erosion and normal wear and tear are specifically excluded and Seller will be held harmless. Seller will not be liable to Buyer for any loss or injury to persons or property (including the machinery which is the object of the work) caused in whole or in part by (1) the acts of Buyer or its agents, (2) failure to observe Seller's instructions, or (3) failure or malfunctioning of anything not furnished by Seller. The preceding paragraphs set forth the exclusive remedies for warranty claims, and upon the expiration of the warranty period, all such liability shall terminate.

### **PAYMENT TERMS**

Payment terms are as indicated in the proposal. Invoiced milestone payments are due within thirty days of invoice date. If the order is placed from outside the United States, an irrevocable letter of credit will be required, drawn on a bank acceptable to Seller for the amount of the order and in accordance with Seller's credit terms. Payment will be drawn against the letter of credit. Payment received thirty days after the invoice date is subject to interest charges at the maximum allowable rate as provided by applicable law.

### **LIMITATION OF LIABILITY**

Seller shall in no event be liable to Buyer or any successor for any consequential, incidental, or indirect damages arising out of this prospectus or any breach thereof, including but not limited to damages resulting from: loss of use, profits, revenue, interest or goodwill; work stoppage, impairment of other goods, shutdown or non-operation, increased expenses of operation; cost of purchase of replacement





power, or claims of Buyer or customers of Buyer for service interruption whether or not such loss or damage is based on contract, indemnity, tort, product or strict liability or otherwise.

**THE REMEDIES OF BUYER SET FORTH HEREIN ARE EXCLUSIVE. THE TOTAL LIABILITY OF SELLER WITH RESPECT TO THE PERFORMANCE OR BREACH OF THIS AGREEMENT WHETHER BASED ON CONTRACT, INDEMNITY, TORT, PRODUCT OR STRICT LIABILITY OR OTHERWISE, SHALL NOT EXCEED THE CONTRACT PRICE OF THE AGREEMENT OR THE PART UPON WHICH SUCH LIABILITY IS BASED.**

#### **ASSIGNMENT**

Neither party shall assign or transfer the intended LOI without the prior written consent of the other party, which shall not be unreasonably withheld.

#### **GOVERNING LAW**

The rights and obligations of the parties shall be governed by the laws of the State of Florida, excluding conflict of laws provisions



Pratt & Whitney  
Power Systems

# SWIFTPAC® 60

Gas Turbine Package

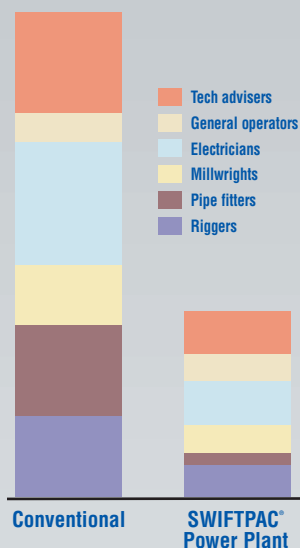
It's in our power.™



# Pratt & Whitney

**The SWIFTPAC Power Plant Provides Quick, Reliable Power. Installation Takes Less Than 30 Days.**

**Installation Labor Costs  
Typical U.S. Site**



## SWIFTPAC® Power Plant

The SWIFTPAC® gas turbine package offers 30 or 60 MW of power. Utilizing the proven Pratt & Whitney Power Systems FT8® technology, the SWIFTPAC power plant is designed to provide quick, reliable power. The package design includes an enclosed driver assembly incorporating the gas generator, power turbine, exhaust collector box, inlet plenum and lube system. These factory-assembled modules allow the SWIFTPAC power plant to generate power less than 30 days after arriving on site.

Pratt & Whitney. **It's in our power.™**

### Product Facts

#### Simple-Cycle Performance

##### Natural gas

	30 MW	60 MW
Output (kW)*	30446	61196
Heat rate*		
(BTU/kW-hr)	9312	9266
(KJ/kWh)	9825	9776
Efficiency (%)*	37	37
Exhaust flow (lb/sec)*	201	402
Exhaust temp. (°F)*	895	895
U.S. transport time	6 days	6 days
Foundation	2-3- ft. concrete	3 ft. concrete
Installation	3 weeks	3 weeks
NOx	25	25
Fuel	Dual	Dual
Frequency	50/60 HZ	50/60 HZ

\*Also available with DLN and/or inlet fogging.



### Benefits

- Best-in-class part-load efficiency
- Reduced site setup time
- Lower site cost
- Less expensive shipping
- Reduced field flushing
- Minimal field wiring terminations utilizing quick-disconnect cables
- Prefabricated piping needs no field welding
- Less site labor
- Standard and repeatable manufacturing process
- Standard and repeatable installation process
- Preassembled and tested
- Reduced field inventory
- Ease of engine checkout and maintenance
- Operating flexibility
- Ease of transportation and relocation

### Enhancements

- Factory-assembled modules
- Integrated lube oil system
- Factory-tested quick-disconnect cables
- Prefabricated field piping
- Factory-flushed lube oil systems
- Combined GT and exhaust enclosure
- Factory checkout
- Simple, flat foundation with minimal embedments
- Compact layout





# Scope of Supply *SWIFTPAC® 60 Gas Turbine Package Power Island Dual Fuel Water Injection*

## Gas Turbine Package (2)

- Gas generator (GG8-3 core engine)
- Power turbine
- Diffuser
- Collector box
- Exhaust transition
- Fabricated gas turbine base and mount assembly
- Coupling connecting power turbine and generator
- Hydraulic starting motor
- Ignition system
- Off-line compressor internal water wash system
- Lube oil system
- Fuel supply system
- Buffered air system
- Water injection NOx control system
- Gas turbine enclosure with three point jacking and leveling system
- Two-stage inlet air filter with weather protection
- Inlet silencing
- Exhaust stack
- Quick disconnect electrical interface

## Generator Package

- Brush open ventilated; air-cooled, double ended, synchronous generator or equivalent
- Brushless exciter assembly
- Stator heaters
- Neutral ground transformer/resistor
- Current transformers
- Stator RTDs
- Vibration probes
- Bearing drain RTDs
- Bearing metal RTDs
- Hot and cold air RTDs
- Rotor ground detection
- Generator lube oil system
- Enclosure
- Quick disconnect electrical interface

## Hydraulic Starting Package

### Control Enclosure with HVAC

- Operator control cabinet
- Monitoring cabinet
- Instrument cabinet
- Unit control cabinet
- Generator protective relay panel
- Motor control center
- Master terminal cabinet
- Rack-mounted, sealed, lead, acid cell batteries
- Battery chargers
- Switchgear module 15 kV class
- CTG auxiliary transformer
- FM200 fire suppression (optional)

## Field Installation Hardware

- Interconnecting piping and hoses for
  - Hydraulic start
  - Water injection
- Interconnecting quick disconnect electrical cables for power and signal.
- Foundation embedded material
- Special maintenance tools

## Owner-Supplied Services and Responsibilities

### Project and Site Development

- Adequate title and interest, permanent facility permits, construction permits and licensing
- Equipment mounting and mounting hardware
- Provisions of local communication facilities
- Temporary construction staging & secure inventory area
- Access road(s), interior roads and parking areas
- Site prep, leveling and compaction

### Engineering and Construction

- Site engineering
- Site Organization during construction
- Emissions and acoustic testing
- Worker's Compensation, employer's liability or any other local insurance required
- All supervision and craft labor for complete off-loading, inventory, inventory control, storage, erection, installation, checkout, testing and start-up of all non-PWPS supplied equipment and material
- Consumable material for erection works
- Required test prior to startup
- Construction equipment, tools and aids
- Phasing and synchronizing the generator to purchaser's system

### Other Responsibilities

- Site survey/plot plan
- Excavation for foundations, pipes, roads, cabling & grounding grid
- Site leveling
- Backfill
- Finish grading
- Surface drainage to and including any collection pond
- Oily water separator
- Sanitary waste disposal
- Plant lighting
- Plant fire protection systems-hydrants, panels and extinguishers
- Intra-communication system
- Site fencing and gates
- Construction water
- Builder's all risk insurance (BAR)

### Interface Requirements and Responsibilities

- Natural gas for start-up, testing and operation 475 psig (33 bar), approximately 4700 scfm (2.2m3/sec) per gas turbine
- Injection water for NOx control 5-50 psig (0.3-3.4 bar), approximately 25 gpm (115 L/min) per gas turbine
- Potable water for gas turbine off-line water wash 50 psig (3.4 bar) min, approximately 300 gallons (1150 liters) per gas turbine water wash at 35 gpm (133 L/min)
- Liquid fuel for start-up testing and operation 30-75 psig (2.0-5.1 bar) approximately 36 gpm (136 L/min) per gas turbine
- Electrical ground grid interconnections grounding pads are provided by PWPS on each trailer and aux skid
- Vent and drain maximum flow on oily waste drain is 35 GPM for water wash. Total waste water per wash is 300 gal.
- High-voltage power
- Control system interface/grid signals
- Alternate electrical power supply 255 kW per power island, 380V, 50 Hz, 3-phase for lighting, heating and intermittent auxiliaries

# Typical Performance

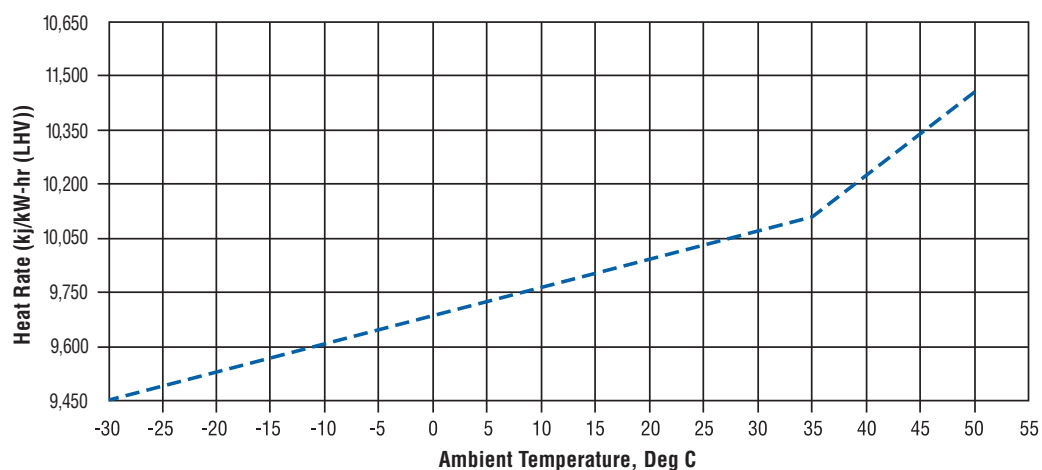
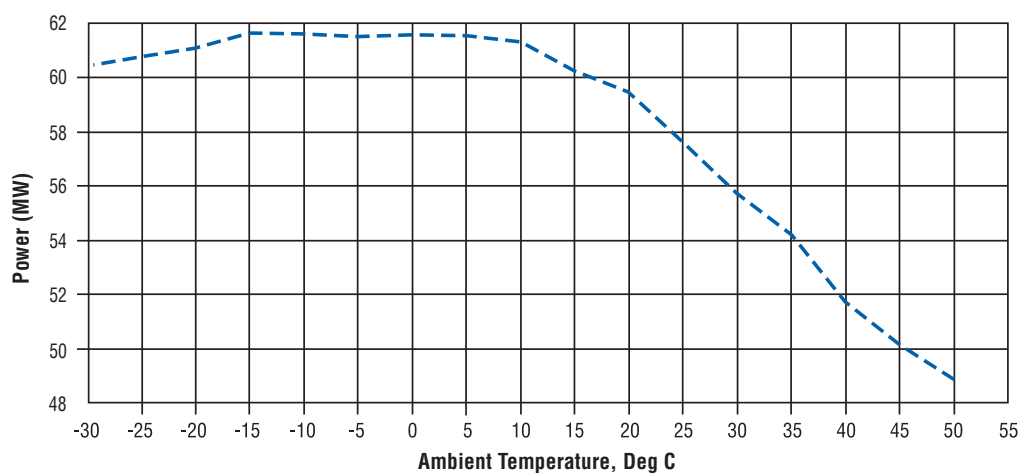
SWIFTPAC® 60 Gas Turbine  
Package 50Hz, 11.0kV, 09Pf

Estimated Gross Power Output vs  
Ambient Temperature and Heat  
Rate vs Ambient Temperature

SWIFTPAC 60 Gas Turbine  
Package, Natural Gas,  
WI - 25 ppm NOx

Sea Level, 60% RH, 63.5 mm  
W.C. Inlet Loss, 38.1 mm  
Exhaust Loss

## Gas Fuel 50 Hz Water Injected





# General Arrangement Diagram **SWIFTPAC® 60 Gas Turbine Package**

