

# Capstone & The Marketplace from a Distributor's Point of View



**E-Finity Distributed Generation** 

an authorized Capstone distributor Power to be Independent

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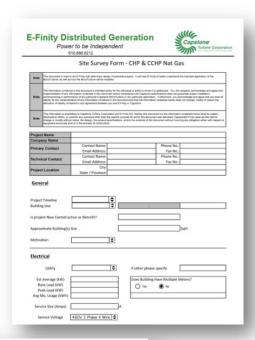
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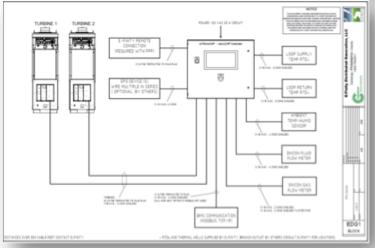
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# Who is E-Finity?



- Exclusive Mid-Atlantic and Southeastern distributor
- Microturbine and CHP education
- System sizing / Energy analysis and economics
- Application engineering support services
- Project consultation services
- Complete preventive (FPP) services
- Fleet exceeds 600+ Microturbines







# **E-Finity Office & Service Hubs**







Service Hub

Planned New Service Hub



## Capstone Microturbine





- Single stage design
- Recuperated
- Single moving part

- Air lubricated
- Air cooled
- Low emissions < 9 ppm NOx</li>

## Single Stage Turbine



- Small footprint
- Easy to install
- Zero vibration
- Very quite (65 dba @ 10 meters)
- On board gas compression
- Long life cycle (Masonic Village 17+)











# C65 & C200R





**C65 Microturbine** 



**C200R Microturbine** 



# C600S Expandable to C800S & C1000S





**C600S Power Package** 



**C800S Power Package** 







# Oil & Gas Capstone Applications



## Meeting Demand in the Industry



Capstone systems help ensure the flow of natural gas and provide a perfect fit for many different types of oil and gas sites

- Exploration
- Gathering (midstream)
- Transmission and storage
- Metering and regulation
- Water pumping
- Processing stations





## Midstream Sites



- Generate power from wellhead gas
- Low emissions
- Microturbines onsite in 4-8 weeks
- Aggressive construction schedules





## Water Pumping Sites



- Primary power for remote locations with water pumps and holding ponds
- Allows locations to be put into service quickly without waiting for an electric utility feed





## Interconnect & Metering Sites



- Primary power for remote pipeline interconnect locations with metering and gas analysis equipment
- Allows new pipeline taps
   to be placed into service quickly
   without waiting for an electric
   utility feed





## Gas Transmission & Gas Storage



- Primary power and heat for gas transmission and gas storage compression facilities with or without grid power available
- Allowing new stations to come online quickly and cleanly by replacing the local utility or diesel generation with natural gas powered generation
- Use of CHP increasing overall efficiency of the gas system







## **Well Site Locations**



- For well sites, Capstone turbines provide power to pump heavy liquids, heat trace lines, etc.
- Perfect for both manned and unmanned sites
- Capstone turbines can be fueled with wellhead gas





## **Skid Mounted Systems**



- Developed in response to customer request
- Customizable
- Pre-commissioned
- Arrives ready for fuel and electrical connections
- Multiple unit skids available











## CHP & CCHP Heat Recovery Products



## **Hot Water**



- Integrated hot water heat exchanger for all turbines
- Up to 212°F (100°C) hot water
- External heat recovery available for higher temperatures
- 400,000 to 5,000,000 million BTU's











**C1000S ICHP** 



## **Chilled Water**



- 20 to 400+ tons
- Single to triple effect
- Hot water, steam, and exhaust driven
- COP 0.7 to 2.5
- Indoor and outdoor rated
- New "well established" products in the market

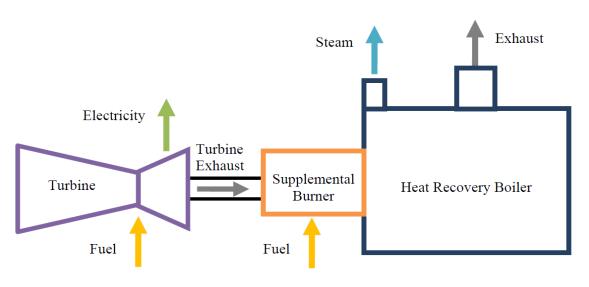




## **Steam Production**



- Heat recovery steam generators
- 3 to 500 psig
- Integrated duct burners
- Efficiencies of up to 90%
- Skid mounted











# Commercial & Industrial Capstone Applications



## **Hotel / Hospitality**



#### The Logan, Curio Collection Hotel by Hilton – Philadelphia, PA

(Formerly The Four Season's Hotel)

- 365 Room 5-Star Hotel
- Three (3) C65 ICHP microturbines
- Turbines provide hot water for heating, pool, spa, cooking, and domestic hot water



- EPA Award Winner
- Customer left Philadelphia Steam Loop
- Under a three year payback





## Office Building



#### **FMC Tower – Philadelphia, PA**

- Two (2) C65 ICHP Turbines
- 800 MBH of hot water for building
- Brandywine Realty Property

- Utilizes PGW "CHP" Gas Rate
- Microturbines were selected for LEED credits
- LEED Silver Building
- Started in February 2017





## University



#### Messiah College – Mechanicsburg, PA

- 1000 kW Power
- Trigeneration (CCHP) site
- Cain Heat Exchanger and Broad Absorption Chiller

- Provides building hot and chilled water to three buildings
- PP&L <u>net</u> metering site
- System provides backup power to Student Center





## Manufacturing



#### **Phoenix Contact – Harrisburg, PA**

- 1000 kW power
- 5,000 MBH of hot water
- 300-ton exhaust fired absorption chiller

- Backup power to the entire facility
- 3,130 tons of carbon savings per year
- Won PA Governor's Award in 2015





### **Data Center**



#### **PSECU – Harrisburg, PA**

- C800 Microturbine
- 800 kW of electricity
- Hot water and chilled water produced
- Backup power to data center in grid failure

- Payback is exceeding the original model
- System helped client achieve LEED Gold status
- Has provided backup power to site multiple times since installation









## Microgrid



#### Military Installation – Virginia

- 1000 kW power
- 5000 MBH of hot water
- M-Tim PLC Controller
- ESPC contract

- Island capable
- Produces hot water and power to 20 buildings on base
- Reduces base carbon footprint







## **Biogas Installation**



#### Sierra Nevada Brewery – North Carolina

- Two (2) CR200 Capstone Microturbines
- 250 scfm biogas and compression and removal system by Unison Solutions
- 60% methane biogas utilized from brewing process
- Low emissions
- Commissioned 2013
- Waste gas is used to generate power instead of flaring









# "Bumper to Bumper" Service Plans (FPP)



# Factory Protection Plan (FPP)



- All scheduled and unscheduled maintenance covered
- Work completed by Factory Certified Technicians
- Average of 6 hours of planned mtn/yr
- 5 / 9 / 15 / 20 year plans available



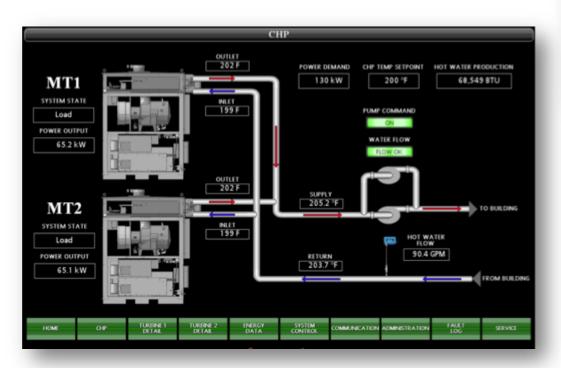


**E-Finity Service Vehicle Fleet** 

## **E-Finity Remote Monitoring**



- Included in FPP
- 24/7 Remote monitoring
- 24/7 Remote troubleshooting
- Scheduled downtime only a few hours a year









## **NASDAQ: CPST**

### www.capstoneturbine.com

