PACKAGED CHP SYSTEM PERFORMANCE SUBMITTAL FORM							
System Description							
Packaged CHP System Model Number							
Prime Mover Type	Choose Prime N	Nover Type					
Number of Prime Movers per System							
Fuel Type	Choose fuel type CNECK IT						
Remote Monitoring Capability	Yes						
Sound Power @ 3ft height and 30ft distance DbA	167				_		
System /Component	Width in feet	Length in feet	Height in feet	Weight in pounds			
Prime Mover/Generator system (Includes maintenance clearances)							
Heat Recovery subsystem if separate (Includes maintenance clearances)							
Chiller if separate (Includes maintenance clearances)							
Total System Layout (Includes maintenance clearances)							
Largest part for delivery							
Heaviest part for delivery							
Grid Interconnection							
Grid interconnection operation	Selec	tion operation n	nodes		•		
Transition Type from Grid Parallel to Grid Island and Back to Grid Parallel	Select Tran	sition Type		Explain Other	Transition Here		

Prime Mover													
Manufacturer													
Model				1									
Performance - Data required for three ambient temperatures: 0°F, 59°F, and 95°F) of	and four Prime Mo	ver Gross Power	Outputs (100%	5, 75%, 50%, and	d an Optional M	linimum Gross F	ower Output to	Highlight Lowe	st Power Outpu	t Performance	Point)		
Percent Gross Generator Output	%		100			75			50		Choose	Min Powe	er Output %
Ambient Temperature		95F	59F	0F	95F	59F	OF	95F	59F	0F	95F	59F	0F
Prime Mover Gross Power Output	kW												
Prime Mover Net Power Output (Gross minus all parasitics except fuel gas booster compressor and chiller if used)	kW												
Fuel input, HHV (based on 1,030 Btu/scf for natural gas, 2,490 Btu/scf for propane, 476 Btu/scf for land fill gas and 690 Btu/scf for digester gas)	MMBtu/hr												
Exhaust temperature (before after-treatment)	°F												
Exhaust flow rate	Scfm, or												
Exhaust now rate	lbs/sec												
Exhaust maximum available back pressure	psig												
Required fuel pressure at control valve for prime mover	psig			•	•	•	•						
Fuel Supply Pressure	psig	1	25	50	100	300	1						
Fuel Booster compressor power (if required)	kW						1						
missions Data													
/ithout After-Treatment - Certified third party emissions measurements in accorda PA test requirements. Indicate Ambient Temperature for emission test in °F	nce with latest												
Percent Gross Generator Output	%		100		75		50		Choose				
Ambient Temperature		95F	59F	0F	95F	59F	OF	95F	59F	0F	95F	59F	0F
NOx emissions	lb/MWhe												
CO emissions	lb/MWhe												
TVOC emissions	lb/MWhe												
Vith After-Treatment - Certified third party emissions measurements in accordance est requirements. Indicate Ambient Temperature for emission test in °F	with latest EPA				•		•						
After-Treatment Type	Select Aftertre	eatment Type											
Percent Gross Generator Output	%		100			75			50		Choose	Min Powe	er Output %
Ambient Temperature		95F	59F	0F	95F	59F	0F	95F	59F	0F	95F	59F	0F
NOx emissions	lb/MWhe												
CO emissions	lb/MWhe												
TVOC emissions	lb/MWhe												

Generator/Inverter			
Туре	Choose	е Туре	
Manufacturer			
Model			
Power output rating	kW		
Power output rating	kVA		
Rated voltage	V		
Rated efficiency	%		
Rated current	Amps		
Protective Relay/Switchgear			
Protective Relay Manufacturer/Model			
Synchronization Manufacturer/Model			

Heat Recovery	Thursday, and the second of th
Type of Thermal Energy Output	□ Wate □ Stea □ Chilled Water
System Availability	Water Water
System Availability	%
Certifications	
IEEE 1574 Compliant	Torreck Provide documentation if Yes
UL 1741	Provide documentation if Yes Circuit de documentation if Yes
UL 2200	Provide documentation if Yes List others help us and provide documentation.
Other	if Yor
List Other	

Energy and Emissions Conversions

Energy Conversions:

- Conversion from Btu Higher Heating Value (HHV) to Btu Lower Heating Value (LH\
- Conversion from lb/MMBtu HHV to lb/MMBtu LHV multiply by 1.099 for natural g
- HHV Natural Gas 1,030 (Btu/scf), 21,980 (Btu/lb)
- LHV Natural Gas 937 (Btu/scf), 20,000 (Btu/lb)
- 1 horsepower hour (hp-hr) = 2,545 Btu
- 1,000,000 Btu = 1 MMBtu = 392.9 hp-hr
- 1 kW = 3,413 Btu per hour (Btu/hr)
- 1 MMBtu/hr = 293 kW
- 1 kWh = 3,413 Btu
- 1 MMBtu = 293 kWh
- 0.7457 kW = 1 hp
- 1 kW = 1.341 hp

Emissions Conversions:

Combustion Turbines and Microturbines

Criteria pollutant emissions for turbines are typically presented as parts per million (pp. exhaust stack. The eCatalog is requesting emissions data in an output based format (Il common comparison among technologies and systems.

Conversion factor table for Natural Gas combustion at 15% O,

	HHV	LHV
NOx	272	248
СО	446	406
SO ₂	196	178

Conversion from ppm to lb/MWh using heat rate

$$\frac{lb}{MWh} = \frac{(ppm @ 15\% O_2) x (heat rate \frac{Btu}{kWh})}{conversion factor x 1,000}$$

Conversion from ppm to lb/MWh using efficiency

$$\frac{\mathbf{lb}}{\mathbf{MWh}} = \frac{(ppm @ 15\% O_2) x (3.413)}{conversion factor x (\% efficiency)}$$

Recip Engines

Criteria pollutant emissions for engines typically are reported as g/hp-hr. The eCatolog based format (lb per MWh) in order to facilitate a common comparison among techno engines is described in terms of percent efficiency or brake specific fuel consumption (

Conversion from BSFC to % efficiency

$$\% efficiency = \frac{2,545}{(RSFC Rtu/hp - hr)}$$

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Conversion from g/hp-hr to lb/MWh

$$\frac{\mathit{lb}}{\mathit{MWh}} = \ (\mathit{g/hp-hr}) \, \mathit{x} \, (3.11) \, (\mathit{Including} \, 95\% \, \mathit{generator} \, \mathit{efficiency})$$

