Micro-CHP ENERGY STAR Emerging Technology Specification: Version 1.0

Micro-CHP Eligible for ENERGY STAR Emerging Technology Award

Performance Characteristic	Requirements	Required Documentation
Product Performance		
NOx Emissions (Output based, includes thermal credit*)	<0.3 lb/MWh (136 gm/MWh)	Certified third party emissions measurements in accordance with established EPA testing protocols or equivalent
Overall CHP efficiency ("system efficiency")**	70% HHV	Laboratory results based on ASERTTI Laboratory Testing Protocol or equivalent
Noise	≤ 60 dB(A) at 1m	Verified measurements at 1m
Minimum warranty available (years)	Two years parts and labor on all systems	Copy of warranty agreement
Minimum runtime field testing	Verified, monitored at least 5 units for 1 year (one heating season)	Field report signed by senior management. At minimum, test report should include: test location(s); primary fuel type, measured or calculated system efficiency, thermal output, net power output, fuel input, total run hours, and availability factor***
Certification	UL 2200 (Stationary Generators); UL 1741 (Inverters, Converters, Controllers and Interconnection Equipment) or equivalents	Copy of certification case files
Additional Company Requirements		
Product Commercialization Plan	Required	Company must submit and EPA must approve a Product Commercialization Plan that includes: market size, commercialization partners, targeted applications, targeted regions, and staffing plan to support plan implementation.
Warranty, Service and Maintenance Plan	Required	Company must submit and EPA must approve a Warranty, Service and Maintenance Plan that demonstrates that sales will occur in areas that are supported by qualified installers and maintenance technicians, and/or that service plans and warranties are offered.

*Emissions rate (lb/MWh) = Mass Emissions Rate (lb/hr) / (Elecric Output (MW) + Thermal Output Recovered for Heating and/or Hot Water (MW))

** Overall CHP Efficiency = (Net CHP Electric Output + CHP Thermal Output Used)/CHP Fuel Input; all calculated in Higher Heating Value (HHV)

*** Availabiliy Factor (AF) = measures on a percent basis the unit's "could run" capability. Impacted by scheduled outage hours (SOH - system is down due to scheduled maintenenace) and Forced Outage Hours (FOH - hours when the system would be operating but is down due to mechancial/other malfunctions). AF = (Total Annual Run Hours/(Total Annual Run Hours + Forced Outage Hours)); Assumes SOH conducted during non-operating season