3 MW CHP System for Reckson Associates

A 3 MW Solar gas turbine will be installed at a commercial office building in Manhattan. The turbine will operate on natural gas and include an advar selective catalytic reduction (SCR) system.

The Contractor proposes the turnkey installation of a nominal 3 MW natural gas-fired combustion turbine (CT) cogeneration system with a heat recov steam generator to produce electricity and steam on site at Reckson Associates' 50-story office property on 919 3rd Avenue in Manhattan. Recovere heat from the CT will be used to produce 150 lb steam to offset steam currently purchased from ConEd for heating in the winter and the steam turbin driven chillers in the summer.

Electrical output from the generator will be fed through an innovative PowerDistributor™ multiple power converter system that will split the output fron the CT into multiple feeds and distributing power across the building's five metered services while meeting ConEd requirements for parallel interconnection. With PowerDistributor technology, synchronization is accomplished through the inverter output, and the generator output is balance each metered utility feed through the inverter controls. This DG/CHP system architecture would meet NEC and utility regulations. Each inverter wou synchronize to its individual service and balance output to the needs of that service. The integrated feedback from each inverter would control the output of the CT. Additionally, with the generator output isolated from the building loads by the inverters, the generator will be able to run in variable speed generator (VSG) mode to achieve improved performance and efficiency at partial loads. The PowerDistributor multi-converter concept is proprietary Northern Power technology, with a patent application currently in process.

The CHP system will be baseloaded at optimal output during both on-peak and off-peak periods. The system will also be configured to provide back support to selected loads during periods of utility failure. The system will be capable of providing 59% of the building's electrical needs and 63% of steam needs for heating and operation of the turbine-driven chillers. Given the high cost of electricity and steam from ConEd, Northern estimates tha the system will generate annual energy cost savings of $1,787,000.

Funding	Encumb to Date	Pending	Total Anticipated
Northern Power Systems, Inc.	$6,716,700.00	$0.00	$6,716,700.00
NYSERDA	$1,000,000.00	$0.00	$1,000,000.00
TOTALS	**$7,716,700.00**	**$0.00**	**$7,716,700.00**

Manager	Torpey, Mark R.
Contracts	STD-8572
Contractors	Northern Power Systems, Inc.
Cities	New York
Counties	New York