

PROJECT SUMMARY

UTC POWER GRANT APPLICATION PREPARATION AND SUBMISSION MULTIPLE PLANT LOCATIONS, PROJECT TYPES AND GRANTOR AGENCIES

PROJECT SUMMARY

Bridgestone Associates Ltd. prepared and submitted, on behalf of its client UTC Power, 12 applications for capital grant funding of energy related projects. These projects included Organic Rankine Cycle, micro-turbine based combined heat and power (CHP), and fuel cell based CHP plants for a wide variety of end users including a university, two data centers, a steel plant, two large manufacturing plants, a soft drinks bottling plant, an environmental remediation facility, a military design and test facility, and three supermarket chains. These projects were located in New York, Pennsylvania, New Jersey and Connecticut. Of the 12 applications prepared and submitted, 11 were successful providing a total of approximately \$13 million in capital grant funding to these projects.



PROJECT STATISTICS

Client:	UTC Power, South Windsor, Connecticut
Project Type:	Complete grant application preparation and submission
Facility Types:	1 university; 2 data centers; 1 steel plant; 1 chemical plant; 1 large manufacturing plant; 1 soft drinks bottling plant; 1 environmental remediation facility; and 3 supermarket chains.
Plant Size:	195 kW – 1,000 kW
Plant Type:	Organic Rankine Cycle waste heat plants (3 applications); fuel cell based CHP plants (6 applications, 10 locations); micro turbine based CHP (3 applications)
Facility Locations:	New York (8); Connecticut (1); Pennsylvania (1); New Jersey (2)
Granting Agencies:	NYSERDA (New York); CCEF (Connecticut); PEDA (Pennsylvania); NJCEP (New Jersey)
Applications Submitted:	12 including one application for five separate plants
Applications Awarded:	11 (= 92% of those submitted)

Total Amount of Grants: \$13 million

PROJECT DESCRIPTION

UTC Power, South Windsor, Connecticut, provides fuel cell and micro turbine based combined heat and power (CHP) systems and Organic Rankine Cycle systems to their customers to reduce energy costs and increase energy security. UTC Power engaged Bridgestone Associates to assist them in obtaining grant funding for their clients for a number of their projects. Over a period of approximately five years, Bridgestone prepared and submitted 12 applications on behalf of UTC Power and UTC Power’s clients. Of these 12 applications, 11 were successful and received a full award of the amount requested (please see the table below).

	Client	Type and Technology	Award Amount
1	Steel producer	Organic Rankine Cycle System utilizing waste heat	\$250,000
2	Environmental remediation facility	Organic Rankine Cycle System utilizing waste heat	\$0
3	Manufacturer of electric arc furnace electrodes	Organic Rankine Cycle System 1,200 – 2000 °F utilizing waste heat from kilns	\$491,114
4	Data Center	14 micro turbines with two absorption chillers	\$796,000
5	Chemical manufacturing plant	1,000 kW fuel cell CHP plant	\$50,000 + right to negotiate PPA
6	Military Engineering Design and Test facility	Fuel cell CCHP plant	\$1,000,000
7	University	Micro turbine and absorption chiller CCHP plant	\$642,122
8	Data and conference center	Micro turbine and absorption chiller CCHP plant	\$2,000,000
9	Supermarket	Fuel cell CCHP plant	\$838,318
10	Supermarket chain	Fuel cell based CCHP plants at five supermarkets	\$4,000,000
11	Supermarket	Fuel cell CCHP plant	\$1,000,000
12	Soft drinks bottling plant	Fuel cell based CCHP plant	\$1,917,885
		TOTAL	<u>\$12,985,439</u>

Supermarket Chain Client



Nucor Steel Mill



In each of the grant applications submitted, Bridgestone took the lead and was responsible for breaking down the requirements and key criteria and evaluation points of the application process to ensure a successful application. Bridgestone then developed a detailed outline of the requirements and information and data needed from both UTC Power and its clients. Where necessary, Bridgestone visited the client site to gather information, drawings and other data.



Bridgestone then prepared a draft detailed application, including project description; general arrangement drawings; heat balances; electrical one-line drawings; P&IDs; financial and funding justification; technical justification; environmental justification; and other supporting materials. These were based on materials and information obtained from UTC Power, its clients, and from other sources. Bridgestone completed all forms and application materials on behalf of UTC Power. After their review and approval, the necessary signatures authorizing the application and on the various disclosure documents were obtained. The completed application was then prepared and the required number of paper and electronic copies delivered to the grantor agency by the required deadline.



It was Bridgestone's goal to take on the responsibility to provide a turnkey grant application process and minimize the amount of work required by UTC Power and its personnel in the preparation of these applications so they could continue with their other work and activities. Bridgestone was successful in achieving this goal and in the results of the applications submitted.

Clarkson University 195 kW Microturbine CHP Installation

