CHP Residential Fuel Cell Field Test, Part II

To demonstrate the viability of the latest Plug Power residential fuel cell.

BACKGROUND

Under an ongoing NYSERDA funded project, Contract No. 6870, National Fuel Gas is demonstrating the performance of two Plug Power fuel cells a residences in Lewiston and Colden in western New York State. Both sites are fully instrumented, and the field test continues to collect data on the operating and maintenance costs of residential proton exchange membrane (PEM) fuel cells. The demonstration helped identify an equipment desig associated with extreme cold-weather outdoor installation. The field test is scheduled to end data collection this summer, followed by a final report preparation and submission. At that time, National Fuel Gas would like to continue the field testing by adding heat recovery and standby capabilities, and updating the current fuel cell system with Plug Power's latest version.

OBJECTIVE

To demonstrate the viability of the latest Plug Power residential fuel cell, a GenSYS 5C PEM, with heat recovery for CHP applications. The project w address issues that are critical to the successful installation and operation of a single fuel cell and the development of residential CHP at the Lewistor The system will operate grid-interconnected, providing baseload generation to the grid while assuring power reliability for the homeowner with its star capability.

BENEFITS

Up to 62% fuel use efficiency with CHP. Standby capability will assure power reliability during grid outages. The system pollutant emissions are muc lower than the average rates for power produced on New York States grid. Distributed generation reduces the need and expense of upgrading centr generation and transmission/distribution.

Can use existing instrumentation and data collection at Lewiston site. Project team is experienced and qualified. Low-cost project to determine if CH feasible with PEM residential fuel cell.

STATUS AND SCHEDULE

The project is underway.

Funding	Encumb to Date	Pending	Total Anticipated
National Fuel Gas Distribution Corp.	$61,961.00	$0.00	$61,961.00
NYSERDA	$109,359.00	$0.00	$109,359.00
Other Participants	$10,438.00	$0.00	$10,438.00
Plug Power, LLC	$36,960.00	$0.00	$36,960.00
TOTALS	**$218,718.00**	**$0.00**	**$218,718.00**

Manager Foster, James
Contracts STD-7871
Contractors National Fuel Gas Distribution Corp.
Technologies Power Generation
Cities
Counties

National Fuel Gas

Smart Equipment Choices Program Incentives to be Evaluated for Lighting.

Funding	Encumb to Date	Pending	Total Anticipated
NYSERDA	$350.00	$0.00	$350.00
TOTALS	**$350.00**	**$0.00**	**$350.00**

Manager	Lenihan, Kimberlie A.
Contracts	SEC-5185
Contractors	National Fuel Gas Distribution Corp.
Cities	Dunkirk
Counties	Chautauqua

National Fuel Gas Distribution Corp.

Audit of indoor and outdoor facilities

Funding	Encumb to Date	Pending	Total Anticipated
National Fuel Gas Distribution Corp.	$1,375.00	$0.00	$1,375.00
NYSERDA	$1,375.00	$0.00	$1,375.00
TOTALS	**$2,750.00**	**$0.00**	**$2,750.00**

Manager	Lampman, Gregory
Contracts	PO-6722
Contractors	National Fuel Gas Distribution Corp.
Customers	National Fuel Gas Distribution Corp.
Technologies	Auditing
Cities	Buffalo
Counties	Erie

Residential Fuel Cell Demonstrations

Connect 2 Plug Power fuel cells to two residential homes in their area and operate them for one year.

BACKGROUND

Major obstacles still lie in the way of the commercialization of fuel cells. This project aims to help overcome these obstacles by installing fuel cells in residences as a demonstration project. National Fuel Gas Distribution Corporation has 15 years of experience with distributed generation applications

OBJECTIVE

National Fuel Gas proposes to connect 2 Plug Power fuel cells to two residential homes in their area and operate them for one year. The fuel cells wi operate in parallel with the electric utility. The project will emphasize the processes and issues surrounding the installation of fuel cells in a residential setting.

DESCRIPTION

Contractor will put together a "Best Practices" Guide for the installation, operation and maintenance of fuel cells. This will all culminate in a case hist which will document all this information, along with operating performance results.

BENEFITS

Increased electrical efficiency, lower emissions, and the nurturing of a New York State company. By demonstrating Plug Power's product, National Fu will enhance the economic viability of the company. Will provide valuable operating data regarding performance and economics of residential fuel cell installation and operation.

SCHEDULE AND STATUS

Project is complete and the final report and the "Best Practices" Guide has been received and approved.

Funding	Encumb to Date	Pending	Total Anticipated
National Fuel Gas Distribution Corp.	$164,800.00	$0.00	$164,800.00
NYSERDA	$164,800.00	$0.00	$164,800.00
TOTALS	**$329,600.00**	**$0.00**	**$329,600.00**

Manager	Foster, James
Contracts	STD-6870
Contractors	National Fuel Gas Distribution Corp.
Technologies	Fuel Cells for Stationary Applications, Power Generation
Cities	
Counties	SBC Statewide,

Transfer and Termination Agreement

Transfer and Termination Agreement with National Fuel Gas Distribution Corp.

Funding	Encumb to Date	Pending	Total Anticipated
TOTALS	**$0.00**	**$0.00**	**$0.00**

Manager	Khosrova, Mitchell
Contracts	STD-9301
Contractors	National Fuel Gas Distribution Corp.
Cities	
Counties	Statewide,