

Macy's East Inc. CHP Demonstration

A combined retail and office building will serve as the host site for this project. This facility, with more than 800 employees occupying more than 1 million square feet, operates year round and requires electric power, heating and air conditioning.

The proposed Combined Heat and Power (CHP) system will use modular induction-type engine-driven generators. The system will be adopting well-proven and properly integrated design considerations. The CHP system will operate in parallel with the local electric utility grid. The system will also have new features, consisting of a special exhaust heat recovery system that will generate steam. Through this project, Energy Concepts, and engineering consulting firm, will serve as the Contractor. The project will install and demonstrate the efficiency of a CHP system, with several engine generators totaling 750 kW, as the prime mover at the host site facility. The proposed CHP plant will consist of separate 250 kW and 500 kW electrical systems which will result when several existing electrical services are consolidated into these two services.

The recovered heat will be captured in the form of hot water for preheating condensate return water and boiler makeup water, and in the form of steam for space heating as a supplement to the existing boilers and for operating the existing absorbers for chilled water cooling. Technology transfer and publicity will emphasize wide dissemination of the project results. This project is forecasted to provide peak load reduction of approximately 750 kW, result in over \$400,000 in annual net annual energy savings for the host site facility. It is forecasted that approximately 80% of the engine's input fuel will be utilized through electric power and heat.

| Funding | Encumb to Date | Pending | Total Anticipated |
|-----------------------------------|-----------------------|----------------|--------------------------|
| Energy Concepts Engineering, P.C. | \$1,530,541.00 | \$0.00 | \$1,530,541.00 |
| NYSERDA | \$270,095.00 | \$0.00 | \$270,095.00 |
| TOTALS | \$1,800,636.00 | \$0.00 | \$1,800,636.00 |

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Contracts STD-8577
Contractors Energy Concepts Engineering, P.C.
Cities New York
Counties New York