



Duquesne Light

Our Energy...Your Power

Combined Heat and Power (CHP) En Banc Hearing

Pennsylvania Utility Commission

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Duquesne Light (DLCo) CHP History

- ▶ Historically, DLCo has supported a number of CHP or co-gen customers in our territory. During various parts of the 1990's, the Company had as many as 8-10 self generating customers on our backup power rates.
- ▶ However, over the years, restructured rates and low electric power prices in our Western PJM region made it more challenging to find applications where these technologies have the necessary cost benefit.
- ▶ Currently DLCo has one active back-up power customer in our region, Duquesne University.
- ▶ In the years since the 1990s, we have also enhanced our interconnection processes and gained experience in supporting self generating customers.
- ▶ DLCo is currently working to support two customers that have qualified for incentives under, Watt Choices, our Act 129 energy conservation program.



Watt Choices Review, Measurement & Verification

- ▶ Project development assistance provided to potential CHP applications includes:
 - Technical review (assumptions, models, algorithms and calculations)
 - Cost-effectiveness assessment
 - Measurement and Verification Plan
- ▶ Establishing baseline operations and energy consumption (electric and also steam and/or gas) of the facility at which proposed projects are metered and documented.
- ▶ Upon completion of projects, a site inspection is performed to document installation of the projects as described and approved.
- ▶ Pre- and post-installation metering is utilized to quantify energy savings impacts.

Act 129 Incentives for CHP

- ▶ DLCo's will determine CHP project eligibility on a case-by-case basis to determine cost effectiveness and energy savings potential.
- ▶ Cost-effective¹ CHP projects are eligible for funding similar to other measures under DLCo's Act 129 programs, paid based on kWh saved.
- ▶ Potential reductions to distribution charges for self generators may exist through back up power rates in Rider 16 in DLCo's tariff.
- ▶ Under the Rider 16 rate structure, CHP customers are charged the normal tariff rate for their rate class based only on their contract load.
- ▶ Distribution charges of \$2.50 per kW are then applied to the Back-Up load requirements in excess of their contract load.

¹ Cost-effectiveness is determined using the Total Resource Cost test (TRC) as required by Commission Order for all Act 129 energy efficiency programs.

Duquesne Light Interconnection Practices

- ▶ DLCo has refined its interconnection process over the years and works to be a responsive partner to customers seeking to install self generation products, including CHP.
- ▶ CHP applications typically involve complex installations and a systems study performed by DLCo to help manage a new self-generator's impact on our system.
- ▶ Our process is designed to ensure that CHP applications are safely and efficiently integrated into the grid.
- ▶ Self-Generator (Customer) Interconnection Equipment
 - Customer pays to have utility approved interconnection equipment installed
 - Interconnection equipment can be installed by the Customer or by Duquesne Light

Active CHP Projects

- ▶ DLCo currently has two potential CHP projects that have qualified for incentives and are currently in development.
- ▶ CHP Project #1 is an industrial facility that requires a combination of self produced steam and electric power to support the machinery in its production process.
 - Industrial process byproduct gas was vented to atmosphere or burned (“flared”).
 - Now the gas is used to fire a boiler and output steam (heat) is then used for production and to drive a turbine driven generator (power).
 - The CHP project new configuration meets process steam needs and adds 1.9 megawatts of generation capacity.
 - The resulting power generation of 1.9 megawatts, 24 hours a day, seven days a week will provide 16.6 million kWh to the plant annually.

Active CHP Projects (continued)

- ▶ CHP Project #2 is a large hotel who has a significant electric load and year-round thermal loads
 - Current configuration utilizes typical utility service (gas and electric) for cooling, lighting and thermal loads.
 - DLCO's Watt Choices redesign is an engineered CHP solution to utilize a natural gas fired generator for on-site generation.
 - Generator waste heat is used to serve laundry and pool thermal loads.
 - Early stage engineering analysis shows that the 1.2 megawatt generator will serve the customer's 10 million kWh annual load.

Looking to the Future

- ▶ Natural gas is a plentiful resource in our region and DLCo supports the use of CHP technology where it is beneficial to customers.
- ▶ Low power prices in PJM West may continue to create challenges to increasing the number of CHP applications in DLCo's territory.
- ▶ DLCo's current tariff and interconnection standards support CHP installations and we will continue to work with regulators and customers to refine existing CHP policies as appropriate in the future.