

Program Planning Template

2017 – 2020 Programs

GY 7 – 9; EY 10 - 12

Program Applicable for: Ameren _____ ComEd _____ DCEO X
Nicor _____ People's Gas/North Shore Gas _____

Program Name	Public Sector Combined Heat & Power Program
Program Description	<p>This goal of this program is to achieve electric and natural gas savings through the use of combined heat and power in the public sector. Specifically, the program is designed to encourage investment in Conventional or Topping Cycle CHP systems as well as Waste Heat-to-Power or Bottoming cycle CHP systems. The projects under this program have the potential to accrue electric savings or both electric and natural gas savings. This program was offered for the first time in 2014 and was structured in a three-year format: year one for engineering and design, year two for construction, and year three for savings verification. Incentives are structured so that funding is provided for each phase, rather than a lump sum. Unlike many other energy efficiency projects, most CHP projects take in excess of 12 months to develop and implement. The ability to roll-over program funds during the three year program cycle for both gas and electric program funds allows this program to adapt to the development and implementation time frames associated with most CHP projects.</p>
Program Duration	6/17 through 05/20
Delivery Strategy	<p>The Program will be implemented through a competitive process, with applications being solicited, reviewed within the first several months of PY10. Projects will be implemented over the remaining duration of the plan cycle, and a portion of the funds set aside for the selected projects will be released with each phase: engineering/design, construction, and savings verification.</p> <p>The Department will be seeking qualified applications that will reduce the total Btus of electricity and natural gas required to meet the end use needs of a public facility. Depending on the application, the saved Btus can be converted totally into kWh saved or a combination of kWh and therms saved. In all cases the saved energy will account for any additional natural gas utilized at the site. Applications will be reviewed to ensure proposals demonstrate a sustained ability to utilize both the electricity and thermal energy produced by the system and attain minimum system efficiencies of 60% on an annual basis. All successful applications must pass the Illinois TRC test. Part of the application approval process will be to have the Department's evaluation contractor review the applications and provide feedback on the potential project meeting the requirements of the EM&V protocols.</p>
Target Market	<p>Public sector entities throughout the State and located in the service territories of ComEd, Ameren, Nicor, Peoples and/or North Shore Gas. The type of facilities can include, but are not to be limited to: K-12 schools, community colleges, public universities, public water and waste water treatment facilities, city/county government/state/federal facilities and campuses, airports, and publicly owned health care. The eligible facilities must have sufficient and sustainable thermal and electric loads so that the application can demonstrate the ability of the CHP system to operate with an annual fuel use efficiency of at least 60%.</p>

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Marketing Strategy	<p>The initial program offering will be advertised through the Department's core marketing channels, including internal cross-cutting marketing resources (e.g., website, listserv, and webinars), Trade Allies, and public sector trade associations. The Department will also directly market and conduct outreach to specific segments of the public sector market – including public water/wastewater treatment facilities, public universities, airports – and will leverage partners such as the University of Illinois at Chicago's Energy Resources Center and the Midwest Cogeneration Association.</p>
Eligible Measures	<ul style="list-style-type: none"> • Conventional or Topping Cycle CHP, defined as an integrated system that is located at or near the building or facility (on-site, on the customer side of the meter) that utilizes a prime mover (reciprocating engine, gas turbine, micro-turbine, fuel cell, boiler/steam turbine combination) for the purpose of generating electricity and useful thermal energy (such as steam, hot water, or chilled water) where the primary function of the facility where the CHP is located is not to generate electricity for use on the grid. An eligible system must demonstrate a minimum fuel use annual energy efficiency of 60% with at least 20% of the system's total useful energy in the form of thermal energy. • Waste Heat-to-Power or Bottoming Cycle CHP, defined as an integrated system that is located at or near the building or facility (on-site, on the customer side of the meter) that: <ul style="list-style-type: none"> ○ Utilizes exhaust heat from an industrial/commercial process and converts that heat to generate electricity (except for exhaust heat from a facility whose primary purpose is the generation of electricity for use on the grid). ○ Utilizes the pressure drop in an industrial/commercial facility to generate electricity through a backpressure steam turbine where the facility normally uses a pressure reducing valve (PRV) to reduce the pressure in their facility. ○ Utilizes the pressure reduction in natural gas pipelines (located at natural gas compressor stations) before the gas is distributed through the pipeline to generate electricity, provided that the conversion of energy to electricity is achieved without using additional fossil fuels. ○ Since Waste Heat-to-Power or Bottoming Cycle CHP systems utilize waste heat, they do not have to meet any specified system efficiency level to qualify (assuming they use no additional fossil fuel). <p>The Department and its partners will provide technical assistance, as necessary during the application and implementation phases of the Program.</p>

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Program Targets

Participation Levels

	PY10	PY11	PY12	Total
Total Facilities	6	0	0	6

Annual Savings Targets

	PY10	PY11	PY12	Total
Gross MWh	13,138	22,928	35,040	71,106
Net MWh	10,510	18,342	28,032	56,884
Gross Therms	220,030	434,544	643,010	1,297,583
Net Therms	176,024	347,635	514,408	1,038,066

Program Budget

ELECTRIC	PY10	PY11	PY12	Total
Implementation	\$0	\$0	\$0	\$0
Incentives	\$900,625	\$1,809,100	\$2,407,500	\$5,117,225
Total	\$900,625	\$1,809,100	\$2,407,500	\$5,117,225
GAS	PY10	PY11	PY12	Total
Implementation	\$0	\$0	\$0	\$0
Incentives	\$232,580	\$458,930	\$673,380	\$1,364,890
Total	\$232,580	\$458,930	\$673,380	\$1,364,890
COMBINED	PY10	PY11	PY12	Total
Implementation	\$0	\$0	\$0	\$0
Incentives	\$1,133,205	\$2,268,030	\$3,080,880	\$6,482,115
Total	\$1,133,205	\$2,268,030	\$3,080,880	\$6,482,115

Cost-Effectiveness Results

	Test Results
TRC	1.59
TRC with NEBs	1.75
UCT	9.06

	Cost Per Unit Saved
Electric	\$0.26
Natural Gas	\$3.95