



CHP BIENNIAL REPORT 2023

Technical Utility Services
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Policy and Planning

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Executive Summary

This report has been prepared to provide a picture of the amount and types of combined heat and power (CHP) systems that exist or are in some stage of development in Pennsylvania and represents the deployment of CHP from July 2020 to June 2022. The information contained herein is given in a manner that does not compromise the confidentiality of CHP owners, while also providing a useful snapshot of the state of CHP deployment. This report does not speculate on the long-term prospects of CHP deployment, nor is it intended to praise or shame electric and natural gas distribution companies for the relative capacities or the amount of CHP systems in their respective service territories.

The deployment of CHP relies on many factors, principally driven by the customers valuation to invest in owning and operating such a system. Two of the primary considerations include the value of energy resiliency and a project's rate of return, including aspects such as the cost of installation versus reducing overall electricity and heating costs, payback period of the cost of installation, and/or whether the capital expenditure could better be utilized elsewhere. Since this report is produced biennially, it reflects the deployment of CHP during the COVID-19 pandemic. Similar to the disruptions that COVID-19 caused in other aspects of major capital investment projects, CHP deployment in Pennsylvania has been impacted, to some degree, by the pandemic. This includes the ability to conduct onsite engineering work, supply chain issues, increased uncertainty, as well as economic impacts. As the pandemic continued to evolve during this timeframe the impacts of it varied in degree. However, it can generally be said to have negatively impacted CHP deployment, particularly during the early stages of a project.

For this reporting period, there are 131 interconnected CHP systems compared to 92 listed in the 2021 CHP Biennial report. Eight of the previously reported potential systems are now reported as interconnected and there is now a total of 21 reported potential systems. EDCs and NGDCs have continued to report on previously unreported interconnected systems as they are discovered, demonstrating an earnest effort to continue to capture the full scope of CHP deployment in Pennsylvania. The reported disconnected CHP systems remains unchanged at four.

Introduction and Background

CHP is not a single technology but rather a well understood suite of technologies. The first power plant in the United States, the Pearl Street Station, began operation on Sept. 4, 1882. It was also the first CHP plant because the thermal byproduct of the steam engines was used to provide steam to local manufacturers and warming nearby buildings on the same Manhattan block.¹ While CHP has been around for over 100 years, it continues to evolve. This evolution includes the use of different fuels, like biogas and hydrogen, and advances in engine design, like combustion turbines and fuel cells. The key to any successful CHP project is whether it will meet the owner's needs and budget.

In the spring and fall of 2014, the Commission held *En Banc* hearings on CHP at Drexel University and the University of Pittsburgh, respectively.² Witnesses representing a cross section of the community interested in CHP testified at the hearings, including consultants, electric and natural gas distribution companies, universities, and CHP system owners and advocates. These hearings reinforced the Commission's understanding that a coordinated approach to CHP can provide real benefits to the economy, the environment, and the security of residents and businesses within the Commonwealth.

On Feb. 25, 2016, the Commission adopted a Proposed Policy Statement in support of CHP, to encourage companies to share progress they have made with CHP development, and to help the Commission determine how to best continue the advancement of CHP.³ Numerous stakeholders provided a variety of comments regarding policy issues and the proposed biennial reporting requirements.

On April 5, 2018, the Commission issued its Final Policy Statement.⁴ In doing so, the Commission sought to catalog known, existing and proposed CHP systems.⁵ The

¹ See [Northwest CHP Technical Assistance Partnership > About Clean Energy > Combined Heat and Power \(CHP\) > History of CHP \(northwestchptap.org\)](#).

² See http://www.puc.state.pa.us/utility_industry/natural_gas/chp_cogeneration.aspx under "Combined Heat and Power (CHP) En Banc Hearing – May 5, 2014" and "Combined Heat and Power (CHP) En Banc Hearing – October 7, 2014".

³ See [Proposed Policy Statement](#) at <http://www.puc.pa.gov/pdocs/1422142.doc>

⁴ See [Final Policy Statement](#) at <http://www.puc.pa.gov/pdocs/1560599.doc>

⁵ See http://www.puc.state.pa.us/Electric/xls/CHPWG/CHP_Report_Form.xlsx for the form used by the utilities to report their CHP information.

Commission further sought to understand 1) if and how the EDCs and NGDCs encourage and/or extol the benefits of CHP, via marketing, to potential clients and, 2) if, via the establishment of a CHP Working Group process, the Commission may be able to better facilitate the deployment of CHP technology within the Commonwealth. Finally, the Final Policy Statement requires the Bureau of Technical Utility Services (TUS) to produce a report based on the findings of the biennial report filings and any timely outcomes from the CHP Working Group meetings.

The first CHP Working Group meeting was held on May 30, 2018, in Harrisburg in the Keystone Building. The main topics of discussion were clarifications to the biennial reporting requirements, clarifications of interconnection jurisdiction and costs, information on CHP financing and project support, issues and questions regarding standby rates, and an overview of alternative ratemaking. The second Working Group meeting was held on July 16, 2018, in the Keystone Building in Harrisburg. The sole focus of this subsequent meeting was standby rates, because of the significant interest and discussion on the topic during the prior meeting. Additionally, presentations were provided by the U.S. Department of Energy's (DOE) Combined Heat and Power Technical Assistance Partnership regarding a relevant, DOE-commissioned study on standby rates, and by PECO regarding a new standby rate rider. The last Working Group meeting was held on April 16, 2019, in the Keystone Building in Harrisburg. The purpose of this meeting was to present and discuss the findings of the first CHP Biennial Report, discuss the upcoming CHP Market Potential Assessment,⁶ and the Standby/Capacity Reservation charges best practices.⁷

Biennial Report Information

It is fair to assume that the initial CHP Biennial Report required greater effort on the part of the EDCs and NGDCs to gather the relevant information as to the amount, sizes, and types of CHP systems within their respective service territories. Since the installation of

⁶ The CHP Market Potential Assessment was conducted by the SWE as a part of the larger [Pennsylvania Act 129 Phase IV Energy Efficiency and Peak Demand Reduction Market Potential Study](https://www.puc.pa.gov/pcdocs/1656474.pdf). The purpose of the study is to determine the potential for energy efficiency and peak demand reductions available in Pennsylvania. See <https://www.puc.pa.gov/pcdocs/1656474.pdf>.

⁷ See https://www.puc.pa.gov/Electric/pdf/CHPWG/CHP_Standby_Capacity_Reservation_Charge041619.pdf for the information presented on Standby/Reservation charges.

a CHP system involves a great deal of planning and financial considerations, and by its very nature, is a capital expenditure with a long service life, many of the operating CHP systems identified in this reporting cycle were also identified in the previous two biennial reports. Additionally, eight CHP systems previously identified as potential are now reported as operating. Several EDCs and NGDCs provided information on potential new systems and some provided information on CHP units that were previously unreported by the utilities.

As with the 2021 biennial report some information required research and verification by TUS staff, mainly through web-scraping exercises. Aside from this, information submitted was accepted as received. TUS also attempted to provide a more thorough picture of the amount of CHP in Pennsylvania by including anaerobic digesters and other known CHP systems that were unreported by EDCs and NGDCs. This is not to say that the EDCs and NGDCs were lax in reporting these as most of these systems are unique to biogas applications and likely not as fully understood by the utilities or may exist in a rural electric cooperative.

It is important to note that the reporting effort does not constitute a complete list of all CHP systems in Pennsylvania for a variety of reasons. This is because there may be systems existing within the jurisdiction of municipal authorities and rural electric cooperatives - entities that do not fall under the reporting requirements of the CHP Policy Statement. It is also possible that there are poorly understood systems, such as systems operating on biogas or municipal waste. This is the primary reason why there is a difference in the number of CHP systems reported here compared to the U.S. DOE's CHP Installation Database. Some information may have required different levels of data collection and outreach by the utilities and was dependent upon the CHP system owner to provide the requested information. Because of that, some information was not obtainable, available, or known. Furthermore, the reporting of potential⁸ CHP systems should not be viewed as an assessment of CHP potential within the Commonwealth.

⁸ In the context of this report, "potential" means any CHP system that is not yet fully operational. These could be CHP systems that are in various phases of construction or could mean that the EDC or NGDC has had some level of conversation with a customer about the possibility of installing a CHP system. The EDCs and NGDCs had discretion as to what they deemed a potential system.

Figures 1 and 2 show the number of interconnected and potential CHP systems and the nameplate capacity of those systems, respectively.

Figure 1. Number of Interconnected and Potential CHP systems, as Reported by EDCs and NGDCs, and TUS research

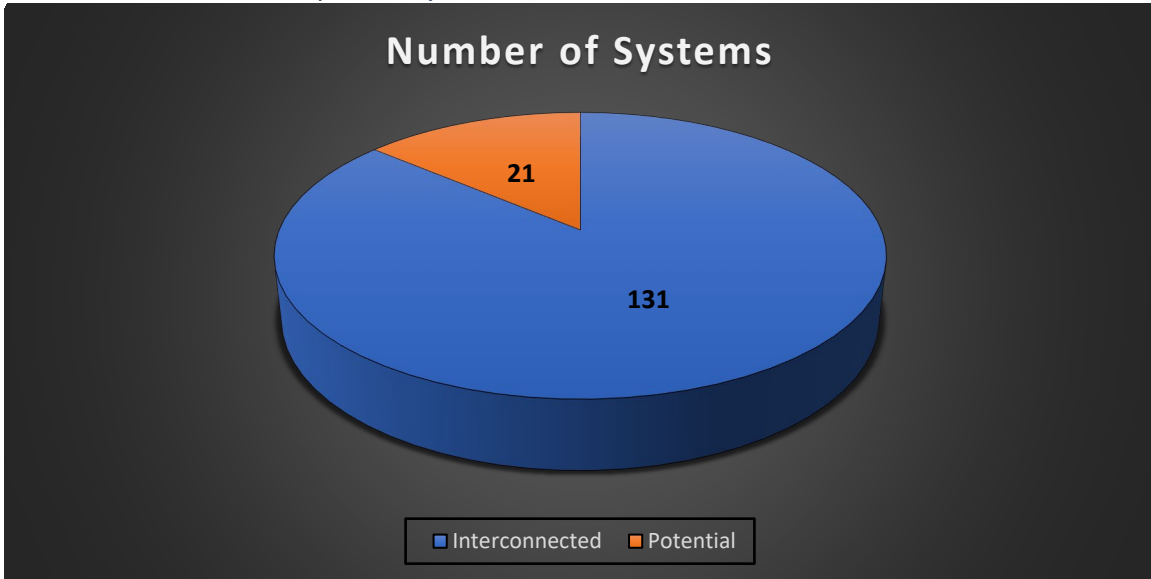
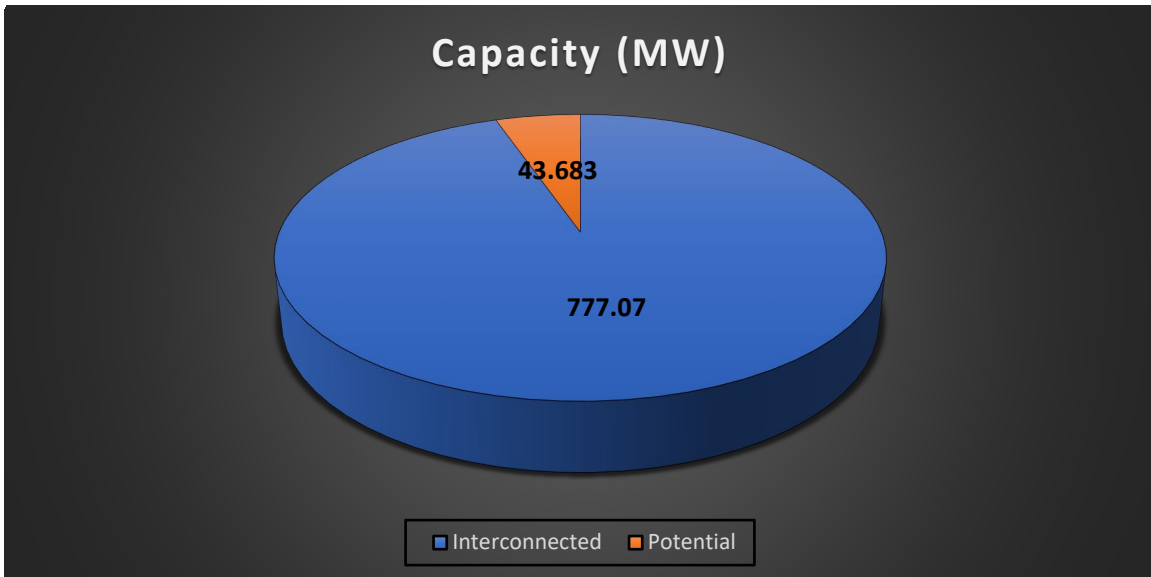


Figure 2. Nameplate Capacity of Interconnected and Potential CHP Systems, as Reported by EDCs and NGDCs, and TUS research



Figures 3 and 4 show the number of CHP systems based on nameplate capacity for interconnected and potential systems, respectively. Please note that Figure 3 represents *all* interconnected systems, not just those reported by EDCs and NGDCs.

Figure 3. Number of Interconnected CHP Systems Based on Nameplate Capacity

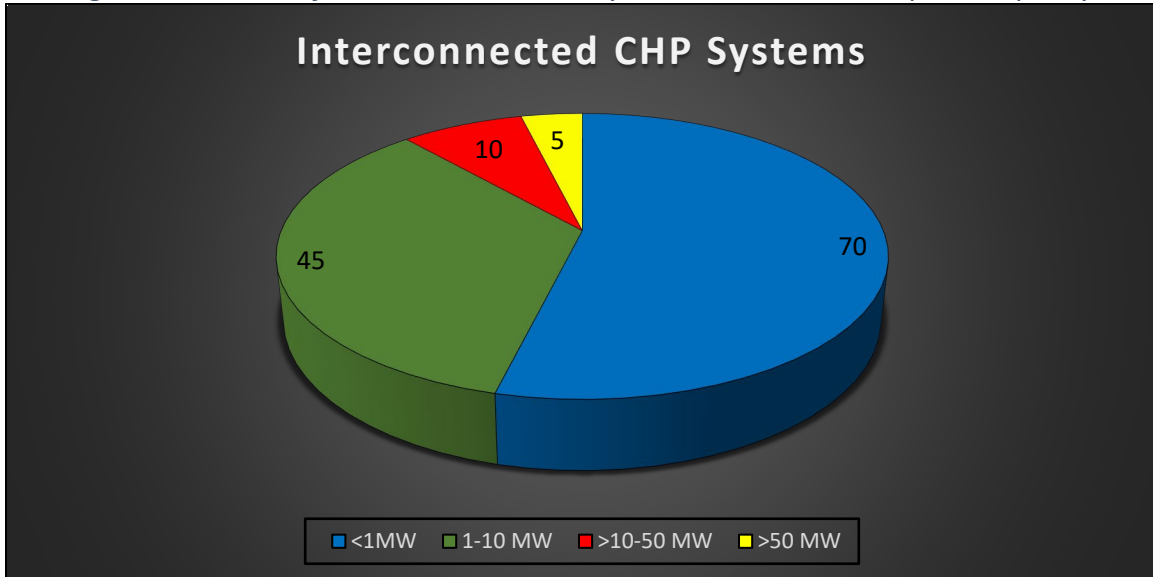
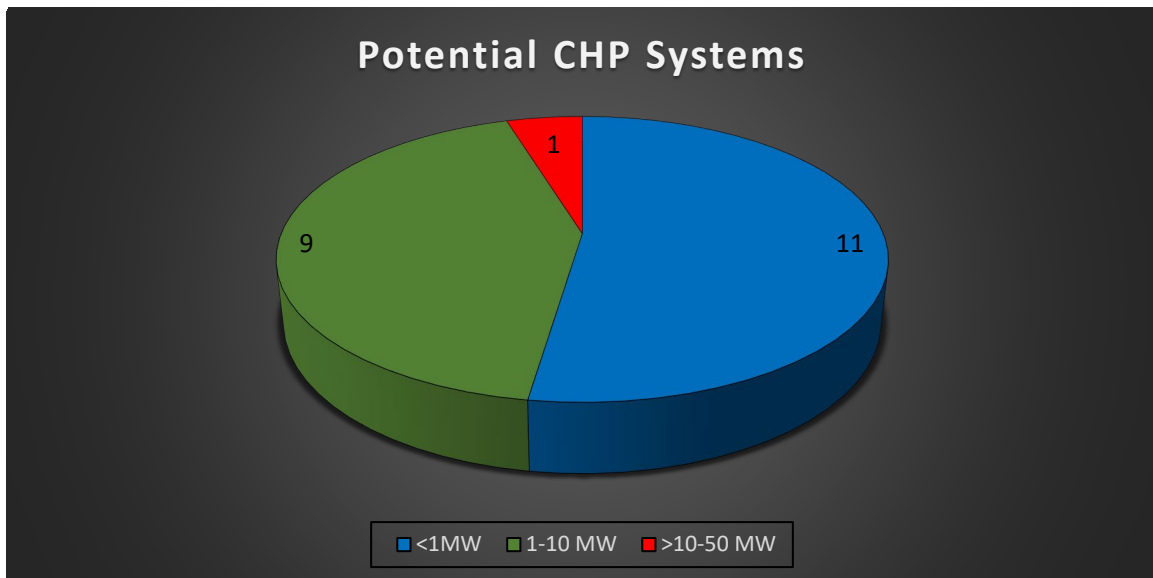


Figure 4. Number of Potential CHP Systems Based on Nameplate Capacity as reported by EDCs and NGDCs



Figures 5 and 6 give a breakdown of the interconnected CHP systems, by EDC. Figure 5 shows the number of interconnected CHP systems by EDC. Figure 6 shows each EDC's percent of the total nameplate capacity (MW) reported. It should be noted that the sum of EDC-interconnected systems does not equal the total number of CHP systems since some CHP systems have been reported by NGDCs and not by EDCs.

Figure 5. Number of Interconnected CHP Systems by EDC

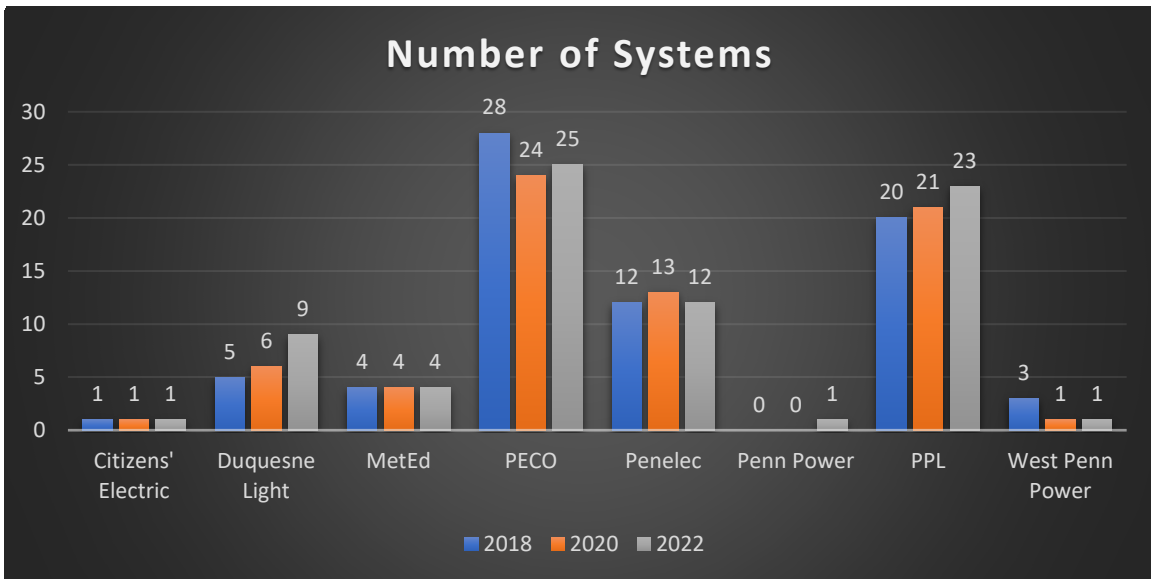
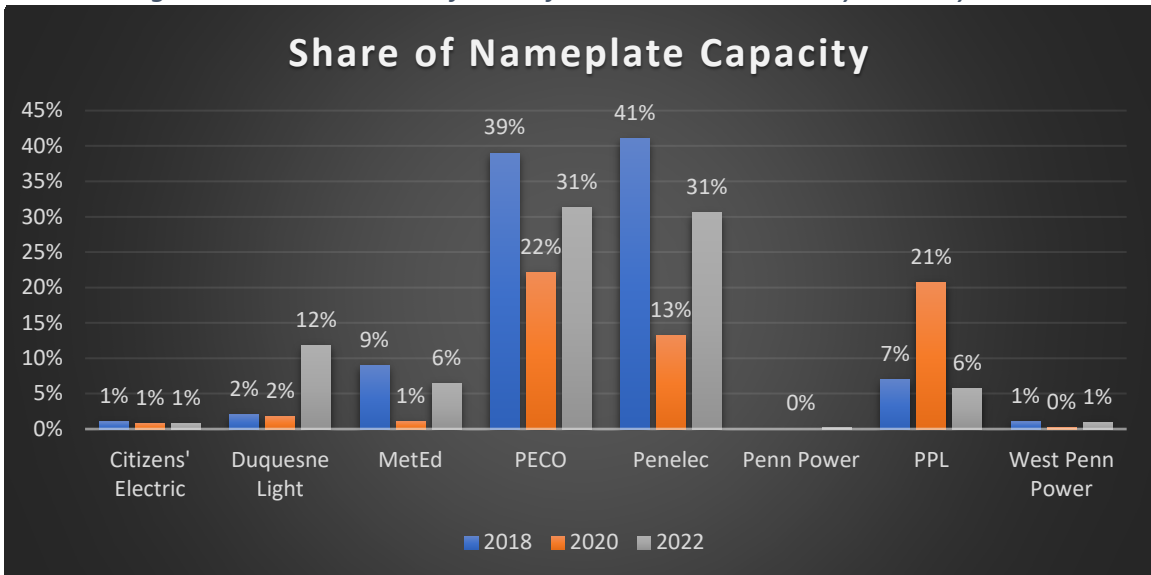


Figure 6. Percent Share of MW of Interconnected CHP Systems by EDC



Figures 7 and 8 show both the interconnected and potential CHP systems by technology type. It is noteworthy that one of the potential CHP systems was listed as a Smartwatt Boiler⁹, a type of CHP that has not been reported before.

Figure 7. Interconnected CHP Technologies

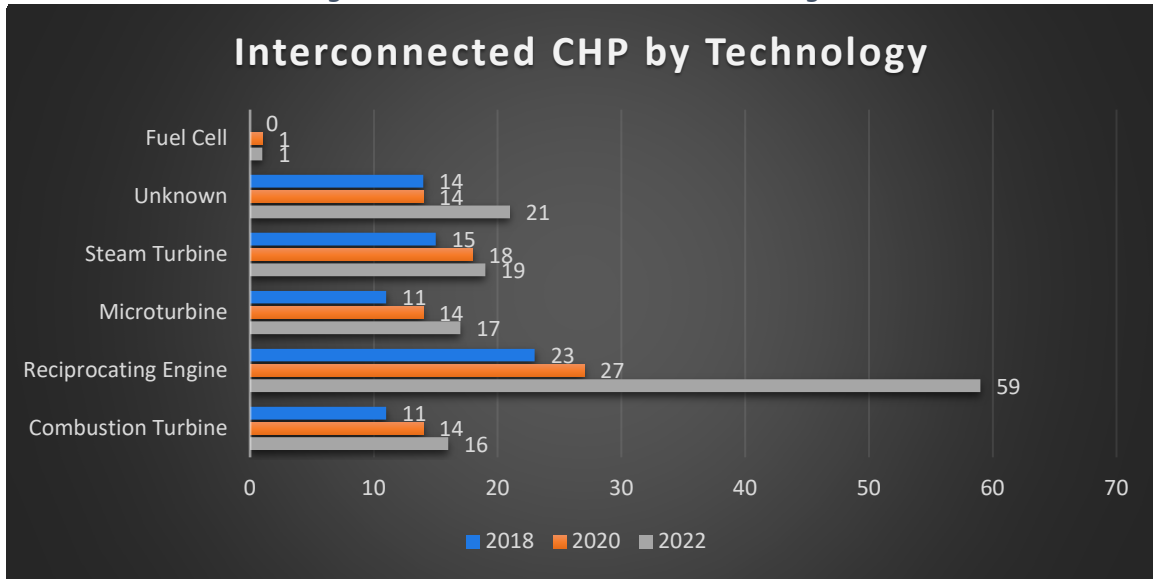
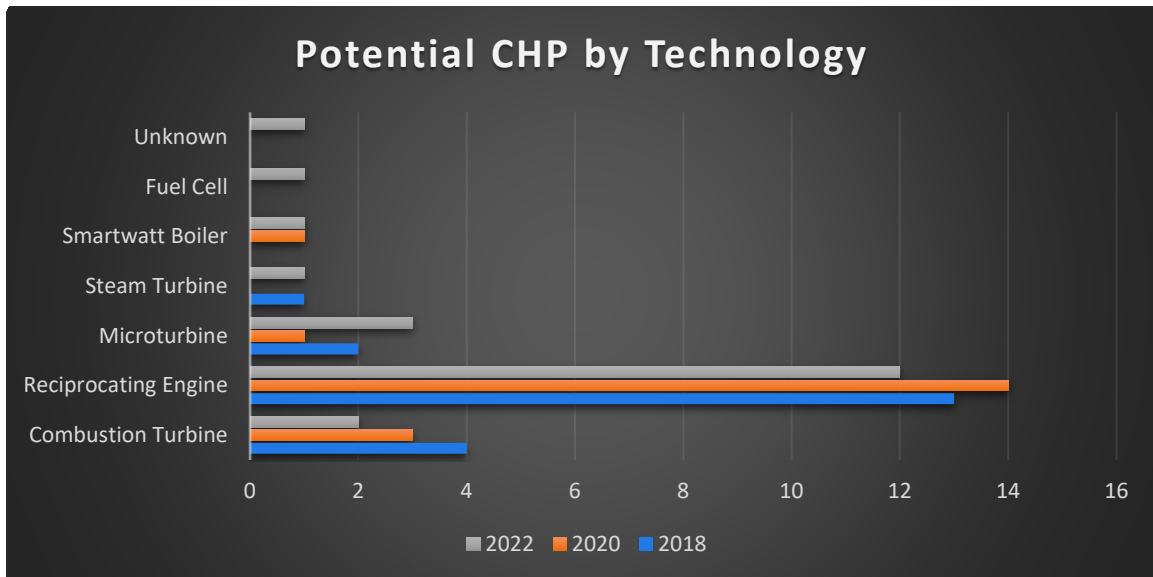


Figure 8. Potential CHP technologies



⁹ For more information on a Smartwatt Boiler, see [Enviro Power Activates First Field-Based SmartWatt Boiler - Enviropower Technologies](#).

In the following appendices information about proposed and operational CHP systems that were reported by the EDCs and NGDCs is provided. Data identifies the county, primary technology (prime mover type), nameplate capacity, fuel type and more.

Appendix A - Proposed CHP Systems*

CHP System	Status	County	Identified by		Prime Mover Type	Nameplate Capacity (MW)	Fuel Type	Thermal Energy Type
			EDC	NGDC				
Confidential	Unknown	Allegheny		X	Reciprocating Engine	3.334	Natural Gas	Hot Water
Confidential	Unknown	Allegheny		X	Reciprocating Engine	4.3	Natural Gas	Hot Water
Confidential	Unknown	Beaver		X	Reciprocating Engine	0.05	Natural Gas	Hot Water
Confidential	Unknown	Bucks	X	X	Reciprocating Engine	1	Natural Gas	Steam
Confidential	Unknown	Cambria		X	Smartwatt Boiler	0.006	Natural Gas	Hot Water
Confidential	Unknown	Centre		X	Reciprocating Engine	0.55	Natural Gas	Hot Water
Confidential	Unknown	Clarion	X		Steam Turbine	18	Natural Gas	Steam
Confidential	Unknown	Clearfield		X	Reciprocating Engine	1	Natural Gas	Hot Water
Confidential	Unknown	Dauphin	X	X	Reciprocating Engine	0.270	Biogas	Hot Water
Confidential	Unknown	Dauphin	X	X	Combustion Turbine	1	Natural Gas	Hot Water
Confidential	Unknown	Jefferson		X	Reciprocating Engine	0.57	Natural Gas	Hot Water
Confidential	Unknown	Lancaster	X		Unknown	1.141	Natural Gas	Hot Water
Confidential	Unknown	Lebanon		X	Combustion Turbine	2	Natural Gas	Heat, Hot Water
Confidential	Unknown	Northampton		X	Fuel Cell	7.8	Natural Gas	Unknown
Confidential	Unknown	Philadelphia			Microturbine	0.13	Natural Gas	Hot Water
Confidential	Unknown	Philadelphia	X		Microturbine	0.13	Natural Gas	Hot Water
Confidential	Unknown	Philadelphia	X		Microturbine	0.13	Natural Gas	Hot Water
Confidential	Unknown	Philadelphia	X	X	Reciprocating Engine	0.07	Natural Gas	Hot Water
Confidential	Construction	Union	X	X	Reciprocating Engine	0.668	Natural Gas	Hot Water
Confidential	Construction	Union	X	X	Reciprocating Engine	0.334	Natural Gas	Hot Water
Confidential	Unknown	Westmoreland		X	Reciprocating Engine	1.2	Natural Gas	Hot Water

***Status:**

Start-up – initial operation has begun but system not operating steady-state

Construction – under construction at the time reports were being filed; may now be operational

Planning – system is in some stage of development but not yet in construction

Unknown – prospective system has been identified but no further information is available

**Albright Care Services is listed twice because one of their CHP systems will be interconnected with PPL’s distribution system and one CHP system will be interconnected with Citizens’ Electric’s distribution system.

Appendix B - Interconnected CHP Systems

CHP System	County	Identified by		Prime Mover Type	Nameplate Capacity (MW)	Fuel Type	Thermal Energy Type
		EDC	NGDC				
Hillandale Gettysburg	Adams	X		Steam Turbine	3.24	Natural Gas	Steam
Knouse Foods	Adams	X	X	Combustion Turbine	1.2	Natural Gas/Biogas	Steam
Mason Dixon Farms	Adams			Reciprocating Engine	0.6	Biogas	Digester Temperature Control, Heating
Allegheny Health Network	Allegheny	X	X	Reciprocating Engine	2.2	Natural Gas	Hot Water
Chatham University	Allegheny		X	Reciprocating Engine	0.02	Natural Gas	Hot Water
Duquesne University	Allegheny	X	X	Combustion Turbine	5.3	Natural Gas	Steam, Hot & Chilled Water
Energy Innovation Center	Allegheny	X	X	Microturbine	0.13	Natural Gas	Hot & Chilled Water
Confidential	Allegheny	X		Microturbine	0.005	Natural Gas	Hot Water
Peoples Etna Office	Allegheny	X	X	Reciprocating Engine	0.035	Natural Gas	Hot Water
Robotany Microgrid	Allegheny	X		Reciprocating Engine	1.732	Natural Gas	Unknown
South Hills Retirement	Allegheny	X	X	Microturbine	0.065	Natural Gas	Hot Water
U.S. Steel - Clairton	Allegheny	X		Unknown	25	Coke Gas	Unknown
U.S. Steel - Edgar Thomson	Allegheny	X		Unknown	52	Coke Gas	Unknown
Confidential	Beaver	X	X	Reciprocating Engine	0.07	Natural Gas	Hot Water
Albright College	Berks		X	Combustion Turbine	1.1	Natural Gas	Hot & Chilled Water
Confidential	Berks		X	Reciprocating Engine	4.4	Natural Gas	Steam, Hot Water
Reading Hospital	Berks	X	X	Steam Turbine	10	Natural Gas	Steam
Norfolk Southern	Blair	X	X	Steam Turbine	2	Natural Gas	Steam, Hot Water
Penn England Farm	Blair			Reciprocating Engine	0.16	Biogas	Digester Temperature Control, Hot Water
American Refining Group	Bradford	X		Steam Turbine	2	Natural Gas	Steam
Jeld-Wen/Craftmasters	Bradford	X		Steam Turbine	1	Natural Gas	Steam
Robert Packer Hospital	Bradford	X	X	Steam Turbine	2	Natural Gas	Steam

Abzena	Bucks	X	X	Microturbine	0.26	Natural Gas	Unknown
Doylestown Hospital	Bucks	X	X	Reciprocating Engine	1.6	Natural Gas	Unknown
Seneca Landfill	Butler		X	Reciprocating Engine	0.3	Biogas	Hot Water
Dept. of L&I GH Andrews Center	Cambria	X		Steam Turbine	0.45	Natural Gas	Steam
Confidential	Cambria	X		Steam Turbine	2	Natural Gas	Steam
Penn State University 1	Centre	X	X	Steam Turbine	7	Natural Gas	Steam
Penn State University 2	Centre		X	Combustion Turbine	6	Natural Gas	Steam
Confidential	Clarion	X	X	Steam Turbine	17.6	Natural Gas	Steam
Croda, Inc.	Clinton	X	X	Microturbine	1	Natural Gas	Steam, Hot Water
Schrack Farms	Clinton			Reciprocating Engine	0.2	Biogas	Digester Temperature Control, Hot Water
Bortnick Dairy	Crawford			Reciprocating Engine	0.45	Biogas	Digester Temperature Control
Defense Logistics Agency	Cumberland		X	Combustion Turbine	0.42	Natural Gas	Hot Water
Messiah College	Cumberland	X	X	Microturbine	1	Natural Gas	Hot Water
Hard Earned Acres, Inc.	Cumberland			Reciprocating Engine	0.135	Biogas	Unknown
Mains Farm	Cumberland			Reciprocating Engine	0.074	Biogas	Digester Temperature Control, Hot Water
Hershey Medical Center	Dauphin	X	X	Combustion Turbine	6.7	Natural Gas	Steam
Mt. Joy Wire	Dauphin	X	X	Reciprocating Engine	1.059	Natural Gas	Steam, Hot Water
Phoenix Contact	Dauphin	X	X	Microturbine	1	Natural Gas	Hot & Chilled Water
PSECU	Dauphin	X	X	Microturbine	0.8	Natural Gas	Hot Water
The Hershey Company	Dauphin		X	Reciprocating Engine	0.8	Renewable Gas/Natural Gas	Unknown
UGI Utilities, Middletown	Dauphin		X	Microturbine	0.13	Natural Gas	Hot Water
Kimberly-Clark	Delaware	X	X	Combustion Turbine	23	Natural Gas	Steam
Domtar Paper Company	Elk	X		Steam Turbine	60	Natural Gas	Steam
Confidential	Fayette		X	Reciprocating Engine	2	Natural Gas/Biogas	Unknown
Slate Ridge Farm	Franklin			Reciprocating Engine	0.6	Biogas	Grain Drying
Borough of Chambersburg/Blue Ridge Landfill	Franklin			Unknown	6.4	Landfill Gas	Unknown

Indiana University of PA	Indiana		X	Reciprocating Engine	24	Natural Gas/Diesel	Steam, Hot Water
Confidential	Indiana		X	Fuel Cell	0.005	Natural Gas	Hot Water
Brookside Dairy	Indiana			Reciprocating Engine	0.85	Biogas	Digester Temperature Control, Hot Water
Myron Gehman	Juniata			Reciprocating Engine	0.225	Biogas	Unknown
Reinford Farms Inc.	Juniata			Reciprocating Engine	0.14	Biogas	Heat, Hot Water
Reinford-Freymoyer LLC	Juniata			Reciprocating Engine	0.175	Biogas	Unknown
Lackawanna County Prison	Lackawanna	X	X	Reciprocating Engine	0.225	Natural Gas	Hot Water
Brubaker Farms	Lancaster	X		Reciprocating Engine	0.335	Biogas	Process Heating
Dart Container	Lancaster	X		Reciprocating Engine	11.4	Biomass/Landfill Gas	Unknown
Eden Resort	Lancaster	X	X	Reciprocating Engine	0.4	Natural Gas	Hot Water
F&M College	Lancaster	X	X	Reciprocating Engine	1	Natural Gas	Steam, Hot Water
Lancaster General Hospital	Lancaster	X	X	Combustion Turbine	3.2	Natural Gas	Steam, Hot Water
Masonic Homes	Lancaster	X	X	Microturbine	0.39	Natural Gas	Hot Water
Jay C & Andrea Sensenig	Lancaster			Reciprocating Engine	0.1	Biogas	Digester Temperature Control, Hot Water
Klines Services Inc.	Lancaster			Unknown	0.6	Biogas	Digester Temperature Control
Landyshade Farms	Lancaster			Reciprocating Engine	0.08	Biogas	Unknown
Oregon Dairy Farm	Lancaster			Reciprocating Engine	0.12	Biogas	Digester Temperature Control, Heating, Hot Water
S&A Kreider and Sons Inc.	Lancaster			Reciprocating Engine	0.58	Biogas	Unknown
UGI Headquarters	Lancaster	X	X	Microturbine	0.13	Natural Gas	Hot & Chilled Water
Wanner's Pride-N-Joy Farm	Lancaster			Reciprocating Engine	0.13	Biogas	Digester Temperature Control, Hot Water
Yippee Farms/Arlin Benner	Lancaster			Reciprocating Engine	0.38	Biogas	Heat & Hot Water

Downs Racing	Luzerne	X	X	Reciprocating Engine	0.828	Natural Gas	Hot Water
Geisinger Health - Wyoming Valley	Luzerne	X	X	Combustion Turbine	1.125	Natural Gas	Steam, Hot & Chilled Water
Pepsico/Gatorade	Luzerne	X	X	Steam Turbine	2	Natural Gas	Hot Water
Williamsport Hospital	Lycoming	X	X	Reciprocating Engine	1.9	Natural Gas	Unknown
Hermitage Municipal Authority	Mercer			Unknown	0.8	Biogas	Unknown
Kish-View Farms	Mifflin			Reciprocating Engine	0.18	Biogas	Unknown
Abington Hospital	Montgomery	X	X	Combustion Turbine	4.6	Natural Gas	Steam
Holy Redeemer Hospital	Montgomery	X	X	Reciprocating Engine	2	Natural Gas	Hot Water
Janssen (Johnson & Johnson)	Montgomery	X	X	Reciprocating Engine	3.8	Natural Gas	Steam, Hot Water
Merck & Co. 1	Montgomery	X	X	Combustion Turbine	38	Natural Gas	Steam
Merck & Co. 2	Montgomery	X	X	Combustion Turbine	27	Natural Gas	Steam
Valley Forge Casino & Resort	Montgomery	X	X	Microturbine	0.065	Natural Gas	Hot Water
Villanova University	Montgomery	X	X	Reciprocating Engine	2	Natural Gas	Steam
Geisinger Hospital	Montour	X	X	Combustion Turbine	5	Natural Gas	Steam, Hot & Chilled Water
FreshPet	Northampton	X	X	Reciprocating Engine	1.429	Natural Gas	Steam, Hot Water
Green Energy Park by Chrin Brothers	Northampton			Unknown	3.2	Landfill Gas	Unknown
Furmano Foods	Northumberland			Reciprocating Engine	0.25	Biogas	Unknown
1199 Ludlow	Philadelphia		X	Unknown	0.13	Natural Gas	Hot Water
1500 Locust LTD	Philadelphia	X	X	Microturbine	0.13	Natural Gas	Hot Water
AIMCO - Sterling Apt. Homes	Philadelphia		X	Unknown	0.21	Natural Gas	Heat, Hot Water
AIMCO - Univ. Sq.	Philadelphia		X	Unknown	0.14	Natural Gas	Heat, Hot Water
AIMCO -39	Philadelphia		X	Unknown	0.14	Natural Gas	Heat, Hot Water
Aria Health - Torresdale Campus	Philadelphia	X		Reciprocating Engine	1.1	Natural Gas	Hot Water
Cancer Treatment Center of America (Eastern Regional Medical Center)	Philadelphia	X	X	Reciprocating Engine	1.1	Natural Gas	Heat, Hot Water, A/C

Cathedral Village	Philadelphia	X	X	Unknown	0.225	Natural Gas	Heat, Hot Water, A/C
FMC Tower	Philadelphia	X	X	Microturbine	0.13	Natural Gas	Hot Water
Grays Ferry Cogen	Philadelphia	X		Combustion Turbine	118	Natural Gas	Steam
Imperial Tower Apts.	Philadelphia		X	Unknown	0.065	Natural Gas	Heat, Hot Water
Independence Visitor Center	Philadelphia	X	X	Reciprocating Engine	0.075	Natural Gas	Heat, Hot Water, A/C
Lima Co.	Philadelphia		X	Unknown	0.035	Natural Gas	Heat, Hot Water
Logan Hotel	Philadelphia	X	X	Microturbine	0.18	Natural Gas	Heat, Hot Water, A/C
Newman & Company	Philadelphia	X		Steam Turbine	1.8	Natural Gas/Fuel Oil	Steam
Park Towne Place Associates 1	Philadelphia	X	X	Unknown	0.21	Natural Gas	Heat, Hot Water, A/C
Park Towne Place Associates 2	Philadelphia	X	X	Unknown	0.21	Natural Gas	Heat, Hot Water, A/C
PGW	Philadelphia		X	Unknown	0.2	Natural Gas	Heat, Hot Water, A/C
Phil. College Osteo Medicine	Philadelphia		X	Unknown	0.13	Natural Gas	Heat
Phil. Industrial Dev. Corp.	Philadelphia		X	Unknown	8	Natural Gas	Unknown
Rittenhouse Claridge	Philadelphia	X	X	Reciprocating Engine	0.225	Natural Gas	Heat, Hot Water
SEPTA - Midvale Junction	Philadelphia	X	X	Combustion Turbine	7.8	Natural Gas	Hot Water
Sewage Plant (City of Philly)	Philadelphia	X	X	Reciprocating Engine	5.67	Natural Gas/Biogas	Hot Water
Simpson House	Philadelphia	X	X	Reciprocating Engine	0.265	Natural Gas	Heat, Hot Water
Confidential	Philadelphia		X	Unknown	3	Natural Gas	Unknown
Urban Outfitters	Philadelphia		X	Unknown	0.8	Natural Gas	Unknown
Four Winds Farm	Potter			Reciprocating Engine	0.13	Biogas	Digester Temperature Control, Hot Water
Omnova	Schuylkill	X	X	Reciprocating Engine	1.426	Natural Gas	Steam, Heat
Yuengling Brewery	Schuylkill	X	X	Reciprocating Engine	0.86	Methane/Natural Gas	Hot Water
Yuengling Creamery	Schuylkill	X		Reciprocating Engine	0.18	Biogas/Natural Gas	Anaerobic Digester Heating & Space Heating

David High Farm	Snyder			Reciprocating Engine	0.022	Biogas	Digester Temperature Control, Hot Water
Ideal Family Farms	Snyder			Reciprocating Engine	0.12	Biogas	Digester Temperature Control, Heating
Dovan Farms	Somerset			Reciprocating Engine	0.8	Biogas	Digester Temperature Control, Hot Water
Hillcrest Saylor's Farm	Somerset			Reciprocating Engine	0.13	Biogas	Digester Temperature Control, Hot Water
SCI Laurel Highlands	Somerset	X	X	Steam Turbine	6.8	Methane/Natural Gas	Steam
Somerset County Conservation District	Somerset			Reciprocating Engine	0.17	Biogas	Unknown
Drew Remley Farm	Tioga			Reciprocating Engine	0.22	Biogas	Unknown
Bucknell University	Union	X	X	Combustion Turbine	5.5	Natural Gas/Oil	Steam
Evangelical Community Hospital	Union			Unknown	Unknown	Biomass	Unknown
Confidential	Warren	X		Steam Turbine	29	Natural Gas	Unknown
Firestone	Westmoreland		X	Microturbine	0.065	Natural Gas	Hot Water
Proctor & Gamble 1	Wyoming	X	X	Steam Turbine	57.8	Natural Gas	Steam
Proctor & Gamble 2	Wyoming	X		Steam Turbine	53	Natural Gas	Steam
PH Glatfelter	York	X		Steam Turbine	35	Black Liquor	Steam
York Solid Waste Authority	York		X	Steam Turbine	42	Solid Waste/Natural Gas	Steam

Appendix C – Government Agency Funded CHP Systems

The following CHP systems have been identified as being awarded grant or loan funding by government agencies. The list below was produced with the help of the Department of Community and Economic Development (DCED) and the Department of Environmental Protection (DEP). It should be noted that although these entities were awarded funding, it does not mean that the projects were completed using any, or all, of the funding that was awarded. TUS also utilized EPA’s Livestock Anaerobic Digester Database to locate CHP systems located on farms and that were awarded USDA funding.

In addition, TUS staff has attempted to identify which of these systems were completed, or in some stage of construction, through web-scraping exercises, cross-referencing known systems, and communication with other reporting entities such as the EDCs, NGDCs, DCED, and DEP. TUS makes no guarantees that the following systems are still operational, though systems below that have also been reported by EDCs and NGDCs are likely still operational.

CHP System	County	Funding Source	Project Type	Nameplate Capacity (MW)	Awarded Grant	Awarded Loan	Operational
Hillandale Gettysburg	Adams	CFA	Biomass Gasification	2.5		\$5,000,000	Yes
Knouse Foods	Adams	PEDA 2014	CHP	1.2	\$1,000,000	n/a	Yes
Knouse Foods Coop Inc.	Adams	CFA	CHP	1.2	\$780,062	n/a	Yes
Duquesne University	Allegheny	CFA	CHP	5.3	\$2,000,000	n/a	Yes
Peoples Natural Gas	Allegheny	CFA	CHP	2	\$1,794,059	n/a	Yes
Albright College	Berks	CFA	CHP	1		\$151,748	Yes
		SEP-PEDA 2010 ARRA	CHP	1	\$846,000	n/a	Yes
Penn England Farm	Blair	USDA	Anaerobic Digester	0.16	Unknown	Unknown	Yes
Jeld-Wen/Craftmaster Manufacturing Inc.	Bradford	SEP-Green Energy CHP	CHP	1.34	\$1,358,868	n/a	Yes
Global Tungsten & Powders Corp	Bradford	CFA	CHP	7.3	\$2,000,000	0	Unknown
Robert Packer Hospital	Bradford	CFA	CHP	2	\$1,589,139	n/a	Yes
Abzena	Bucks	SEP-PEDA 2008	CHP	0.26	\$1,000,000	n/a	Yes
Doylestown Hospital	Bucks	CFA	CHP	1.6	\$442,273	n/a	Yes
Seneca Landfill	Butler	CFA	CHP	0.3		\$712,110	Yes
Oak Spring Farms	Centre	CFA	Anaerobic Digester	0.285	\$625,062	n/a	Unknown
Oak Spring Farms	Centre	CFA	Anaerobic Digester	0.19	\$625,082	n/a	Unknown

Hickory Hollow Farms	Chester	CFA	Anaerobic Digester	0.1	\$365,690	n/a	Unknown
Paris Cleaners	Clearfield	CFA	CHP	0.874	\$43,000	n/a	Yes
Croda, Inc.	Clinton	CFA	CHP	1	\$950,000	n/a	Yes
Autoneum North America Inc.	Columbia	CFA	CHP	2	\$1,000,000	\$522,968	Unknown
Bortnick Dairy	Crawford	USDA	Anaerobic Digester	0.45	Unknown	Unknown	Yes
Dickinson College	Cumberland	CFA	CHP	1		\$1,225,000	Unknown
East Pennsboro Township	Cumberland	SEP-Green Energy CHP	CHP	0.117	\$500,000	n/a	Yes
Hard Earned Acres Inc.	Cumberland	CFA	Anaerobic Digester	0.135	\$300,115	0	Yes
		USDA	Anaerobic Digester		Unknown	Unknown	
Derry Township Municipal Authority	Dauphin	SEP-Green Energy Biogas	Biogas	0.233	\$500,000	n/a	Yes
Phoenix Contact Services, Inc.	Dauphin	CFA	CHP	1	\$975,000	n/a	Yes
The Pennsylvania State University	Dauphin	CFA	CHP	6	\$940,000	n/a	Yes
LCP Generation Partners	Delaware	CFA	CHP	2	\$965,000	n/a	Yes
Borough of Chambersburg/Blue Ridge Landfill	Franklin	CFA	Landfill Gas	6.4	\$900,000	n/a	Yes
Myron Gehman	Juniata	CFA	Digester Systems	0.225	\$607,081	n/a	Yes
Reinford Farms Inc.	Juniata	CFA	Anaerobic Digester	0.14	\$1,007,000	n/a	Yes
		USDA			Unknown	Unknown	
Reinford-Freymoyer LLC	Juniata	CFA	Anaerobic Digester	0.175	\$388,113	0	Yes
Lackawanna County Commissioners	Lackawanna	CFA	CHP	0.225	\$302,816	n/a	Yes
Brubaker Farms LLC	Lancaster	CFA	Anaerobic Digester	0.4	\$725,013	n/a	Yes
		USDA			Unknown	Unknown	
Eden Resort	Lancaster	CFA	CHP	0.333	\$337,930	n/a	Yes
Sensenig Farms	Lancaster	CFA	Anaerobic Digester	0.1	\$575,000	n/a	Yes
		USDA			Unknown	Unknown	
Klines Services Inc.	Lancaster	PEDA 2010 GG II	Anaerobic Digester	0.6	\$250,000	n/a	Yes

Lancaster General Hospital	Lancaster	CFA	CHP	3.5	\$1,300,000	n/a	Yes
MBC Developers L.P./Franklin & Marshall College	Lancaster	CFA	CHP	1.2	\$614,000	\$939,000	Yes
Mount Joy Wire Corporation	Lancaster	SEP-Green Energy CHP	CHP	1	\$1181,250	n/a	Yes
Wanner's Pride-N-Joy Farm	Lancaster	USDA	Anaerobic Digester	0.13	Unknown	Unknown	Yes
S&A Kreider and Sons Inc.	Lancaster	CFA	Anaerobic Digester	0.58	\$632,848	n/a	Yes
Yippee Farms/Arlin Benner	Lancaster	CFA	Anaerobic Digester	0.38	\$838,690	0	Yes
		USDA	Anaerobic Digester		Unknown	Unknown	
Bayer Healthcare LLC	Lebanon	CFA	CHP	2	\$1,541,347	n/a	Yes
Downs Racing L.P./Mohegan Tribal Gaming Authority	Luzerne	CFA	CHP	0.75	\$950,000	n/a	Yes
The Williamsport Hospital & Medical Center	Lycoming	SEP-PEDA 2008	CHP	1.9	\$1,000,000	n/a	Yes
American Refining Group Inc.	McKean	SEP-Green Energy CHP	CHP	0.875	\$831,072	n/a	Yes
Hermitage Municipal Authority	Mercer	SEP-Green Energy Biogas	Anaerobic Digester	0.8	\$350,000	n/a	Yes
Abington Memorial Hospital	Montgomery	SEP-Green Energy CHP	CHP	4.5	\$3,000,000	n/a	Yes
Arkema Inc	Montgomery	CFA	CHP	1.3	\$464,000	n/a	Yes
Clemens Food Group, LLC/Hatfield Quality Meats	Montgomery	CFA	CHP	4.4	\$2,000,000	n/a	Unknown
Geisinger Medical Center	Montour	SEP-Green Energy CHP	CHP	5	\$2,250,000	n/a	Yes
Easton Area Joint Sewer Authority	Northampton	CFA	Anaerobic Digester	0.66	\$1,737,000	n/a	Unknown
Freshpet Inc.	Northampton	CFA	CHP	1.137	\$694,928	n/a	Yes
Green Energy Park by Chrin Brothers	Northampton	SEP-PEDA 2009	Landfill Gas	3.2	\$1,000,000	n/a	Yes
Furmano Foods Inc.	Northumberland	SEP-Green Energy Biogas	Anaerobic Digester	0.25	\$850,000	n/a	Yes

Furmano Foods Inc.	Northumberland	CFA	Anaerobic Digester	0.25	\$1,750,000	n/a	Yes
Perry County Economic Development Authority	Perry	CFA	CHP	2.5		\$1,782,690	Unknown
Aria Health Systems	Philadelphia	PEDA 2014	CHP	1.1	\$500,000	n/a	Yes
ENER-G Rudox, Inc./Simpson House	Philadelphia	CFA	CHP	0.265	\$400,000	n/a	Yes
ENER-G Rudox, Inc./Cathedral Village	Philadelphia	CFA	CHP	0.265	\$500,000	n/a	Yes
OP Property Management, LLC	Philadelphia	SEP-Green Energy CHP	CHP	0.6	\$1,087,500	n/a	Yes
Philadelphia Gas Works	Philadelphia	SEP-Green Energy CHP	CHP	0.2	\$465,000	n/a	Yes
SFG RC CHP LLC/Rittenhouse Square Park	Philadelphia	CFA	CHP	0.225	\$150,000	n/a	Yes
Urban Outfitters	Philadelphia	CFA	Fuel Cell	0.2	\$432,000	n/a	Yes
Urban Outfitters	Philadelphia	CFA	Fuel Cell	0.6	\$1,274,843	n/a	Yes
Four Winds Farm	Potter	USDA	Anaerobic Digester	0.13	Unknown	Unknown	Yes
Keystone Potato Products LLC	Schuylkill	CFA	CHP	0.54	\$559,620	\$373,080	Unknown
Omnova Solutions Inc.	Schuylkill	CFA	CHP	1.5	\$1,115,464	n/a	Yes
Ideal Family Farms	Snyder	SEP-Green Energy Biogas	Anaerobic Digester	0.12	\$433,716	n/a	Yes
		USDA			Unknown	Unknown	
Dovan Farms	Somerset	USDA	Anaerobic Digester	0.8	Unknown	Unknown	Yes
Somerset County Conservation Dist.	Somerset	SEP- Energy Harvest	Anaerobic Digester	0.17	\$199,000	n/a	Unknown
Drew Remley Farm	Tioga	CFA	Anaerobic Digester	0.22	\$546,382	n/a	Yes
Evangelical Community Hospital	Union	PEDA 2011	Biomass	Unknown	\$250,000	n/a	Yes
Native Energy inc.	Westmoreland	SEP-Green Energy Biogas	Anaerobic Digester	0.1	\$893,752	n/a	Yes
PH Glatfelter Company	York	CFA	CHP	52.8	\$3,000,000	n/a	Yes
York City Sewer Authority	York	SEP-Green Energy Biogas	Anaerobic Digester	42	\$500,000	n/a	Yes
		CFA	CHP		0	\$1,500,000	Yes

SEP – State Energy Plan

PEDA – Pennsylvania Energy Development Authority

CFA – Commonwealth Financing Authority

USDA – United States Department of Agriculture

Biomass and Digester Systems are functionally similar to CHP in that these systems produce electrical and thermal energy.

A map, produced by DEP, is available to view the locations of these systems at <https://www.depgis.state.pa.us/EPOAlternativeEnergyViewer/>.



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