



# **Electric Power Outlook for Pennsylvania 2007-2012**

**August 2008**



**Pennsylvania Public Utility Commission**

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## EXECUTIVE SUMMARY

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Each public utility which produces, generates, distributes, or furnishes electricity must annually submit to the Commission information concerning its future plans to meet its customers' demands. 66 Pa.C.S. § 524. The law requires the Commission to prepare a report summarizing and discussing the data provided on or before Sept. 1. The Commission is required to submit the report to the General Assembly, the Governor, the Office of Consumer Advocate (OCA) and each affected public utility. The Commission adopted regulations at Title 52 §§ 57.141 – 57.154, Annual Resource Planning Report, in order to comply with the requirements of the public utility law.

This report concludes that there is sufficient generation, transmission and distribution capacity to reasonably meet the needs of Pennsylvania consumers for the near future. However, there are generation adequacy concerns beginning in 2013.

Regional generation adequacy and reserve margins of the Mid-Atlantic area have been maintained. While sufficient generation capacity is expected until at least 2013, the Commission will continue its current policy of encouraging generation adequacy within the region.

With respect to transmission adequacy, the transmission system in the Mid-Atlantic Region has sufficient capacity to meet demand. Transmission expansions and upgrades are being planned for the next five years to reinforce the bulk power grid.

To summarize the relevant statistics in this report, electricity demand in Pennsylvania has grown at a rate of 1.8 percent annually in the past 15 years. This is an aggregate figure for all sectors, including industrial, commercial and residential. Average total sales growth from 2002 to 2007 was also 1.8 percent. Aggregate sales in 2007 totaled approximately 149 billion kilowatthours, a 2.8 percent increase from that of 2006. The current projections to the year 2012 show electricity demand growth at 1.4 percent annually. This includes a residential growth rate of 1.5 percent, a commercial growth rate of 1.6 percent and an industrial growth rate of 1.1 percent.

Regionally, generating resources are projected to be adequate for the next several years. Reliability *First's* net internal demand forecast shows it increasing from 180,400 MW in 2007 to 205,300 MW in 2016 at an average annual growth rate of 1.5 percent. By 2013, additional capacity resources of 1,500 MW will likely be needed to maintain an adequate reserve margin. Net capacity resources are projected to be 220,150 MW by 2016, resulting in a reserve margin of 7.2 percent, which is 11,100 MW short of the 15% reserve margin. This forecast does not include thousands of megawatts of "possible capacity additions" identified by the

PJM and Midwest ISO generation interconnection queues as projects in service after 2012. These projects are not counted toward meeting reserve requirements as this capacity is not committed to serve regional load.

At this time, no forecasts have been made whether the necessary additional capacity will be long lead time coal and nuclear fueled or shorter lead time plants such as natural gas fueled. However, it appears more and more unlikely that coal or nuclear fueled capacity could be brought on-line by 2013 without a significant commitment to such a facility in the very near future.

Pennsylvania must maintain its commitment to the basics of energy production and to encourage new initiatives in demand side response, energy efficiency, renewable energy, and other new technologies so we can continue as a national leader in these areas. We also need to continue providing assistance to low income customers to reduce their energy consumption.

To this end, the Commission is implementing the requirements of Act 213 (the Alternative Energy Portfolio Standards Act), which became effective on Feb. 28, 2005. Act 213 requires that an annually increasing percentage of electricity sold to retail customers be derived from alternative energy resources, including solar, wind, low-impact hydropower, geothermal, biologically derived methane gas, fuel cells, biomass, coal mine methane, waste coal, demand side management, distributed generation, large-scale hydropower, by-products of wood-pulping and wood manufacturing, municipal solid waste and integrated combined coal gasification technology. A subsequent amendment to Act 213 requires updating of the Commission's net-metering regulations. Among other things, this will allow net-metered customer-generators to receive full retail value for all energy produced in excess of internal use.

The Commission issued a Final Order governing the participation of demand side management, energy efficiency and load management programs and technologies in the alternative energy market. The Commission also issued Final Orders governing net metering and interconnection for customer-generators using renewable resources, consistent with the goal of Act 213, and promoting onsite generation by eliminating barriers which may have previously existed regarding net metering and interconnection.

The Pennsylvania Low Income Usage Reduction Program (LIURP) is a statewide, utility-sponsored, residential usage reduction program mandated by Commission regulations at 52 Pa. Code Chapter 58. All EDCs have such programs. The primary goal of LIURP is to assist low-income residential customers to reduce energy bills through usage reduction (energy efficiency and conservation) and, as a result, to make bills more affordable. For more information on LIURP, see "Report on Universal Service Programs" at: [http://www.puc.state.pa.us/general/publications\\_reports/publications\\_reports\\_yearly.aspx](http://www.puc.state.pa.us/general/publications_reports/publications_reports_yearly.aspx).

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## Section 1 - Introduction

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### Purpose

*Electric Power Outlook for Pennsylvania 2007-2012* is a statistical report summarizing and discussing the current and future electric power supply and demand situation for the eight major investor-owned jurisdictional electric distribution companies (EDCs) operating within the Commonwealth and the entities responsible for maintaining the reliability of the bulk electric supply system within the region. Any comments or conclusions contained in this report do not necessarily reflect the views or opinions of the Commission or individual Commissioners. Although this report has been issued by the Commission, it is not to be considered or construed as approval or acceptance by the Commission of any of the plans, assumptions or calculations made by the EDCs or regional reliability entities and reflected in the information submitted.

The Bureau of Conservation, Economics and Energy Planning (CEEP) prepares this report, pursuant to Title 66, Pennsylvania Consolidated Statutes, Section 524. This report is submitted annually to the General Assembly, the Governor, the Office of Consumer Advocate (OCA) and each affected public utility. The report is also made available to the general public on the Commission's Web site.<sup>1</sup>

The information contained in this report includes a brief description of the existing generation, transmission and distribution system for each EDC, highlights of the past year, information on EDCs' projections of peak load and a discussion of historical trends in electric utility forecasting. Since the eight largest EDCs operating in Pennsylvania represent approximately 99 percent of jurisdictional electricity sales, the smaller companies have not been included in this report.

The report also provides a regional perspective with statistical information on the projected resources and aggregate peak loads for the regional reliability councils.

Informational sources include data submitted by jurisdictional investor-owned EDCs, which is filed annually pursuant to the Commission's regulations.<sup>2</sup> Sources also include data submitted by regional reliability councils to the North American Electric Reliability Corporation (NERC) which is subsequently forwarded to the federal Energy Information Agency (EIA).

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<sup>1</sup> See [http://www.puc.state.pa.us/general/publications\\_reports/pdf/EPO\\_2008.pdf](http://www.puc.state.pa.us/general/publications_reports/pdf/EPO_2008.pdf).

<sup>2</sup> 52 Pa. Code §§ 57.141-57.154.



## Regional Reliability Organizations

In Pennsylvania, all major electric utilities are interconnected with neighboring systems extending beyond state boundaries. These systems are organized into regional entities – regional reliability councils – which are responsible for ensuring the reliability of the electric system. The regional reliability council covering Pennsylvania is the newly formed Reliability *First* Corporation (RFC). RFC was formed by the merger of the Mid-Atlantic Area Council (MAAC), the East Central Area Reliability Coordination Agreement (ECAR) and Mid-America Interconnected Network Inc. (MAIN). RFC is one of eight regional councils of NERC and serves the states of Delaware, Illinois, Indiana, Kentucky, Maryland, Michigan, New Jersey, Ohio, Pennsylvania, Virginia, West Virginia, Wisconsin and the District of Columbia. RFC became operational on Jan. 1, 2006.

NERC establishes criteria, standards and requirements for its members and all control areas. All control areas must operate in a manner such that system instability, uncontrolled system separation and cascading outages will not occur as a result of the most severe single contingency.

RFC sets forth the criteria which individual utilities and systems must follow in planning adequate levels of generating capability. Among the factors which are considered in establishing these levels are load characteristics, load forecast error, scheduled maintenance requirements and the forced outage rates of generating units. The RFC reliability standards require that sufficient generating capacity be installed to ensure that the probability of system load exceeding available capacity is no greater than one day in 10 years. Load serving entities that are members of RFC have a capacity obligation determined by evaluating individual system load characteristics, unit size and operating characteristics.

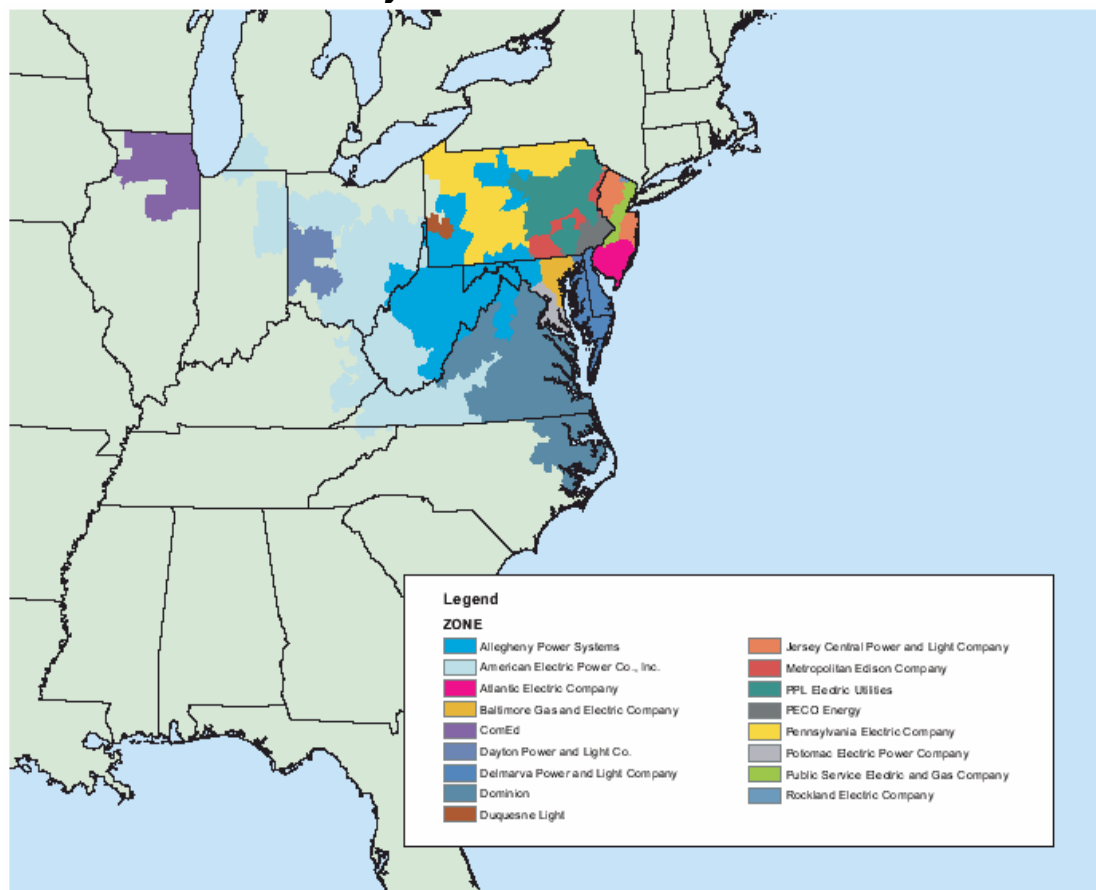
The PJM Interconnection L.L.C. (PJM) is a regional transmission organization (RTO) that ensures the reliability of the largest centrally dispatched control area in North America. PJM coordinates the operation of more than 160,000 MW of generating capacity and more than 56,000 miles of transmission lines. The PJM RTO coordinates the movement of electricity through all or parts of Delaware, Illinois, Indiana, Kentucky, Maryland, Michigan, New Jersey, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia and the District of Columbia.

On April 1, 2002, PJM West became operational, broadening the regional scope of the electric grid operator for the Mid-Atlantic Region, to include Allegheny Power and marking the first time, nationally, that two separate control areas are operated under a single energy market and a single governance structure. The PJM West offices located in Greensburg, Pennsylvania, provide transmission and generation coordination for the PJM West area.

On May 1, 2004, PJM began managing the flow of wholesale electricity over Commonwealth Edison's 5,000 miles of transmission lines in Illinois, making PJM the world's largest grid operator, meeting a peak demand of 87,000 MW. On Oct. 1, 2004, PJM began managing American Electric Power's (AEP's) eastern control area, including nearly 22,300 miles of high-voltage transmission lines within a seven-state area and 23,800 MW of generating capacity. At the same time, Dayton Power and Light integrated into the PJM RTO with 1,000 miles of transmission lines and 4,450 MW of generation. Also, about 20 municipal electric companies, cooperatives and generators in the AEP area have joined PJM. On Jan. 1, 2005, PJM began managing the wholesale flow of electricity for Duquesne, with 3,400 MW of capacity and 620 miles of transmission lines. These entities, including Allegheny, comprise PJM West.

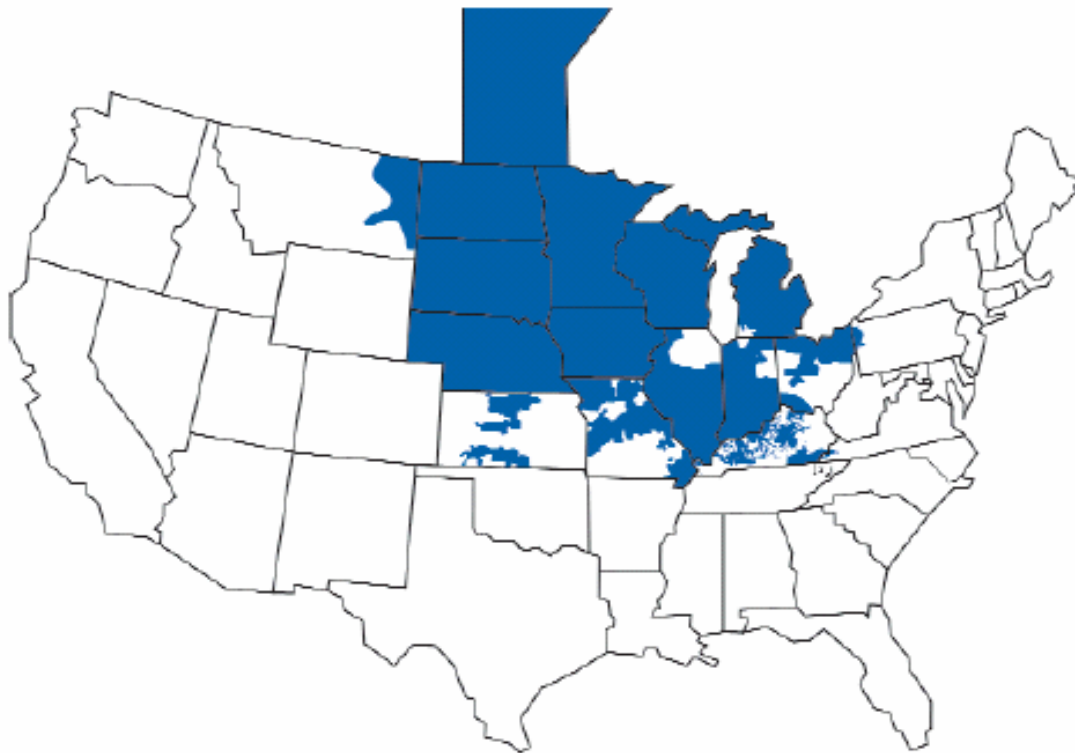
Dominion Virginia Power (Dominion) was integrated into the PJM RTO on May 1, 2005. Dominion's control area, covering parts of Virginia and North Carolina, operates separately under the single PJM energy market as PJM South, including an additional 6,100 miles of transmission lines and 26,500 MW of generating capacity.

**PJM RTO Service Territory**



The Midwest Independent System Operator (Midwest ISO) is the nation's first RTO approved by the Federal Energy Regulatory Commission (FERC). The Midwest ISO is based in Carmel, Indiana, and is responsible for monitoring the electric transmission system, ensuring equal access to the transmission system and maintaining and improving electric system reliability in 15 Midwest states and the Canadian province of Manitoba.

Utilities with 94,000 miles of transmission lines covering nearly 1 million square miles from Manitoba, Canada, to Kentucky have committed to participate in the Midwest ISO. Pennsylvania Power Company is currently the only Pennsylvania utility in the Midwest ISO. Duquesne Light Company has, however, received conditional approval from the FERC to transfer from PJM to the Midwest ISO.



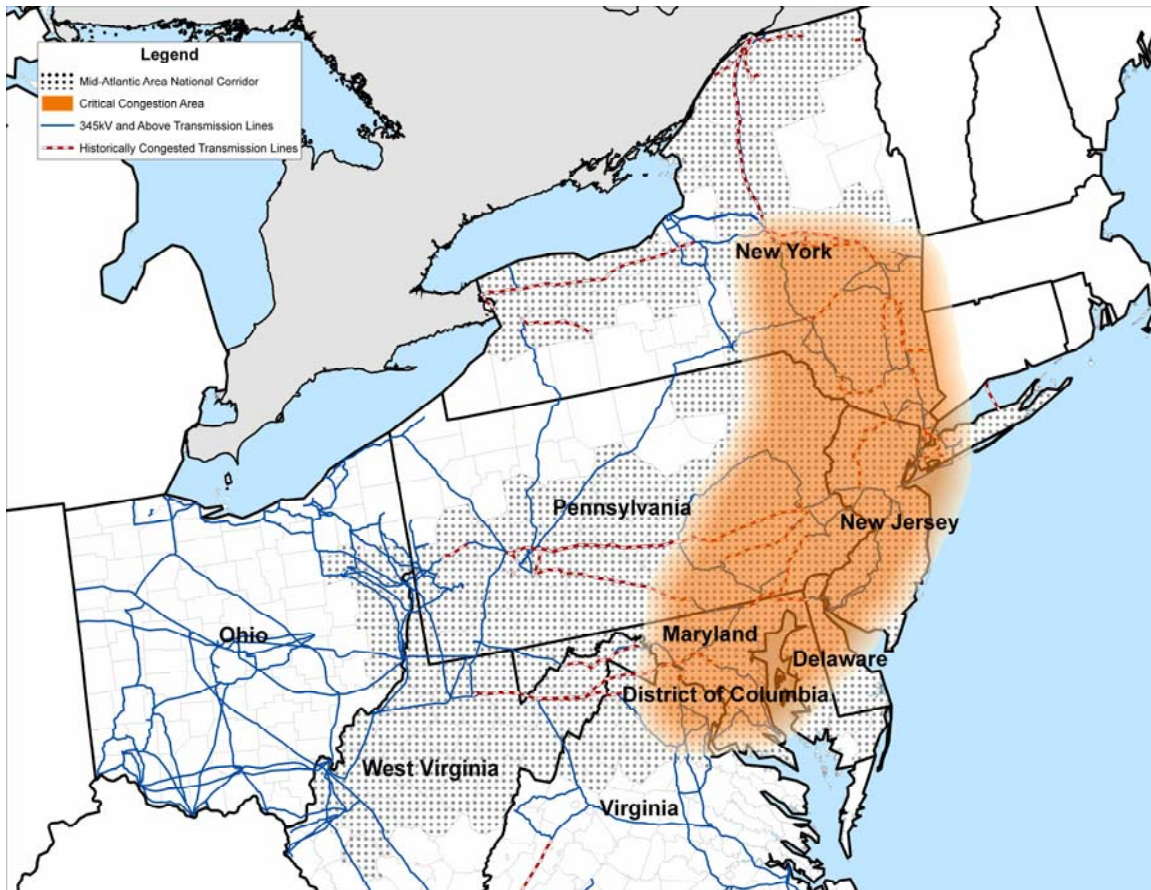
**Midwest ISO Reliability Area**

The Midwest ISO and PJM are both members of RFC.

## **Transmission Line Projects**

On May, 2007, the U.S. Department of Energy published its *Draft National Interest Electric Transmission Corridor Designations* which designates all or major portions of West Virginia, Pennsylvania, Maryland, Delaware, the District of

Columbia, New Jersey, New York and Virginia, as well as minor portions of Ohio as National Interest Electric Transmission Corridors under Section 1221 of the Energy Policy Act of 2005. The final designation was effective Oct. 5, 2007, and will remain in effect until Oct. 7, 2019. The corridor includes 52 out of Pennsylvania's 67 counties. Section 1221 gives FERC authority to approve the construction or modification of electric transmission facilities within a designated corridor if the state does not approve an application within one year.



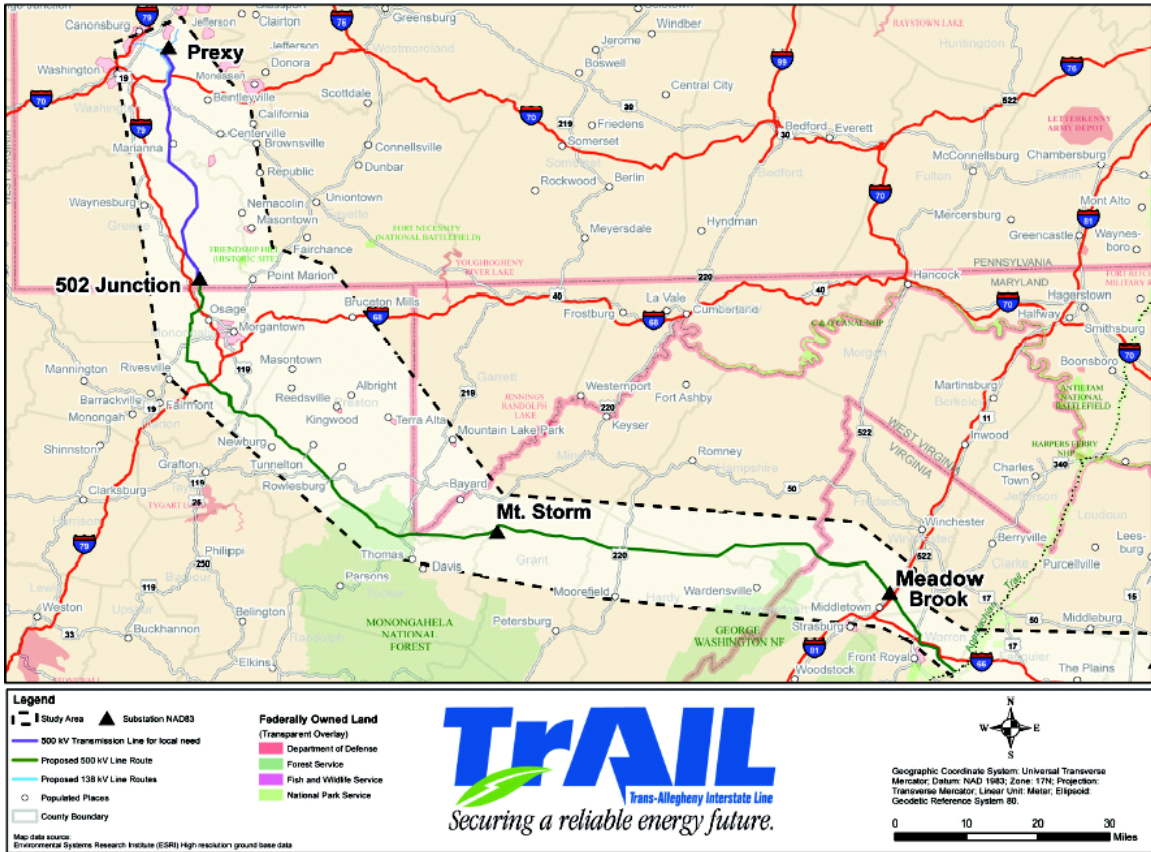
In June 2006, PJM approved a five-year regional transmission expansion plan (RTEP) designed to maintain the reliability of the electric transmission grid in the PJM Region. The RTEP identified three major transmission line projects within the region, which, as proposed, would have a significant impact on Pennsylvania.

The RTEP recommended that Allegheny Power build facilities constituting the Trans-Allegheny Interstate Line ("TrAIL"). TrAIL will extend from Southwestern Pennsylvania (37 miles) to West Virginia (114 miles) to Northern Virginia (28 miles). In-service dates range from 2009 to mid-2010.

In support of the TrAIL project, Trans-Allegheny Interstate Line Company, an Allegheny Energy subsidiary, filed an application with the Commission on April 13, 2007, proposing the construction of one 500 kV and three 138 kV transmission



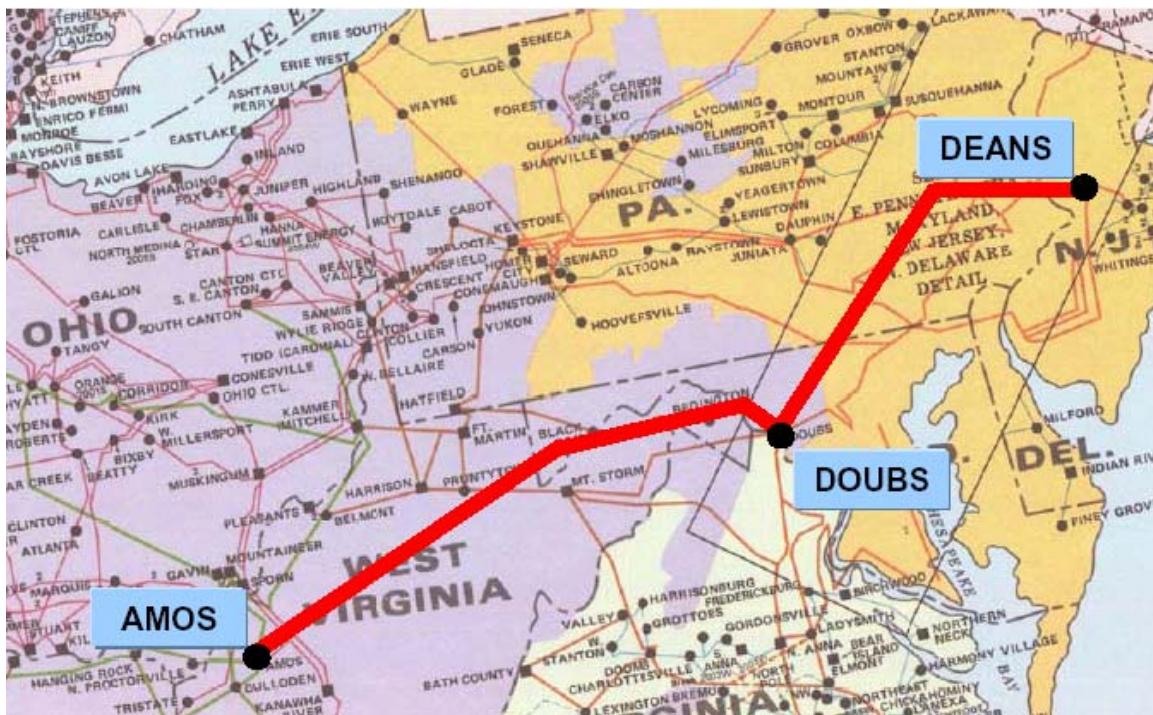
lines in Washington and Greene counties. The project includes a substation in Washington County (Prexy Substation), a substation in Greene County (502 Junction Substation), three 138 kV transmission lines and a 36-mile 500 kV transmission line. (See map below.)



Construction of the line is subject to approval of state regulatory commissions in Pennsylvania, West Virginia and Virginia. Evidentiary hearings in all three states were concluded by April 2008. On August 1, 2008, the Public Service Commission of West Virginia issued an Order approving construction of the Trans-Allegheny Interstate Line in West Virginia subject to certain conditions. Allegheny's portion of the transmission line expansion is estimated to cost \$820 million.

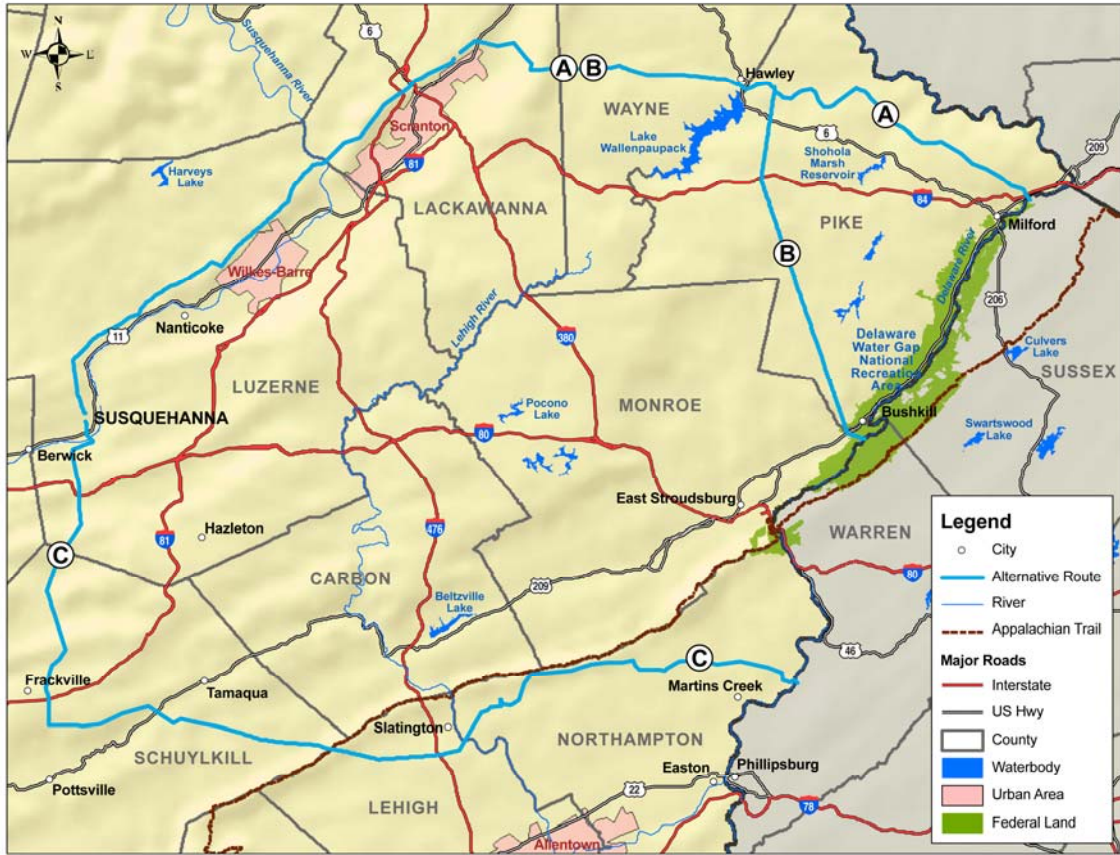
The second major transmission project identified is American Electric Power's (AEP) proposed 765 kV interstate transmission line from West Virginia to New Jersey. AEP has finalized a transmission joint venture with Allegheny Energy to build and own a portion of these new transmission assets. The Potomac-Appalachian Transmission Highline (PATH) project includes 244 miles of 765 kV transmission line from AEP's Amos substation near St. Albans, West Virginia, to Allegheny's Bedington substation, northeast of Martinsburg, West Virginia. Another 46 miles of twin-circuit 500 kV transmission will be constructed from

Bedington to a new substation to be built near Kemptown, Southeast of Frederick, Maryland. A PJM study indicates that this line is the preferred solution for ensuring the long-term reliability of the region's transmission system. The entire proposed transmission superhighway will span approximately 550 miles. It is designed to reduce congestion costs in the PJM regional transmission area by substantially improving the ability to transfer electricity from west to east. The transfer capability will improve by approximately 5,000 megawatts (MW) and reduce transmission line losses by approximately 280 MW. A portion of the second phase of the line, which is still under evaluation by PJM, is expected to traverse through Southeastern Pennsylvania. The project cost of the first phase is estimated to cost \$1.8 billion. The expected in-service date is 2012.



The third major transmission project identified by the RTEP describes a new 500 kV circuit which is proposed to run approximately 120 miles from the Susquehanna 500 kV station near Berwick, Luzerne County to Lackawanna County and then eastward to Roseland, New Jersey in the Public Service Electric & Gas Co. system. The circuit is expected to create a strong link from generation sources in North-central Pennsylvania into Eastern PJM. The line is estimated to cost between \$300 million to \$500 million, if built as a single-circuit 500 kV line.





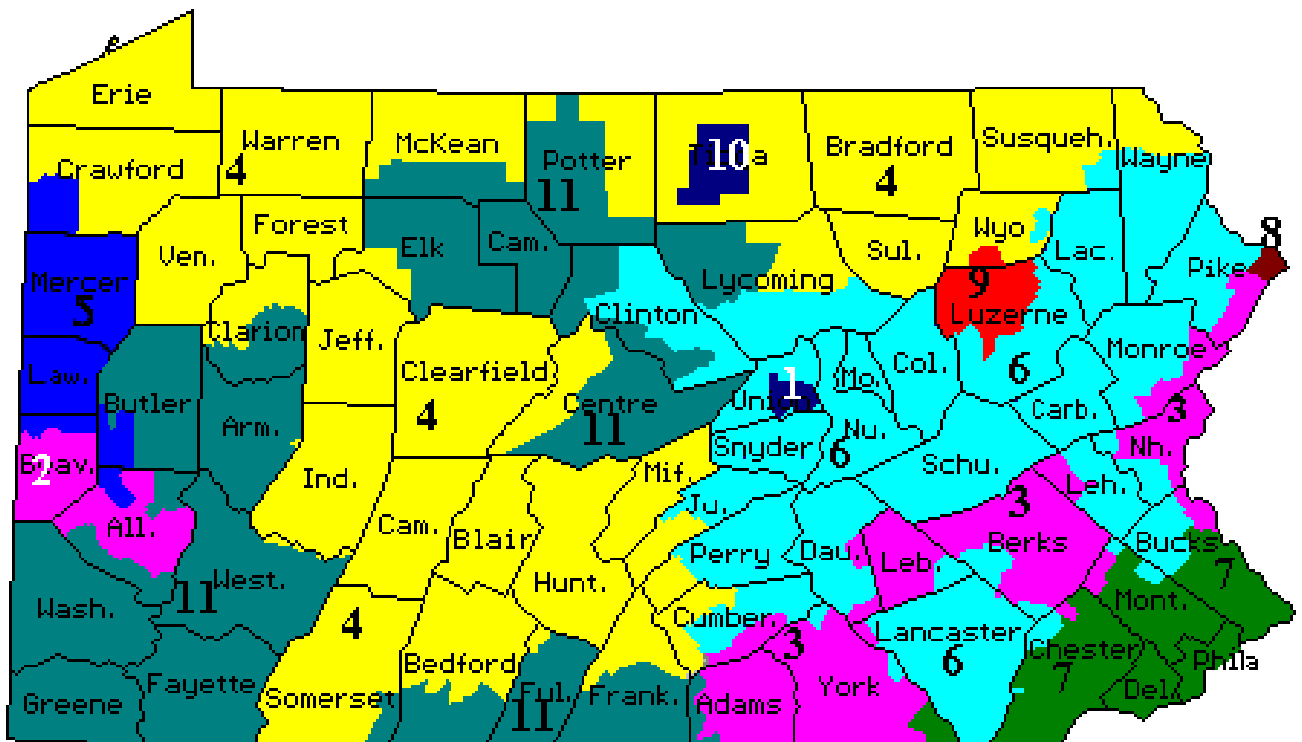
Source: <http://www.pplreliablepower.com>

For further information on these and other proposed projects, visit the PJM website at <http://www.pjm.com/planning/reg-trans-exp-plan.html>.

## Electric Distribution Companies

Eleven electric distribution companies (EDCs) currently serve the electrical energy needs of the majority of Pennsylvania's homes, businesses and industries. Cooperatives and municipal systems provide service to several rural and urban areas. The 11 jurisdictional EDCs (nine systems) are:

1. Citizens' Electric Company
2. Duquesne Light Company
3. Metropolitan Edison Company (FirstEnergy)
4. Pennsylvania Electric Company (FirstEnergy)
5. Pennsylvania Power Company (FirstEnergy)
6. PPL Electric Utilities Corporation
7. PECO Energy Company (Exelon)
8. Pike County Light & Power Company (Orange & Rockland Utilities Inc.)
9. UGI Utilities Inc.
10. Wellsboro Electric Company
11. West Penn Power Company (Allegheny Energy Inc.)



Due to the deregulation of electric generation, local generating resources are now available to the competitive wholesale market. During their rate-cap or transition periods, the EDCs either entered into long-term contracts for power from traditional resources with affiliates or other generation suppliers or purchased



power from the wholesale market to fulfill their provider of last resort (POLR) obligations.<sup>3</sup>

It is the responsibility of each load-serving entity to make provisions for adequate generating resources to serve its customers. Furthermore, section 2807(e)(3) of the Public Utility Code requires that, at the end of the transition period (the period in which the EDC recovers its stranded costs), the local EDC or Commission-approved alternate supplier must acquire electric energy at prevailing market prices for customers who contract for power which is not delivered, or for customers who do not choose an alternate supplier. EDCs must also assume the role of provider of last resort for customers choosing to return to the EDC.<sup>4</sup>

On Feb. 8, 2007, the Commission adopted proposed statewide default service regulations and a policy statement which provided guidelines to default service providers regarding the acquisition of electric generation supply, the recovery of associated costs and the integration of default service with competitive retail electric markets.

On May 10, 2007, the Commission finalized the statewide default service rulemaking and policy statement. The regulations establish the criteria on how electric generation service is provided to customers who choose to obtain generation service from an alternate supplier. In reviewing the comments and considering revisions to the proposed default service rules, the Commission recognized that some elements of the default service rules should be addressed in a policy statement that provides guidance to the industry rather than strict rules. The Independent Regulatory Review Commission (IRRC) approved the final regulations on July 19, 2007. The policy statement required no further action.

## **Alternative Energy Portfolio Standards**

Act 213<sup>5</sup> requires that an annually increasing percentage of electricity sold to retail customers be derived from alternative energy resources. This applies to both electric distribution companies and electric generation suppliers.

These alternative energy resources are categorized as Tier 1 and Tier 2 resources. Tier 1 resources include solar, wind, low-impact hydropower, geothermal, biologically derived methane gas, fuel cells, biomass and coal mine methane. Tier 2 resources include waste coal, demand side management, distributed generation, large-scale hydropower, by-products of wood-pulping and wood manufacturing, municipal solid waste and integrated combined coal gasification technology.

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<sup>3</sup> Also referred to as “obligation to serve” and “default service.”

<sup>4</sup> 66 Pa.C.S. § 2807(e)(3).

<sup>5</sup> 73 P.S. §§ 1648.1–1648.8.

Act 213, which took effect on Feb. 28, 2005, requires that, within two years of the effective date, at least 1.5 percent of the electric energy sold to retail customers must be generated from Tier 1 resources. The percentage of electric energy derived from Tier 1 resources is to increase by at least 0.5 percent each year so that, by the 15<sup>th</sup> year, at least 8 percent of the energy sold to retail customers in each service territory will come from these resources. Energy sold from Tier 2 resources is to increase to 10 percent and solar photovoltaic by 0.5 percent (a total of 18.5 percent from both Tier 1 and Tier 2). Act 213 sets forth a 15-year schedule for complying with its mandates:

		<u>Tier 1</u> <u>(incl. Solar)</u>	<u>Tier 2</u>	<u>Solar</u> <u>PV</u>
Year 1:	June 1, 2006 through May 31, 2007	1.5%	4.2%	.0013%
Year 2:	June 1, 2007 through May 31, 2008	1.5%	4.2%	.0030%
Year 3:	June 1, 2008 through May 31, 2009	2.0%	4.2%	.0063%
Year 4:	June 1, 2009 through May 31, 2010	2.5%	4.2%	.0120%
Year 5:	June 1, 2010 through May 31, 2011	3.0%	6.2%	.0203%
Year 6:	June 1, 2011 through May 31, 2012	3.5%	6.2%	.0325%
Year 7:	June 1, 2012 through May 31, 2013	4.0%	6.2%	.0510%
Year 8:	June 1, 2013 through May 31, 2014	4.5%	6.2%	.0840%
Year 9:	June 1, 2014 through May 31, 2015	5.0%	6.2%	.1440%
Year 10:	June 1, 2015 through May 31, 2016	5.5%	8.2%	.2500%
Year 11:	June 1, 2016 through May 31, 2017	6.0%	8.2%	.2933%
Year 12:	June 1, 2017 through May 31, 2018	6.5%	8.2%	.3400%
Year 13:	June 1, 2018 through May 31, 2019	7.0%	8.2%	.3900%
Year 14:	June 1, 2019 through May 31, 2020	7.5%	8.2%	.4433%
Year 15:	June 1, 2020 through May 31, 2021	8.0%	10.0%	.5000%

Companies are exempt from these requirements for the duration of their cost recovery periods. The current expiration dates for the cost recovery period in each EDC service territory and their compliance start dates for compliance are as follows:

	<u>Exemption expires</u>	<u>Compliance begins</u>
Pike County Power and Light	Dec. 31, 2007	Jan. 1, 2008
Citizens Electric of Lewisburg	Dec. 31, 2007	Jan. 1, 2008
Wellsboro Electric Company	Dec. 31, 2007	Jan. 1, 2008
UGI Utilities Inc. – Electric Division	Dec. 31, 2006	Feb. 28, 2007
Pennsylvania Power Company	Dec. 31, 2006	Feb. 28, 2007
Duquesne Light Company	Dec. 31, 2007	Jan. 1, 2008
West Penn Power Company	Dec. 31, 2010	Jan. 1, 2011
PPL Electric Utilities Inc.	Dec. 31, 2009	Jan. 1, 2010
Pennsylvania Electric Company	Dec. 31, 2010	Jan. 1, 2011
Metropolitan Edison Company	Dec. 31, 2010	Jan. 1, 2011
PECO Energy Company	Dec. 31, 2010	Jan. 1, 2011

The Commission is required to establish regulations governing the verification and tracking of energy efficiency and demand side management

measures, pursuant to Act 213, including benefits to all customer classes. On Oct. 3, 2005, the Commission issued a Final Order governing the participation of demand side management, energy efficiency and load management programs and technologies in the alternative energy market.<sup>6</sup> The Commission will use two means to establish qualifications for Alternative Energy Credits – a catalog approach for standard energy saving measures and general guidelines for metered and custom energy saving measures. In April 2007, the Commission entered into a contract with Clean Power Markets to be the Alternative Energy Credit Program Administrator. Clean Power Markets will verify that electric generation suppliers and EDCs are complying with the minimum requirements of Act 213. The Commission also has chosen PJM's Generation Attribute Tracking System (GATS) to assist EDCs in their compliance with the requirements of Act 213, including certification of projects.

On June 22, 2006, the Commission approved Final Regulations which promote onsite generation by customer-generators using renewable resources and eliminate barriers which may have previously existed regarding net metering. The regulations also provide for metering capabilities that will be required and a compensation mechanism which reimburses customer-generators for surplus energy supplied to the electric grid.<sup>7</sup>

The Commission also approved Final Regulations, on Aug. 17, 2006, which govern interconnection for customer-generators. The regulations promote onsite generation by customer-generators using renewable resources, consistent with the goal of Act 213. The regulations strive to eliminate barriers which may have previously existed with regard to interconnection, while ensuring that interconnection by customer-generators will not pose unnecessary risks to the electric distribution systems in the Commonwealth.<sup>8</sup>

Act 35 became effective on July 17, 2007, which amends provisions of Act 213, including definitions of customer-generators, the reconciliation mechanism for surplus energy supplied through net metering and the price to be paid for such surplus energy. On May 22, 2008, the Commission adopted the Final Omitted Rulemaking Order. This rulemaking Order is currently pending before IIRC. Pursuant to Act 35, on June 24, 2008, the Commission adopted, for comment, proposed standard Interconnection Application Forms and a Proposed Policy Statement addressing Interconnection Application Fees.<sup>6</sup>

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<sup>6</sup> Docket No. M-00051865.

<sup>7</sup> Docket No. L-00050174.

<sup>8</sup> Docket No. L-00050175.

## Section 2 – Historic and Forecast Data

### 2007: A Year in Review

The eight largest EDCs operating in Pennsylvania deliver approximately 99 percent of the jurisdictional companies' electrical energy needs. Aggregate sales in 2007 totaled approximately 149 billion kilowatthours (KWH), a 2.8 percent increase from that of 2006. This increase reflects an adjustment from a decrease in 2006 (0.7 percent). Thus, multiple years of data must be viewed when analyzing changes in sales. Residential sales led the Pennsylvania market capturing 34.7 percent of the total sales, followed by industrial (32 percent) and commercial (30.9 percent). Aggregate non-coincident peak load<sup>9</sup> decreased to 29,001 MW in 2007, down 4.2 percent from 2006. See Tables 2.1 and 2.2 below.

**Table 2.1 Major PA EDCs' Energy Demand, Peak Load and Customers Served (2007)**

EDC	Total Customers Served	Residential (MWH)	Commercial (MWH)	Industrial (MWH)	Other (MWH)	Sales For Resale (MWH)	Total Consumption (MWH)	System Losses (MWH)	Company Use* (MWH)	Net Energy For Load (MWH)	Peak Load (MW)
Duquesne	586,526	4,210,531	6,715,380	3,145,181	67,288	0	14,138,380	933,192	-	15,071,572	2,890
Met-Ed	546,158	5,595,280	4,714,979	3,992,283	34,646	0	14,337,188	1,093,899	-	15,431,087	2,825
Penelec	589,691	4,496,831	5,138,859	4,609,562	41,219	0	14,286,471	1,494,819	-	15,781,290	2,524
Penn Power	159,298	1,689,599	1,413,599	1,627,118	6,493	0	4,736,809	771,548	-	5,508,357	1,042
PECO	1,558,421	13,487,283	8,891,613	16,582,182	930,451	520,226	40,411,755	2,265,533	53,271	42,730,559	8,549
PPL	1,386,972	14,410,626	13,755,584	9,481,636	225,887	1,015,486	38,889,219	3,275,807	72,177	42,237,203	7,141
UGI	62,290	537,836	351,978	120,586	5,504	97	1,016,001	59,168	2,150	1,077,318	192
West Penn	711,049	7,265,513	4,997,928	8,159,596	51,986	750,568	21,225,591	1,331,945	-	22,557,536	3,838
Total	5,600,405	51,693,499	45,979,920	47,718,144	1,363,474	2,286,377	149,041,414	11,225,911	127,598	160,394,922	29,001
% of Total		34.68%	30.85%	32.02%	0.91%	1.53%	100.00%				
2007 v 2006	0.46%	4.56%	3.09%	0.74%	5.95%	1.29%	2.82%	16.77%	3.05%	3.69%	-4.17%

**Table 2.2 Major PA EDCs' Energy Demand, Peak Load and Customers Served (2006)**

EDC	Total Customers Served	Residential (MWH)	Commercial (MWH)	Industrial (MWH)	Other (MWH)	Sales For Resale (MWH)	Total Consumption (MWH)	System Losses (MWH)	Company Use* (MWH)	Net Energy For Load (MWH)	Peak Load (MW)
Duquesne	586,513	3,990,795	6,473,524	3,182,369	67,656	69,786	13,784,130	757,915	-	14,542,045	3,053
Met-Ed	541,680	5,287,177	4,508,851	4,008,119	35,140	0	13,839,287	886,545	-	14,725,832	2,884
Penelec	589,159	4,381,042	4,960,886	4,677,714	40,808	0	14,060,450	1,462,331	-	15,522,781	2,696
Penn Power	158,864	1,611,213	1,358,814	1,707,565	6,552	0	4,684,144	292,551	-	4,976,695	984
PECO	1,551,812	12,796,906	8,857,138	15,820,846	891,310	480,086	38,846,286	2,158,644	49,720	41,054,650	8,932
PPL	1,377,374	13,714,245	13,140,071	9,703,906	190,771	985,705	37,734,698	2,641,665	71,937	40,448,300	7,577
UGI	62,075	523,728	343,632	122,985	5,662	85	996,092	54,754	2,160	1,053,005	212
West Penn	707,263	7,132,630	4,958,589	8,143,698	48,982	721,587	21,005,488	1,359,005	-	22,364,491	3,926
Total	5,574,740	49,437,736	44,601,505	47,367,202	1,286,881	2,257,249	144,950,575	9,613,410	123,817	154,687,799	30,264
% of Total		34.11%	30.77%	32.68%	0.89%	1.56%	100.00%				

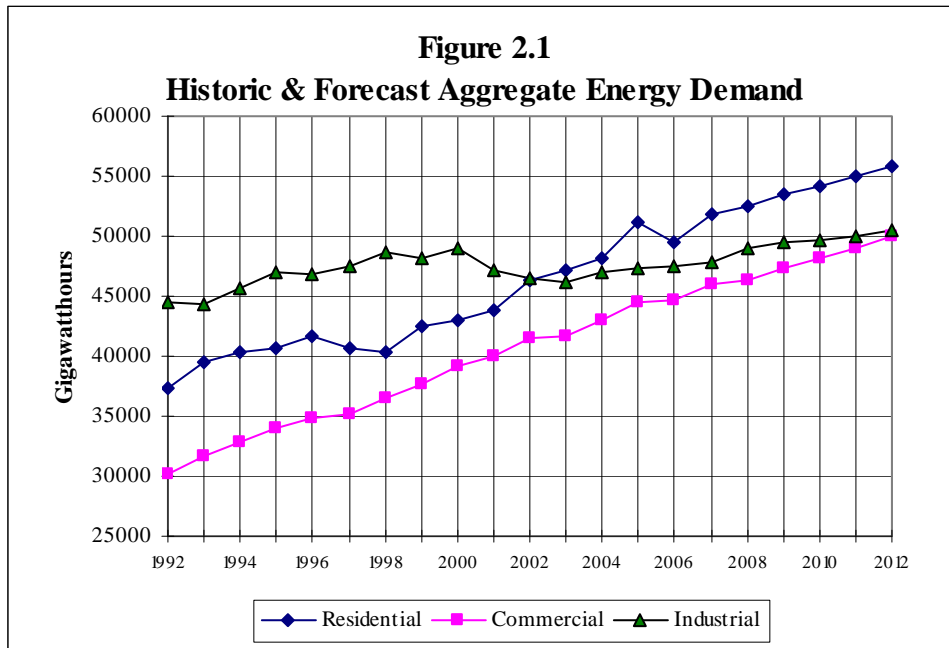
\* For some EDCs, "company use" is included in "system losses."

Between 1992 and 2007, the state's energy demand grew at an average rate of 1.8 percent annually. Residential sales grew at an annual rate of 2.2 percent, commercial at 2.8 percent and industrial at 0.5 percent. Over the past five years, residential demand increased an average of 2.2 percent per year,

<sup>9</sup> The sum of EDCs' annual peak loads regardless of their date or time of occurrence.

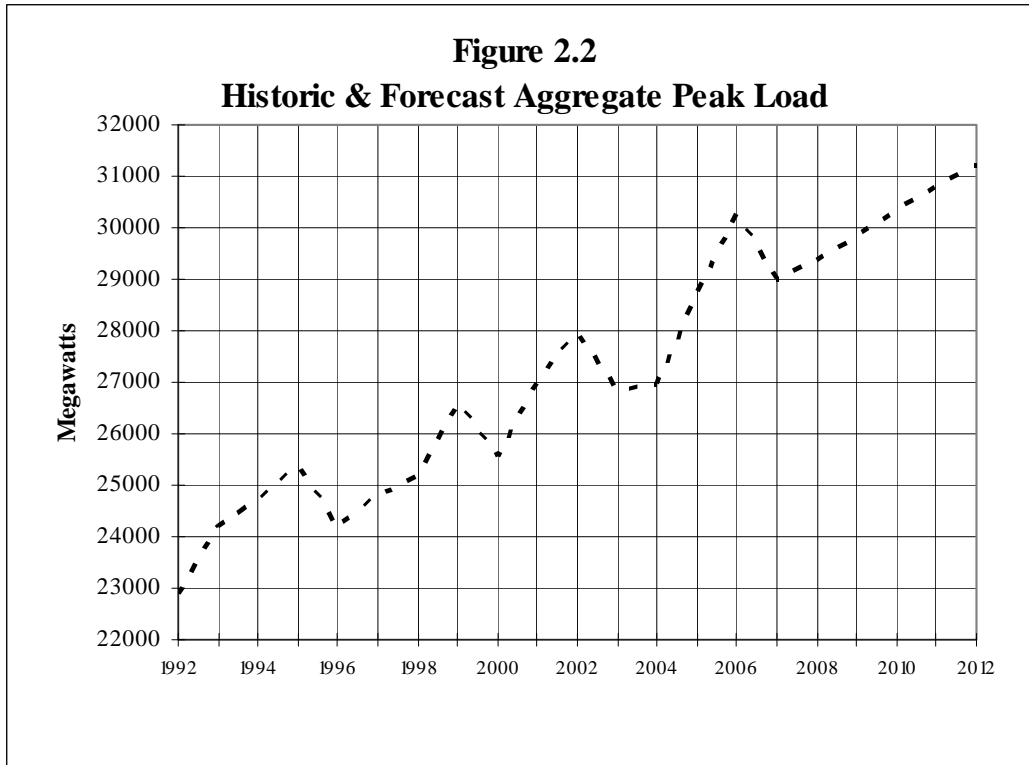
commercial at 2.1 percent and industrial at 0.5 percent. Average total sales growth from 2002 to 2007 was 1.8 percent.

The current aggregate five-year projection of growth in energy demand is 1.4 percent. This includes a residential growth rate of 1.5 percent, a commercial rate of 1.6 percent and an industrial rate of 1.1 percent. See Figure 2.1 below. Gigawatthours are a measure of energy sales over time, and megawatts are a measure of the instantaneous peak usage of electricity.



Over the past 15 years, the average aggregate non-coincident peak load for the major EDCs increased 1.6 percent per year. From 2002-07, the peak load increased by an average of 1.5 percent per year. From 2006-07, the aggregate peak load decreased from 30,264 MW to 29,001 MW, or 4.4 percent. See Figure 2.2.

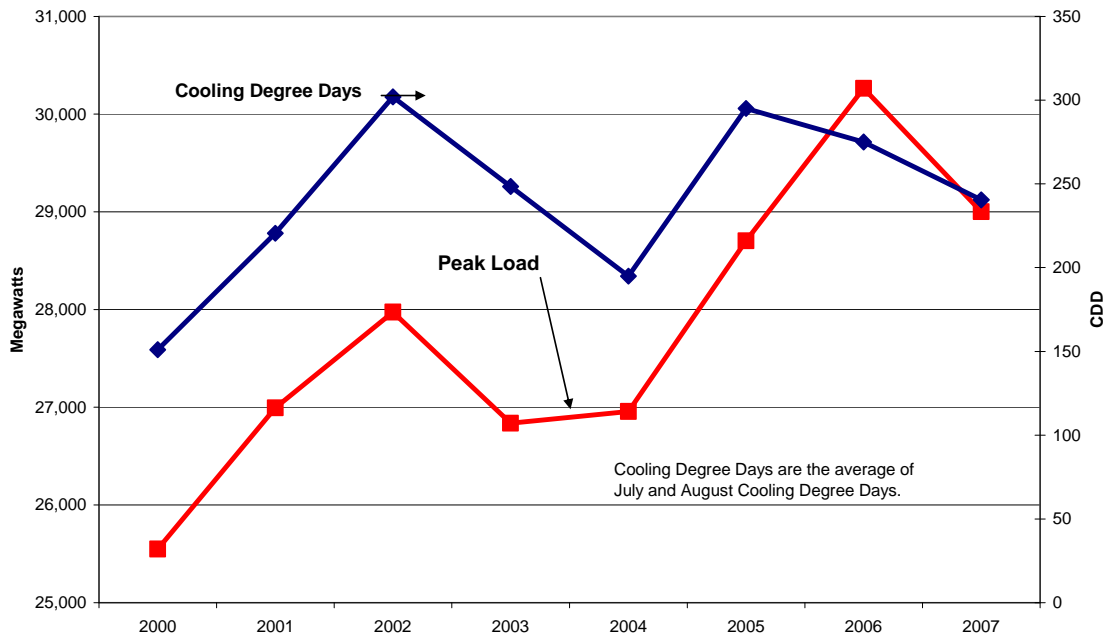
The combined forecast of the EDCs' peak load shows the load increasing from 29,001 MW in 2007 to 31,228 MW in 2012 at an average annual growth rate of 1.5 percent. Actual peak loads are weather-adjusted to reflect normal weather conditions prior to using forecasting methodologies. Thus, the projected growth rates reflect the year-to-year fluctuations in energy sales and peak load.



Most EDCs are summer peaking<sup>10</sup>, and there is usually a correlation between cooling degree days and peak load. Figure 2.3 provides a comparison between cooling degree days and peak load for the past eight years. The 2007 peak load relationship appears to have a strong correlation with cooling degree days. The decrease in peak load corresponds with a decrease in cooling requirements. See Fig. 2.3.

<sup>10</sup> An EDC with its highest annual load occurring June through September.

**Figure 2.3 Cooling Degree Days vs Peak Load for Major Pennsylvania EDCs**



Source: Cooling Degree Data obtained from National Oceanic and Atmospheric Administration, National Weather Service Climate Prediction Center.

Table 2.3 shows 2007 purchases of energy from independent power producers and qualifying facilities.

**Table 2.3. 2007 Purchases from IPPs or QFs by Pennsylvania EDC:**

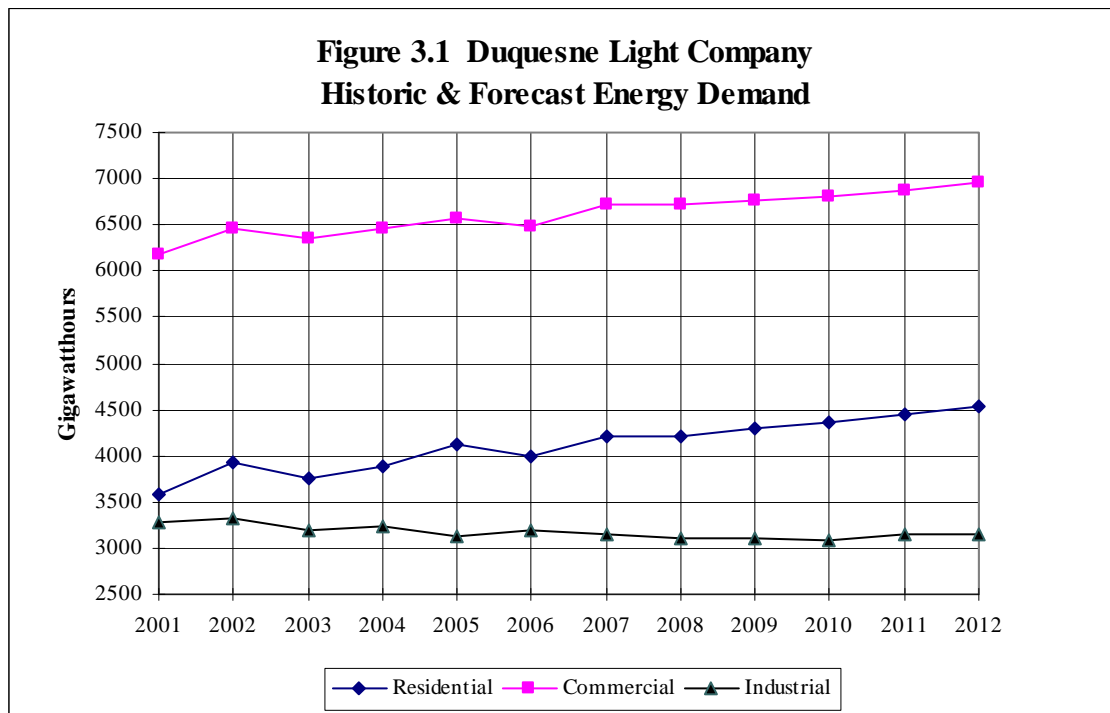
EDC	Purchased Energy (MWH)	Percent of Net Energy for Load	On-Line Contract Capacity (MW)	Future Contract Capacity (MW)
Citizens'	5,567	3.00%	0	0
Duquesne	0	0.00%	0	0
Met-Ed	2,201,504	14.27%	295	295
Penelec	3,133,366	19.85%	395	395
Penn Power	46	0.00%	0	0
PECO	741,916	1.74%	178	178
PPL	2,407,015	5.70%	0	0
UGI	0	0.00%	0	0
West Penn	1,032,251	4.58%	136	136
<b>Total</b>	<b>9,521,664</b>	<b>5.93%</b>	<b>1,004</b>	<b>1,004</b>

## Summary of EDC Data

### Duquesne Light Company

Duquesne Light Company (Duquesne) provides service to 586,526 electric utility customers in Southwestern Pennsylvania. In 2007, Duquesne had energy sales totaling 14.1 billion kilowatthours (KWH) -- up 2.6 percent from 2006. Commercial sales continued to dominate Duquesne's market with 47.5 percent of the total sales, followed by residential (29.8 percent) and industrial (22.2 percent).

Between 1992 and 2007, Duquesne's total energy demand increased about 1.4 percent per year: residential demand grew at an annual rate of 2.1 percent; commercial demand grew at 1.5 percent; and industrial demand increased at an average annual rate of 0.05 percent.

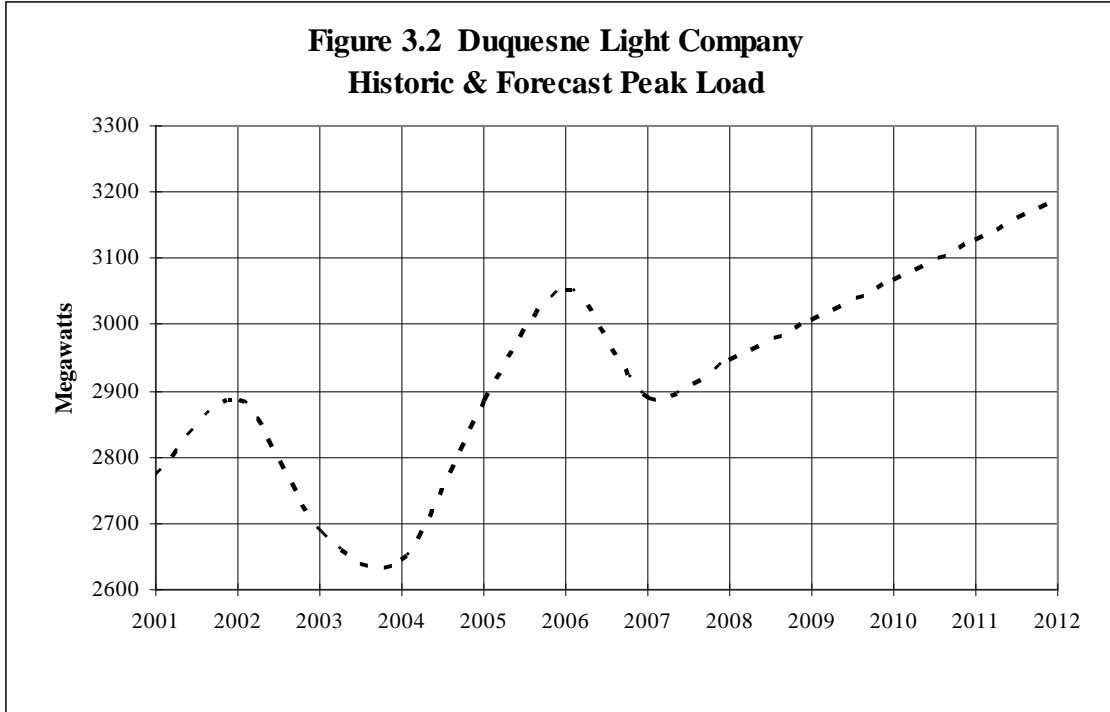


The current five-year projection of average growth in total energy consumption is about 0.8 percent per year. This includes a residential growth rate of 1.5 percent, a commercial growth rate of 0.7 percent and a slight decline in industrial sales of 0.03 percent per year.

Duquesne's summer peak load, occurring on Aug. 24, 2007, was 2,890 megawatts (MW), representing a decrease of 5.3 percent from last year's peak of 3,053 MW. The 2007-08 winter peak load was 2,137 MW or 4.4 percent lower than that of the previous year.



The actual average annual peak load growth rate over the past 15 years was 1.5 percent. Duquesne's forecast shows the peak load increasing from 2,890 MW in the summer of 2007 to 3,191 MW in 2012, or an average annual growth rate of 2 percent.



Tables 3.1-3.4 provide Duquesne's forecasts of peak load and residential, commercial and industrial energy demand from 1998 through 2008.

Currently, PJM manages the flow of wholesale electricity for Duquesne. Duquesne's integration into PJM involved transferring control of 670 miles of high-voltage transmission lines; however, ownership has remained with Duquesne. PJM is the regional reliability coordinator for Duquesne. As stated earlier, however, Duquesne has received conditional approval from the FERC to transfer from PJM to the Midwest ISO.

For calendar year 2007, 14 electric generation suppliers (EGSs) sold a total of 7.9 billion KWH to retail customers in Duquesne's service territory, or about 56.1 percent of total consumption. There were no instances in 2007 where EGSs failed to supply scheduled load.

Over the next four years, Duquesne plans to add 57.3 miles of high-voltage transmission lines to its system at a total cost of \$218 million.

Duquesne's Direct Load Control Program continued in 2007 for residential and commercial customers in which air conditioning units will be shut off or cycled

during periods of high temperature. Customers receive a credit on the monthly bill, based on the program option selected. The amount of load curtailed as a result of this program is not significant. Duquesne also offers a real-time economic Load Response Program wherein, with advance notice, Duquesne may declare a voluntary load curtailment when the market price for generation is anticipated to reach a level that makes load reduction economically attractive for both the customer and the company.

Duquesne is a member of RFC and PJM.

**Table 3.1 Duquesne Light Company  
Actual and Projected Peak Load (Megawatts)**

Year	Actual Peak Demand	Projected Peak Load Requirements												
		1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008		
1998	2484	2614												
1999	2756	2632	2715											
2000	2673	2653	2736	2638										
2001	2771	2677	2757	2661	2661									
2002	2886	2702	2776	2682	2682	2850								
2003	2686	2727	2798	2702	2702	2884	2822							
2004	2646	2754		2723	2723	2912	2841	2719						
2005	2884	2782			2743	2934	2855	2740	2722					
2006	3053	2810				2953	2870	2771	2765	2765				
2007	2890	2839					2884	2801	2805	2805	3039			
2008								2831	2835	2835	3086	2948		
2009									2873	2873	3141	3007		
2010										2910	3194	3067		
2011												3242	3128	
2012														3191

**Table 3.2 Duquesne Light Company  
Actual and Projected Residential Energy Demand (Gigawatthours)**

Year	Actual Energy Demand	Projected Residential Energy Demand												
		1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008		
1998	3382	3234												
1999	3526	3240	3366											
2000	3509	3249	3383	3610										
2001	3584	3258	3400	3643	3643									
2002	3924	3267	3415	3681	3681	3671								
2003	3759	3276	3432	3716	3716	3726	3697							
2004	3886	3287		3759	3759	3772	3721	3811						
2005	4134	3297			3780	3810	3744	3832	3941					
2006	3991	3307				3846	3767	3879	4018	3984				
2007	4211	3318					3791	3925	4088	4054	4141			
2008								3978	4125	4118	4214	4216		
2009									4198	4181	4293	4293		
2010										4243	4372	4371		
2011												4453	4444	
2012														4527

**Table 3.3 Duquesne Light Company  
Actual and Projected Commercial Energy Demand (Gigawatthours)**

Year	Actual Energy Demand	Projected Commercial Energy Demand												
		1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008		
1998	5826	5945												
1999	5954	6039	5983											
2000	6092	6159	6073	6113										
2001	6170	6301	6157	6231	6231									
2002	6458	6450	6236	6336	6336	6324								
2003	6346	6606	6327	6438	6438	6467	6436							
2004	6454	6773		6540	6540	6570	6505	6428						
2005	6566	6944			6628	6653	6570	6479	6568					
2006	6474	7118				6729	6636	6597	6711	6693				
2007	6715	7296					6703	6713	6870	6847	6784			
2008								6841	6949	6991	6942	6731		
2009									7076	7129	7127	6768		
2010										7259	7302	6815		
2011											7457	6878		
2012												6952		

**Table 3.4 Duquesne Light Company  
Actual and Projected Industrial Energy Demand (Gigawatthours)**

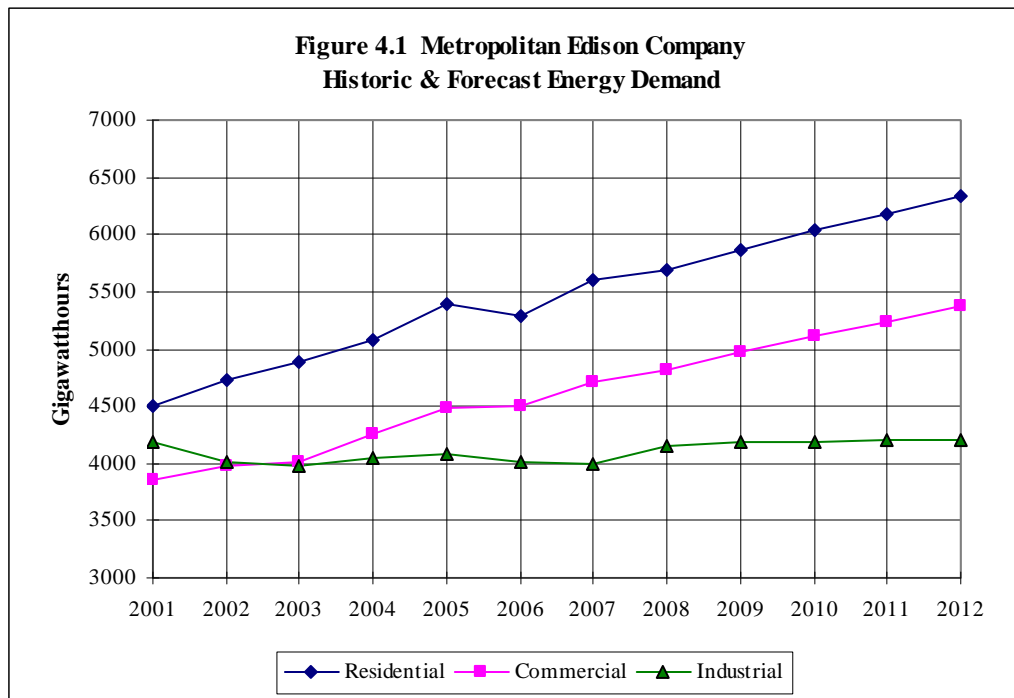
Year	Actual Energy Demand	Projected Industrial Energy Demand												
		1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008		
1998	3412	3690												
1999	3481	3828	3771											
2000	3581	3919	3836	3537										
2001	3283	3988	3901	3576	3576									
2002	3328	4059	3964	3615	3615	3315								
2003	3189	4130	4027	3651	3651	3382	3349							
2004	3229	4202		3695	3695	3445	3415	3031						
2005	3128	4276			3742	3491	3437	2990	3347					
2006	3182	4351				3530	3453	3033	3407	3229				
2007	3145	4427					3471	3075	3458	3299	3271			
2008								3123	3501	3359	3315	3098		
2009									3542	3411	3369	3102		
2010										3464	3420	3084		
2011											3467	3140		
2012												3141		

## Metropolitan Edison Company

Metropolitan Edison Company (Met-Ed) provides service to more than 546,000 electric utility customers in Eastern and Southcentral Pennsylvania. In 2007, Met-Ed had total energy sales of 14.3 billion kilowatthours (KWH) -- up 3.6 percent from 2006. Residential sales dominated Met-Ed's market with 39 percent of total sales, followed by commercial (32.9 percent) and industrial (27.8 percent).

Between 1992 and 2007, Met-Ed's energy demand grew at an average rate of 2.6 percent per year. Residential and commercial sales have maintained relatively steady growth over the period (3.0 percent for residential and 3.9 percent for commercial), while industrial sales have fluctuated considerably. Industrial sales grew at an average rate of about 0.7 percent.

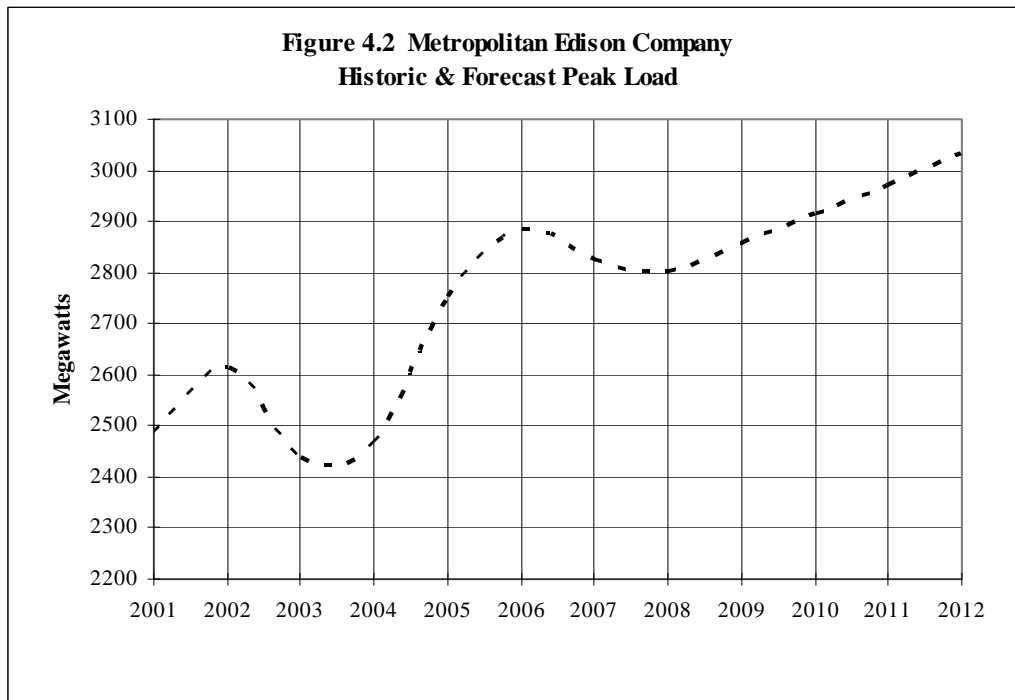
The current five-year projection of growth in total energy demand is 2.2 percent. This includes a residential growth rate of 2.5 percent, a commercial growth rate of 2.7 percent and an industrial rate of 1.1 percent.



Met-Ed's summer peak load, occurring on Aug. 8, 2007, was 2,825 megawatts (MW), representing a decrease of two percent from last year's system peak of 2,884 MW. The 2007-08 winter peak load was 2,498 MW or 0.3 percent lower than the previous year's winter peak of 2,506 MW.

The actual average annual peak load growth rate over the past 15 years was 2.5 percent. Met-Ed's forecast shows its peak load increasing from 2,825 MW

to 3,032 MW by 2012, or an average annual growth rate of 1.4 percent. Met-Ed's peak load represents about 24.9 percent of FirstEnergy's peak load.



Tables 4.1-4.4 provide Met-Ed's forecasts of peak load and residential, commercial and industrial energy demand from 1998 through 2008.

A restructuring settlement, approved by the Commission in 1998, provided for the transfer of 80 percent of Met-Ed's Provider of Last Resort (PLR) responsibility to other generation suppliers by June 2003. Since this did not occur, Met-Ed retains PLR responsibility for those customers who do not choose an alternate energy supplier.

Met-Ed divested most of its generation facilities in 1999. Met-Ed sold the York Haven generating station (19.4 MW) during 2007.

In 2007, Met-Ed purchased approximately 2.2 billion KWH from cogeneration and small power production projects. Contract capacity (defined as PJM installed capacity credits) is 295 MW. For calendar year 2007, one electric generation supplier sold a total of 887,000 KWH to retail customers in Met-Ed's service territory.

Met-Ed's plans for transmission line additions include 59.9 miles of 69 kV, 115 kV and 230 kV circuits through 2010 at a combined cost of \$13.6 million.

Met-Ed's only active conservation program identified is a low-income weatherization program (LIURP), which includes the installation of a variety of

weatherization measures in the homes of customers with electric heat and/or electric water heating and/or high base load use. In addition, 35 time-of-day conversions were made. Approximately \$1.9 million was spent in 2007 for a peak load reduction of 247 KW, a load shift of 26 KW and energy savings totaling 1,648,334 KWH.

Met-Ed is a wholly owned subsidiary of FirstEnergy Corporation and a member of the PJM Interconnection and Reliability *First*.

**Table 4.1 Metropolitan Edison Company  
Actual and Projected Peak Load (Megawatts)**

Year	Actual Peak Demand	Projected Peak Load Requirements												
		1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008		
1998	2176	2194												
1999	2439	2233	2263											
2000	2274	2268	2318	2404										
2001	2486	2305	2373	2456	2455									
2002	2616	2343	2429	2508	2504	2503								
2003	2438	2386	2486	2559	2553	2554	2527							
2004	2468	2429		2612	2602	2611	2584	2570						
2005	2752	2472			2652	2668	2639	2634	2625					
2006	2884	2515				2725	2691	2702	2689	2689				
2007	2825	2559					2747	2756	2740	2740	2740			
2008								2817	2801	2801	2801	2801		
2009									2857	2856	2857	2857		
2010										2915	2915	2915		
2011											2972	2972		
2012													3032	

**Table 4.2 Metropolitan Edison Company  
Actual and Projected Residential Energy Demand (Gigawatthours)**

Year	Actual Energy Demand	Projected Residential Energy Demand												
		1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008		
1998	4040	4122												
1999	4266	4204	4264											
2000	4377	4264	4352	4344										
2001	4496	4328	4442	4430	4430									
2002	4721	4391	4533	4516	4501	4607								
2003	4895	4451	4624	4602	4577	4708	4846							
2004	5071	4513		4687	4651	4804	4860	4885						
2005	5399	4575			4724	4892	4980	4977	5097					
2006	5287	4636				4988	5094	5083	5176	5325				
2007	5595	4697						5211	5190	5276	5390	5516		
2008									5300	5376	5515	5699	5699	
2009										5472	5640	5872	5872	
2010											5764	6037	6037	
2011												6187	6187	
2012														6341



**Table 4.3 Metropolitan Edison Company  
Actual and Projected Commercial Energy Demand (Gigawatthours)**

Year	Actual Energy Demand	Projected Commercial Energy Demand												
		1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008		
1998	3209	3224												
1999	3487	3306	3414											
2000	3699	3389	3518	3518										
2001	3855	3473	3622	3622	3751									
2002	3985	3567	3732	3732	3860	3976								
2003	4018	3663	3841	3837	3970	4096	4057							
2004	4251	3762		3947	4079	4216	4144	4170						
2005	4491	3864			4189	4336	4258	4281	4310					
2006	4509	3972				4456	4363	4388	4400	4462				
2007	4715	4083					4464	4498	4506	4547	4664			
2008								4601	4616	4668	4818	4818		
2009									4721	4788	4969	4969		
2010										4908	5108	5108		
2011											5244	5244		
2012													5375	

**Table 4.4 Metropolitan Edison Company  
Actual and Projected Industrial Energy Demand (Gigawatthours)**

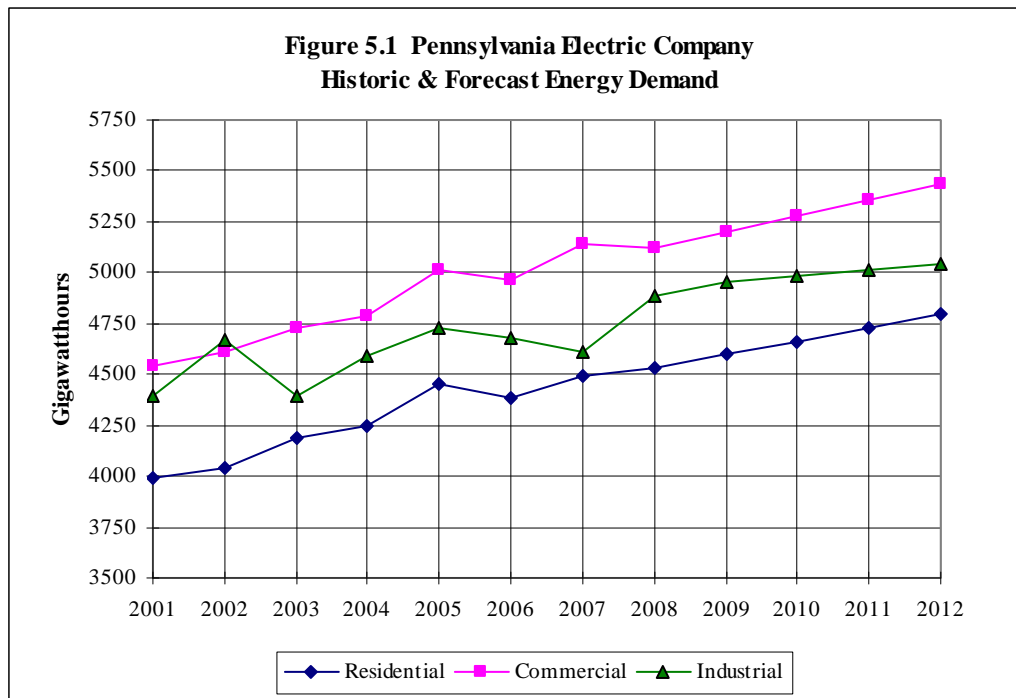
Year	Actual Energy Demand	Projected Industrial Energy Demand												
		1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008		
1998	4173	4136												
1999	4085	4229	4239											
2000	4412	4305	4307	4313										
2001	4186	4370	4365	4352	4312									
2002	4012	4448	4435	4410	4409	4263								
2003	3986	4560	4506	4459	4490	4341	3954							
2004	4042	4664		4508	4567	4419	3989	4080						
2005	4083	4776			4645	4498	4010	4136	4077					
2006	4008	4876				4577	4030	4162	4119	4176				
2007	3992	4964					4050	4206	4145	4155	4123			
2008								4237	4175	4177	4156	4156		
2009									4195	4200	4181	4181		
2010										4221	4193	4193		
2011											4201	4201		
2012													4209	

## Pennsylvania Electric Company

Pennsylvania Electric Company (Penelec) provides service to 589,691 electric utility customers in Western and Northern Pennsylvania. In 2007, Penelec had energy sales totaling 14.3 billion kilowatthours (KWH) -- up about 1.6 percent from 2006. Commercial sales dominated Penelec's market with 36 percent of the total sales, followed by industrial (32.3 percent) and residential (31.5 percent).

Between 1992 and 2007, Penelec's energy demand grew at an average rate of 1.3 percent per year. Residential and commercial sales have maintained relatively steady growth over the period (1.5 percent for residential and 2.6 percent for commercial), while industrial sales have fluctuated greatly. Industrial sales for 2007 were 0.5 percent higher than the 1992 level, or an average annual increase of only 0.03 percent.

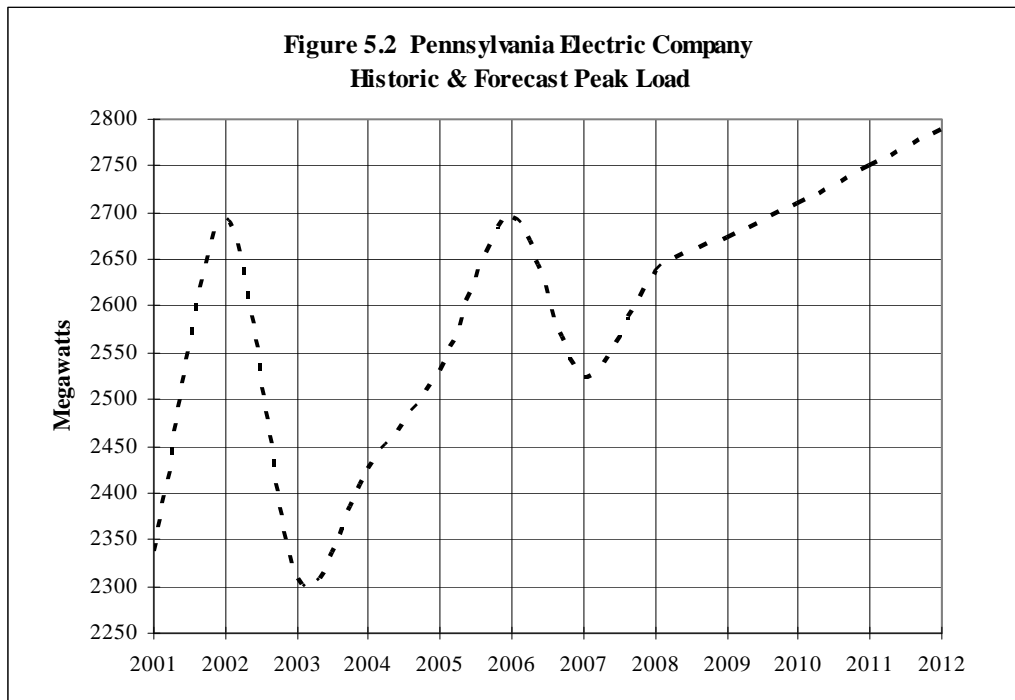
The current five-year projection of growth in total energy demand is 1.4 percent. This includes a residential growth rate of 1.3 percent, a commercial growth rate of 1.1 percent and an industrial growth rate of 1.8 percent.



Penelec's 2007 summer peak load, occurring on June 27, 2007, was 2,524 megawatts (MW), representing a decrease of 6.4 percent from last year's summer peak of 2,696 MW. The 2007-08 winter peak load was 2,429 MW or 1.4 percent lower than the previous year's winter peak of 2,463 MW.

The actual average annual peak load growth rate over the past 15 years was 1.3 percent. Penelec's forecast shows its summer peak load increasing from

2,524 MW in 2007 to 2,789 MW in 2012, or an average increase of 1.4 percent. Penelec's peak load represents about 22.3 percent of FirstEnergy's peak load.



Tables 5.1-5.4 provide Penelec's forecasts of peak load and residential, commercial and industrial energy demand from 1998 through 2008.

A restructuring settlement, approved by the Commission in 1998, provided for the transfer of 80 percent of Penelec's POLR responsibility to other generation suppliers by June 2003. Since this did not occur, Penelec retains POLR responsibility for those customers who do not choose an alternate energy supplier.

Penelec divested all of its generation facilities in 1999.

In 2007, Penelec purchased approximately 3.1 billion KWH from cogeneration and small power production projects. Contract capacity (defined as PJM installed capacity credits) is 395 MW.

For calendar year 2007, out of 23 licensed electric generation suppliers, two sold a total of 452 million KWH to retail customers in Penelec's service territory, or about 3.2 percent of total consumption, down from 3.5 percent in 2006.

Between 2009 and 2011, Penelec plans to add about 28 miles of 115-230 kV transmission lines to its system at an estimated cost of \$18.2 million.

Penelec's only active conservation program is a low-income weatherization program (LIURP), which includes the installation of a variety of weatherization

measures in the homes of customers with electric heat and/or electric water heating and/or high baseload use. In addition, 35 time-of-day conversions were made. Nearly \$2.1 million was spent in 2007 for a peak load reduction of 335 KW, a load shift of 27 KW and energy savings totaling 2.1 million KWH.

Penelec is a wholly owned subsidiary of FirstEnergy Corporation and a member of the PJM Interconnection and Reliability *First*.

**Table 5.1 Pennsylvania Electric Company  
Actual and Projected Peak Load (Megawatts)**

Year	Actual Peak Demand	Projected Peak Load Requirements											
		1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	
1992	2240												
1993	2514												
1994	2538												
1995	2589												
1996	2652												
1997	2481												
1998	2613	2688											
1999	2583	2730	2672										
2000	2569	2772	2704	2651									
2001	2337	2813	2737	2675	2321								
2002	2693	2853	2770	2700	2347	2337							
2003	2308	2472	2804	2737	2373	2375	2410						
2004	2425	2506		2760	2399	2405	2456	2438					
2005	2531	2540			2425	2437	2505	2481	2511				
2006	2696	2573				2465	2544	2525	2554	2554			
2007	2524	2606					2592	2565	2598	2598	2598		
2008								2604	2637	2637	2637	2637	2637
2009									2674	2674	2674	2674	2674
2010										2711	2711	2711	2711
2011											2750	2750	2750
2012												2789	2789

**Table 5.2 Pennsylvania Electric Company  
Actual and Projected Residential Energy Demand (Gigawatthours)**

Year	Actual Energy Demand	Projected Residential Energy Demand											
		1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	
1998	3756	3870											
1999	3864	3922	3894										
2000	3949	3950	3931	3881									
2001	3991	3979	3968	3915	3977								
2002	4167	4009	4007	3951	4021	4043							
2003	4187	4039	4045	3984	4065	4089	4194						
2004	4249	4069		4017	4109	4134	4162	4135					
2005	4457	4099			4154	4180	4203	4186	4295				
2006	4381	4129				4226	4245	4236	4333	4420			
2007	4497	4160					4287	4287	4385	4438	4469		
2008								4339	4438	4496	4533	4533	
2009									4524	4554	4598	4598	
2010										4614	4662	4662	
2011											4727	4727	
2012												4793	4793

**Table 5.3 Pennsylvania Electric Company  
Actual and Projected Commercial Energy Demand (Gigawatthours)**

Year	Actual Energy Demand	Projected Commercial Energy Demand										
		1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
1992	3488											
1993	3650											
1994	3794											
1995	3922											
1996	4044											
1997	4098											
1998	4198	4283										
1999	4319	4408	4347									
2000	4509	4531	4459	4387								
2001	4538	4658	4571	4473	4472							
2002	4697	4784	4684	4558	4549	4613						
2003	4727	4908	4797	4643	4626	4730	4782					
2004	4792	5031		4728	4704	4846	4874	4825				
2005	5010	5152			4781	4962	4976	4912	4928			
2006	4961	5270				5078	5076	4986	4990	5049		
2007	5139	5386					5178	5060	5064	5099	5045	
2008								5136	5140	5188	5122	5122
2009									5213	5277	5199	5199
2010										5367	5277	5277
2011											5356	5356
2012												5436

**Table 5.4 Pennsylvania Electric Company  
Actual and Projected Industrial Energy Demand (Gigawatthours)**

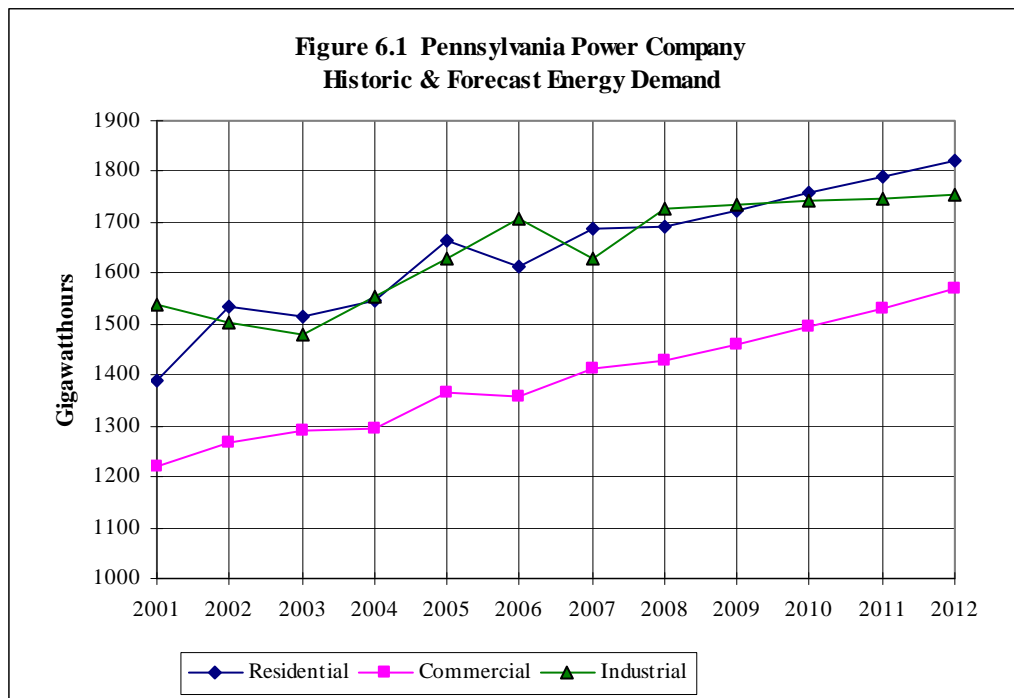
Year	Actual Energy Demand	Projected Industrial Energy Demand										
		1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
1998	4996	4836										
1999	4866	4894	5047									
2000	4698	4948	5114	5004								
2001	4392	5002	5205	5093	4857							
2002	4315	5057	5293	5177	5144	4670						
2003	4391	5113	5383	5239	5214	4783	4492					
2004	4589	5169		5306	5244	4846	4708	4561				
2005	4729	5226			5274	4887	4749	4666	4527			
2006	4678	5284				4928	4797	4737	4612	4807		
2007	4610	5342					4845	4791	4679	4828	4809	
2008								4815	4708	4881	4881	4881
2009									4725	4905	4954	4954
2010										4930	4983	4983
2011											5013	5013
2012												5043

## Pennsylvania Power Company

Pennsylvania Power Company (Penn Power) provides service to more than 159,000 electric utility customers in Western Pennsylvania. In 2007, Penn Power had energy sales totaling over 4.7 billion kilowatthours (KWH) -- an increase of 1.1 percent from the 2006 figure. Residential sales lead Penn Power's market with 35.7 percent of the total sales, followed by industrial (34.4 percent) and commercial (29.8 percent).

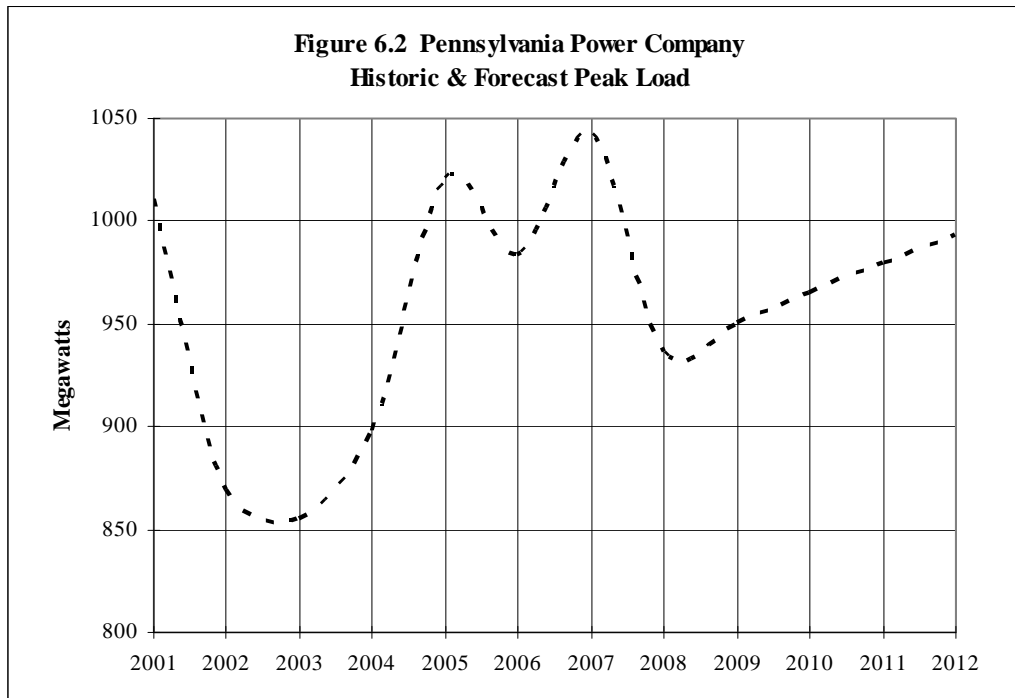
Between 1992 and 2007, Penn Power's energy demand grew at an average rate of two percent per year. Residential and commercial sales have maintained relatively steady growth over the period at rates of 3.2 percent and four percent, respectively. Industrial sales have fluctuated considerably and, in 2007, were only 97.1 percent of the 1992 level, or an average annual decline of 0.2 percent.

The current five-year projection of growth in total energy demand is 1.7 percent. This includes a residential growth rate of 1.5 percent, a commercial growth rate of 2.1 percent and an industrial growth rate of 1.5 percent.



Penn Power's 2007 summer peak load, occurring on Aug. 24, 2007, was 1,042 megawatts (MW), representing an increase of 5.9 percent from last year's peak of 984 MW. The 2007-08 winter peak load of 938 MW was 3.3 percent higher than the previous year's winter peak of 908 MW.

The actual average annual peak load growth rate over the past 15 years was 2.4 percent. Penn Power's forecast shows its peak load decreasing from 1,042 MW in the summer of 2007 to 936 MW in 2008, and then increasing to 994 MW by 2012, or an average annual growth rate of 1.5 percent. Penn Power's peak load represents about 8.4 percent of FirstEnergy's peak load.



Tables 6.1-6.4 provide Penn Power's forecasts of peak load and residential, commercial and industrial energy demand from 1998 through 2008.

The electrical systems of Penn Power and the other FirstEnergy operating companies are interconnected and fully integrated. All of Penn Power's generating facility ownership (1,237 MW) was transferred in 2005. Ownership of Beaver Valley 1 and 2, and Perry 1 was transferred to FirstEnergy Nuclear Generation Corp. and ownership of the fossil units was transferred to FirstEnergy Generation Corp.

Penn Power conducted a competitive bid process for its generation supply beginning in 2007, since the generation rate cap expired on Dec. 31, 2006. The solicitation is for a 17-month period to allow for synchronization with final form POLR regulations in June 2008.<sup>11</sup>

<sup>11</sup> Docket No. P-00052188.



For calendar year 2007, five electric generation suppliers sold about 2.5 billion KWH to retail customers in Penn Power's service territory or about 53.6 percent of total consumption. Penn Power purchased 45,526 KWH from an independent power producer in 2007.

Penn Power's only active conservation program is a low-income weatherization program (LIURP), which includes the installation of a variety of weatherization measures in the homes of customers with electric heat and/or electric water heating and/or high baseload use. Over \$721,000 was spent in 2007 for a peak load reduction of 82 KW and energy savings totaling 705,822 KWH.

Penn Power is a wholly owned subsidiary of Ohio Edison Company, which is a wholly owned subsidiary of FirstEnergy. FirstEnergy is a member of ReliabilityFirst and the Midwest ISO.

**Table 6.1 Pennsylvania Power Company  
Actual and Projected Peak Load (Megawatts)**

Year	Actual Peak Demand	Projected Peak Load Requirements												
		1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008		
1998	895	902												
1999	845	919	880											
2000	885	937	897	935										
2001	1011	958	919	957	883									
2002	869	980	941	980	904	918								
2003	855	1003	963	1003	930	947	891							
2004	898	1026	983	1025	956	983	923	865						
2005	1021	1050			982	1022	958	884	952					
2006	984	1012				1058	985	900	921	904				
2007	1042	1036					1020	916	930	930	921			
2008								929	938	938	936	936		
2009									951	951	951	951		
2010										965	965	965		
2011											980	980		
2012													994	

**Table 6.2 Pennsylvania Power Company  
Actual and Projected Residential Energy Demand (Gigawatthours)**

Year	Actual Energy Demand	Projected Residential Energy Demand												
		1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008		
1998	1278	1300												
1999	1351	1318	1300											
2000	1341	1336	1319	1390										
2001	1391	1355	1339	1412	1360									
2002	1533	1374	1360	1434	1395	1447								
2003	1513	1398	1381	1457	1430	1483	1512							
2004	1545	1423	1403	1479	1451	1520	1523	1542						
2005	1664	1445			1473	1558	1552	1571	1612					
2006	1611	1467				1597	1579	1599	1636	1659				
2007	1690	1494					1607	1629	1665	1699	1659			
2008								1657	1695	1744	1693	1693		
2009									1723	1789	1724	1724		
2010										1835	1758	1758		
2011											1789	1789		
2012													1821	

**Table 6.3 Pennsylvania Power Company  
Actual and Projected Commercial Energy Demand (Gigawatthours)**

Year	Actual Energy Demand	Projected Commercial Energy Demand												
		1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008		
1998	1090	1042												
1999	1143	1074	1110											
2000	1164	1108	1145	1204										
2001	1220	1143	1181	1242	1162									
2002	1268	1182	1221	1284	1206	1270								
2003	1291	1221	1262	1327	1251	1327	1279							
2004	1296	1262	1304	1372	1293	1387	1310	1309						
2005	1367	1304			1335	1449	1342	1339	1353					
2006	1359	1348				1514	1373	1370	1374	1384				
2007	1414	1392					1405	1402	1400	1422	1394			
2008								1429	1427	1460	1427	1427		1427
2009										1453	1498	1461	1461	
2010											1535	1496	1496	
2011												1532	1532	
2012														1569

**Table 6.4 Pennsylvania Power Company  
Actual and Projected Industrial Energy Demand (Gigawatthours)**

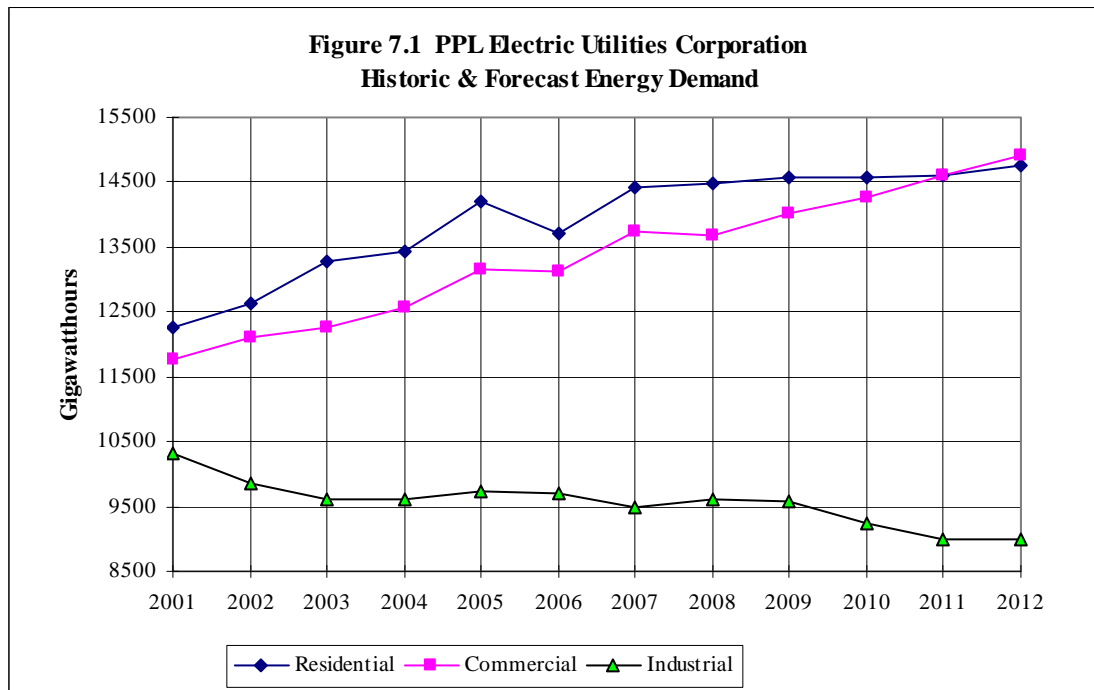
Year	Actual Energy Demand	Projected Industrial Energy Demand												
		1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008		
1998	1436	1677												
1999	1619	1716	1483											
2000	1643	1759	1520	1563										
2001	1539	1803	1558	1596	1618									
2002	1505	1847	1596	1635	1644	1514								
2003	1481	1890	1633	1673	1677	1516	1521							
2004	1554	1933	1670	1711	1716	1517	1507	1529						
2005	1629	1981			1758	1519	1500	1555	1582					
2006	1708	2029				1520	1493	1570	1558	1565				
2007	1627	2076					1489	1580	1563	1578	1720			
2008								1583	1568	1594	1727	1727		
2009									1569	1610	1734	1734		
2010										1626	1741	1741		
2011											1748	1748		
2012														1755

## PPL Electric Utilities Corporation

PPL Electric Utilities Corporation (PPL) provides service to about 1.39 million homes and businesses over a 10,000-square-mile area in 29 counties of Central Eastern Pennsylvania. In 2007, PPL had energy sales totaling 38.9 billion kilowatthours (KWH) -- up 3.2 percent from 2006. Residential sales continued to dominate PPL's market with 37.1 percent of the total sales, followed by commercial (35.4 percent) and industrial (24.4 percent).

Between 1992 and 2007, PPL's energy demand grew an average of 1.9 percent per year. Residential energy sales grew at an annual rate of 2.1 percent, commercial at a 2.8 percent rate and industrial at 0.5 percent.

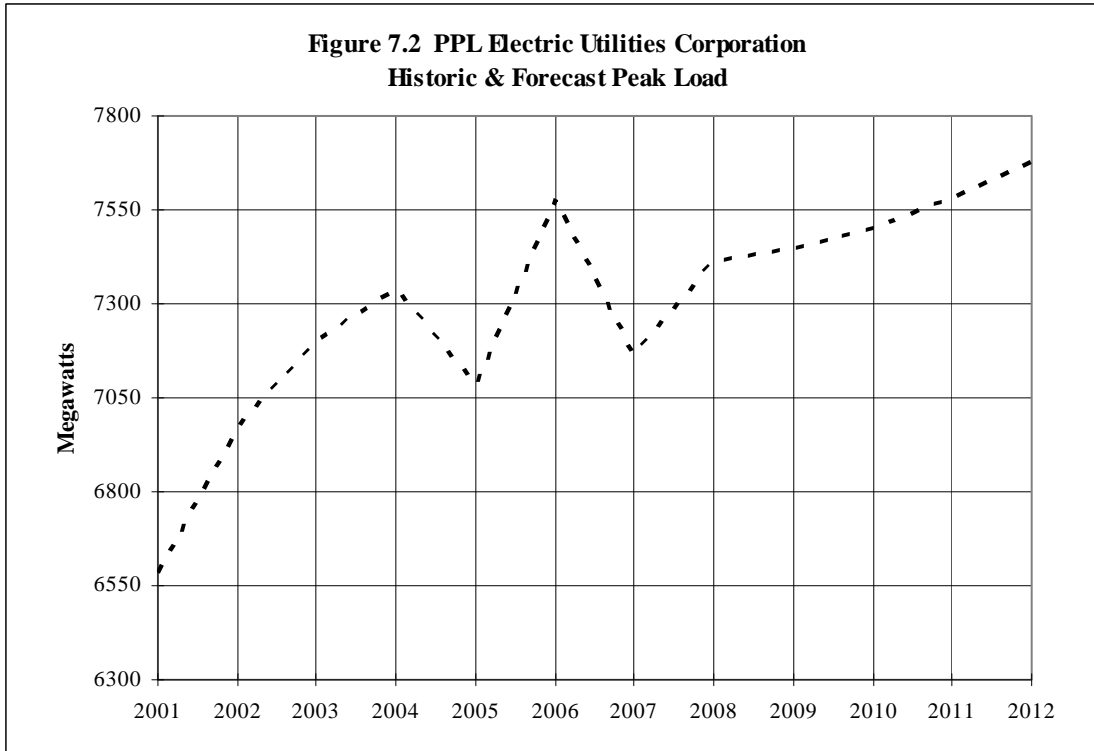
The current five-year projection of average growth in energy demand is 0.5 percent. This includes growth rates of 0.5 percent for residential, 1.6 percent for commercial and negative 1.0 percent for industrial.



PPL's 2007-08 winter peak load, occurring on Feb. 11, 2008, was 7,163 megawatts (MW), representing a decrease of 5.5 percent from last year's peak of 7,577 MW. The 2007 summer peak load was 7,141 MW compared to the previous summer's peak of 7,554 MW, or a 5.5 percent decrease.

The actual average annual peak load growth rate over the past 15 years was 1.0 percent. PPL's five-year winter peak load forecast scenario shows the peak load increasing to 7,410 MW in 2008 and then increasing to 7,590 MW in the winter of 2012-13 at an average annual rate of 0.6 percent. PPL expects to

become slightly summer-peaking by 2011, with a 2012 summer peak load of 7,680 MW. The forecast shown in Figure 7.2 depicts PPL's annual peak load.



Tables 7.1-7.4 provide PPL's forecasts of peak load and residential, commercial and industrial energy demand from 1998 through 2008.

Net operable generating capacity of 8,375 MW (summer rating) includes 41.3 percent coal-fired capacity and 24.5 percent nuclear capacity. Natural gas and dual fuel units account for 27.3 percent of the total. Independent power producers also provided 306 MW to the system. In 2007, PPL purchased over 2.4 billion KWH from cogeneration and independent power production facilities, or about 6.2 percent of total sales.

On June 13, 2007, PPL Corporation announced that it had taken preliminary steps that would preserve the option to build a third nuclear generating unit at the Susquehanna plant near Berwick, Pennsylvania. It is expected that such a project would be a joint venture, because of regulatory uncertainties and the large capital commitment. The existing two nuclear units have a total capacity of 2,360 MW.

For calendar year 2007, five electric generation suppliers sold a total of approximately 28.5 million KWH to retail customers in PPL's service territory, or about 0.07 percent of total consumption, down from 0.3 percent in 2006.

For 2007, PPL reported a peak load reduction of 246.5 MW and energy savings of 2.6 million KWH, resulting from its Interruptible Service – Economic Provisions tariff schedule. Customers reducing load for economic conditions receive significant rate discounts. The peak load reduction from this program represents approximately 3.5 percent of the 2007 summer peak load.

PPL's Price Response Service permits customers to respond to market price signals by reducing a portion of their load. In 2007, an estimated 1,100 KW peak load reduction was achieved, with energy savings totaling about 29,600 KWH.

PPL is a member of PJM and *ReliabilityFirst*.

**Table 7.1 PPL Electric Utilities Corporation  
Actual and Projected Peak Load (Megawatts)**

Year	Actual Peak Demand	Projected Peak Load Requirements												
		1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008		
1998	6688	6910												
1999	6746	6935	6815											
2000	6355	7030	6905	6580										
2001	6583	7120	7006	6680	6850									
2002	6970	7130	7040	6770	6960	7000								
2003	7197	7250	7140	6860	7060	7070	6790							
2004	7335	7350		6960	7170	7040	6860	7200						
2005	7083	7470			7270	7120	7000	7300	7200					
2006	7577	7580				7200	7140	7410	7290	7310				
2007	7163	7690					7320	7510	7390	7410	7200			
2008								7610	7490	7510	7270	7410		
2009									7580	7610	7340	7450		
2010										7710	7400	7500		
2011											7480	7580		
2012													7680	

**Table 7.2 PPL Electric Utilities Corporation  
Actual and Projected Residential Energy Demand (Gigawatthours)**

Year	Actual Energy Demand	Projected Residential Energy Demand												
		1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008		
1998	11156	11690												
1999	11704	11760	11740											
2000	11923	11830	11850	12031										
2001	12269	11910	11980	12150	12176									
2002	12640	12020	12120	12280	12324	12391								
2003	13266	12160	12260	12421	12478	12514	12868							
2004	13441	12290		12562	12634	12650	13062	13308						
2005	14218	12430			12799	12803	13259	13505	13950					
2006	13714	12570				12955	13462	13728	14311	14099				
2007	14411	12710					13671	13962	14675	14392	14180			
2008								14198	15019	14555	14422	14469		
2009									15349	14794	14565	14584		
2010										15036	14702	14562		
2011											14828	14608		
2012													14770	

**Table 7.3 PPL Electric Utilities Corporation  
Actual and Projected Commercial Energy Demand (Gigawatthours)**

Year	Actual Energy Demand	Projected Commercial Energy Demand												
		1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008		
1998	10597	10490												
1999	11002	10740	10740											
2000	11477	11000	10980	11090										
2001	11778	11280	11240	11275	11291									
2002	12117	11560	11500	11444	11431	11850								
2003	12273	11870	11760	11612	11561	12033	12212							
2004	12576	12140		11782	11699	12219	12507	13275						
2005	13157	12410			11848	12411	12757	13601	12967					
2006	13140	12680				12602	13101	13975	13436	13188				
2007	13756	12940					13418	14286	13946	13562	13184			
2008								14631	14517	13836	13476	13676		
2009									15068	14166	13777	14028		
2010										14492	14045	14253		
2011											14290	14596		
2012												14907		

**Table 7.4 PPL Electric Utilities Corporation  
Actual and Projected Industrial Energy Demand (Gigawatthours)**

Year	Actual Energy Demand	Projected Industrial Energy Demand												
		1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008		
1998	10220	10070												
1999	10179	10110	10190											
2000	10280	10270	10350	10543										
2001	10319	10440	10520	10836	10963									
2002	9853	10610	10690	11077	11255	10780								
2003	9599	10790	10860	11295	11521	11135	10355							
2004	9611	10960		11498	11777	11425	10503	9938						
2005	9720	11140			12010	11702	10641	10035	9750					
2006	9704	11320				11970	10795	10155	9926	9968				
2007	9482	11510					10924	10253	10136	10048	9965			
2008								10346	10349	10084	9999	9625		
2009									10577	10150	10032	9570		
2010										10214	10059	9228		
2011											10084	9005		
2012												9009		

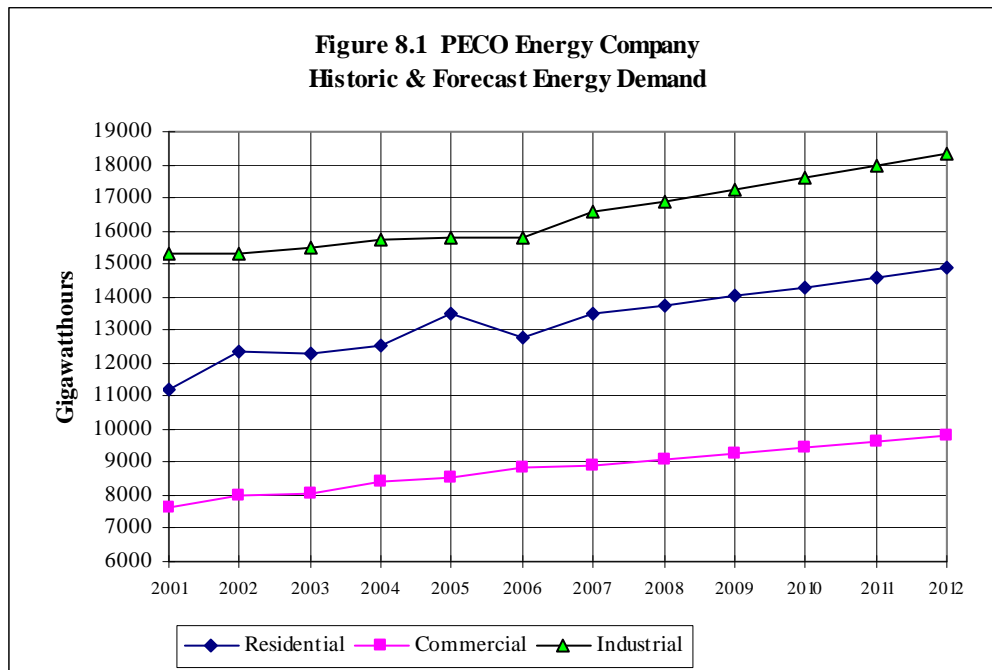


## PECO Energy Company

PECO Energy Company (PECO) provides service to nearly 1.6 million electric utility customers in Southeastern Pennsylvania. In 2007, PECO had total energy sales of 40.4 billion kilowatthours (KWH) -- up 4.1 percent from 2006. Industrial sales continued to dominate PECO's market with 41 percent of the total sales, followed by residential (33.4 percent) and commercial (22 percent).

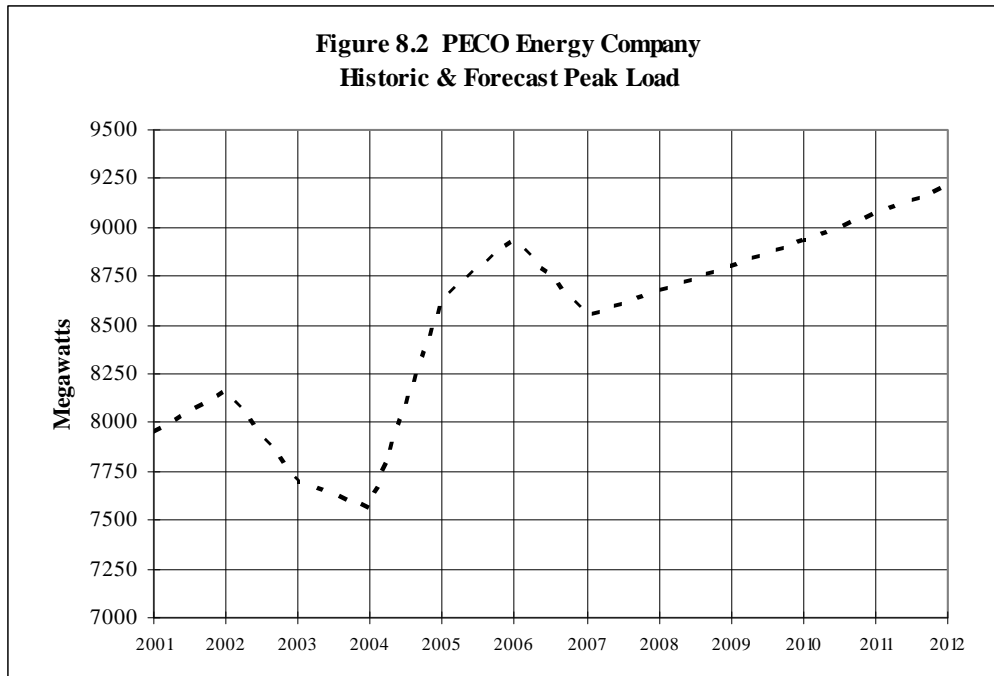
Between 1992 and 2007 PECO's energy demand grew an average of 1.7 percent per year. Residential energy sales grew at an annual rate of 2.3 percent, commercial at 3.6 percent and industrial at 0.4 percent.

The current five-year projection of growth in energy demand is 2.0 percent. This includes an annual growth rate of 2.0 percent for the residential, commercial and industrial sectors.



PECO's 2007 summer peak load, occurring on Aug. 8, 2007, was 8,549 megawatts (MW), representing a decrease of 4.3 percent from last year's peak of 8,932 MW. The 2007/08 winter peak demand was 6,519 MW or 4.6 percent below the previous winter's peak of 6,835 MW.

The actual average annual peak demand growth rate over the past fifteen years was 1.7 percent. PECO's current forecast shows the peak load increasing from the actual 2007 summer peak load of 8,549 MW to 9,210 MW in the summer of 2012, or an annual growth rate of 1.5 percent.



Tables 8.1-8.4 provide PECO's forecasts of peak load and residential, commercial and industrial energy demand from 1998 through 2008.

PECO has entered into a Purchased Power Agreement with Exelon Generation to provide energy and capacity for its POLR load through the forecast period. Other resources may be obtained through purchases from the wholesale markets.

In 2007, PECO purchased about 742 million KWH from cogeneration and independent power production facilities, or about 1.8 percent of total energy consumption. Contract capacity totaled 178 MW.

For calendar year 2007, electric generation suppliers sold a total of about 646 million KWH to retail customers in PECO's service territory or about 1.6 percent of total consumption, down from 2.2 percent in 2006. On the summer peak day, electric generation suppliers represented a load of 168 MW, or 2 percent.

PECO has developed commercial and industrial rate incentive programs to encourage customers to manage their energy demands and usage consistent with system capabilities. During 2007, the peak load reduction resulting from this rate option was 185 MW, with energy savings of 1.8 million KWH. PECO also has a low-income weatherization program (LIURP), which includes the installation of a variety of weatherization measures.

PECO is a member of ReliabilityFirst and PJM.

**Table 8.1 PECO Energy Company  
Actual and Projected Peak Load (Megawatts)**

Year	Actual Peak Demand	Projections of Peak Load Requirements												
		1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008		
1998	7108	6973												
1999	7850	7063	7063											
2000	7333	7135	7135	7339										
2001	7948	7233	7233	7398	7392									
2002	8164	7308	7308	7457	7451	8012								
2003	7696	7387	7387	7517	7510	8076	8229							
2004	7567	7466		7577	7570	8140	8295	8129						
2005	8626	7547			7631	8205	8362	8320	8320					
2006	8932	7629				8271	8428	8445	8445	8755				
2007	8549	7711					8496	8571	8571	8887	9066			
2008								8700	8700	9020	9202	8677		
2009									8831	9155	9340	8807		
2010										9293	9480	8940		
2011											9622	9074		
2012												9210		

**Table 8.2 PECO Energy Company  
Actual and Projected Residential Energy Demand (Gigawatthours)**

Year	Actual Energy Demand	Projected Residential Energy Demand												
		1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008		
1998	10376	10515												
1999	11132	10516	10516											
2000	11304	10600	10600	10600										
2001	11178	10685	10685	10685	11278									
2002	12335	10770	10770	10770	11385	11634								
2003	12259	10856	10856	10856	11488	11733	12020							
2004	12507	10943		10943	11592	11855	11905	12250						
2005	13469	11031			11697	11957	11981	12385	12385					
2006	12797	11119				12059	12054	12592	12592	13738				
2007	13487	11208					12128	12839	12839	14013	13053			
2008								13179	13179	14293	13314	13757		
2009									13443	14579	13580	14032		
2010										14870	13852	14313		
2011											14129	14599		
2012												14891		

**Table 8.3 PECO Energy Company  
Actual and Projected Commercial Energy Demand (Gigawatts)**

Year	Actual Energy Demand	Projected Commercial* Energy Demand												
		1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008		
1998	7012	6643												
1999	7154	6597	6597											
2000	7481	6649	6649	6649										
2001	7604	6703	6703	6702	7315									
2002	8019	6756	6756	6756	7446	7732								
2003	8077	6810	6810	6810	7578	7963	8135							
2004	8414	6865		6864	7711	8099	8233	8140						
2005	8520	6920			7844	8265	8434	8349	8349					
2006	8857	6975				8436	8637	8550	8550	8691				
2007	8892	7031					8839	8755	8755	8864	9034			
2008								8965	8965	9042	9215	9069		
2009									9144	9223	9399	9251		
2010										9407	9587	9436		
2011											9779	9625		
2012												9817		

\* Small Commercial & Industrial

**Table 8.4 PECO Energy Company  
Actual and Projected Industrial Energy Demand (Gigawatthours)**

Year	Actual Energy Demand	Projected Industrial* Energy Demand												
		1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008		
1998	15929	15456												
1999	15477	15919	15919											
2000	15828	16047	16047	16047										
2001	15312	16175	16175	16175	15405									
2002	15323	16304	16304	16305	15406	15324								
2003	15518	16435	16435	16435	15408	15417	15130							
2004	15741	16566		16567	15409	15429	14959	15477						
2005	15774	16699			15409	15442	14980	15448	15449					
2006	15821	16832				15458	15001	15448	15448	16089				
2007	16582	16967					15022	15448	15448	16411	16137			
2008								15448	15448	16739	16460	16914		
2009									15757	17074	16789	17252		
2010										17415	17125	17597		
2011											17467	17949		
2012												18308		

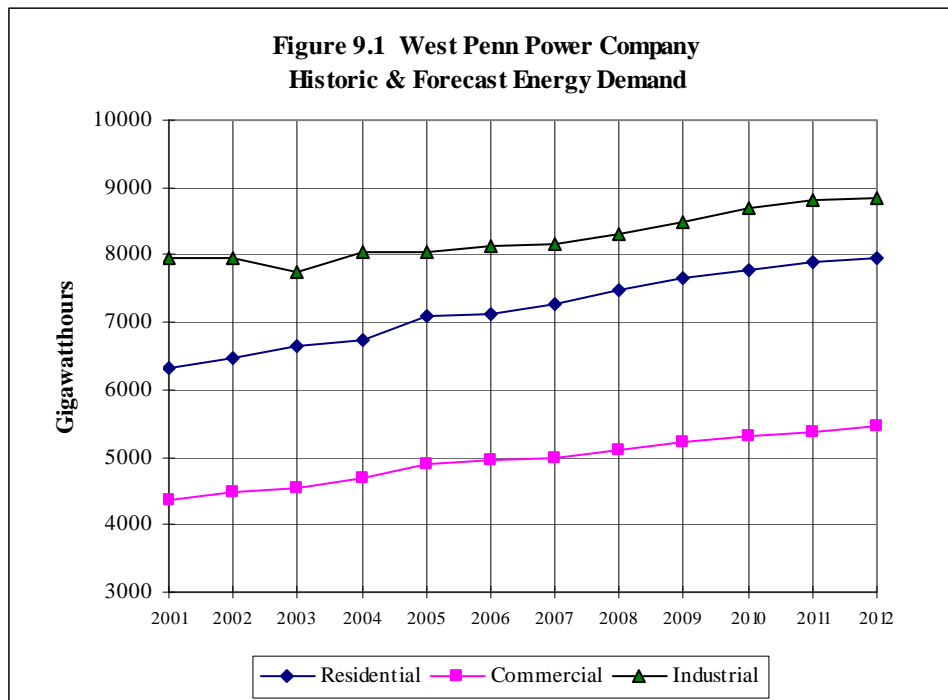
\* Large Commercial & Industrial

## West Penn Power Company

West Penn Power Company (dba Allegheny Power) provides service to more than 711,000 electric utility customers in Western, North and South Central Pennsylvania. In 2007, West Penn had total retail energy sales of about 21.2 billion kilowatthours (KWH) – up one percent from 2006. Industrial sales continued to dominate West Penn's market with 38.4 percent of the total sales, followed by residential (34.2 percent) and commercial (23.5 percent).

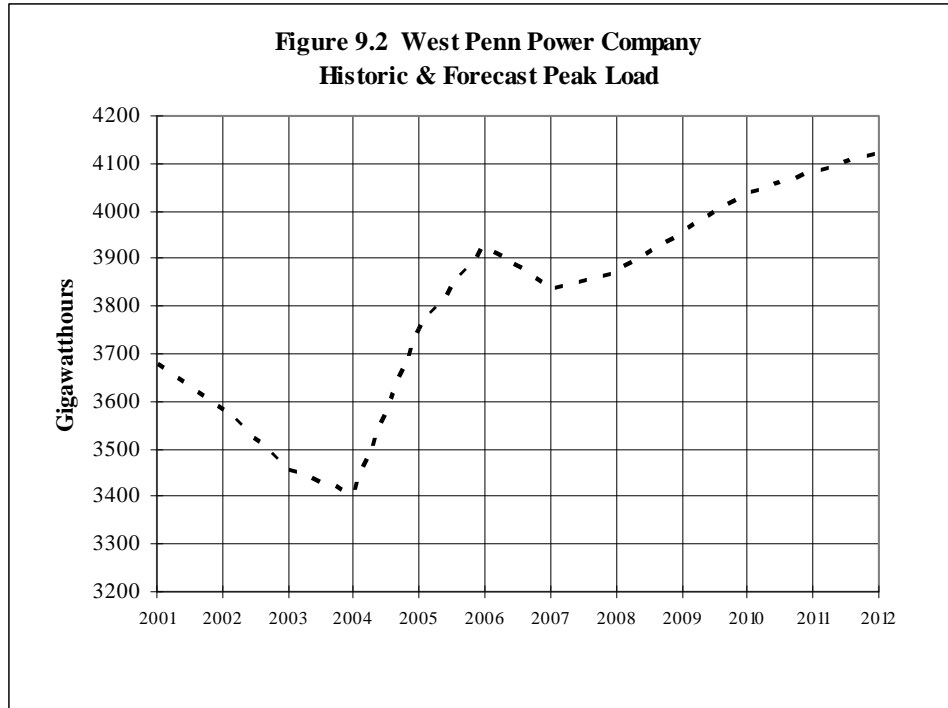
Between 1992 and 2007, West Penn's energy demand grew an average of 1.7 percent per year. Sales for all sectors have maintained relatively steady growth during the period. Residential sales grew at an annual rate of 2 percent, commercial sales at 2.7 percent and industrial sales at 1 percent.

The current five-year projection of growth in energy demand is 1.7 percent. This includes a residential growth rate of 1.9 percent, a commercial rate of 1.8 percent and an industrial rate of 1.6 percent.



West Penn's 2007 summer peak load, occurring on Aug. 8, 2007, was 3,838 megawatts (MW), representing a decrease of 2.2 percent from last year's summer peak of 3,926 MW. The 2007/08 winter peak load was 3,546 MW or 5.9 percent lower than the previous year's winter peak of 3,768 MW.

The actual average annual peak load growth rate over the past 15 years was 1.9 percent. West Penn's load forecast scenario shows the peak load increasing from 3,838 MW in the summer of 2007 to 4,123 MW in 2012, or an average annual growth rate of 1.4 percent.



Tables 9.1-9.4 provide West Penn's forecasts of peak load and residential, commercial and industrial energy demand from 1998 through 2008.

In April 2002, Allegheny Power joined PJM Interconnection. As a PJM member, Allegheny Power is responsible for following the reliability standards of the PJM markets. The company has access to an increased amount of energy resources within the expanded PJM market. West Penn remains an electric distribution company, providing transmission and distribution service to its customers and providing default service, or POLR, for those customers who do not choose an alternate supplier.

West Penn has identified several transmission line projects in construction or planned from 2007 through 2017 totaling 88.9 miles of 138 kV and 500 kV at an estimated cost of \$181.4 million. This cost figure includes \$152 million for the Trans-Allegheny Interstate Line (TrAIL) project, discussed in Section 1.

In 2007, West Penn purchased over 1 billion KWH from cogeneration and independent power production facilities. Contract capacity for these facilities was 136 MW.

West Penn implemented a Generation Buy-Back program in 2001, intended as a way for West Penn to buy back or displace firm load from large commercial and industrial customers that have on-site generation or operational flexibility. At the program's peak, 39 West Penn customers signed up with a potential load reduction of 231.5 MW. Due to mild weather and the lack of sustained price volatility, no events have been initiated since 2001. As of March 31, 2008, offers have been made for the PJM Economic Load Response Program and the Interruptible Load Resource Program to non-residential customers with at least 100 KW load reduction. West Penn also has a low-income weatherization program (LIURP), which includes the installation of a variety of weatherization measures.

West Penn is a subsidiary of Allegheny Energy Inc. and a member of *ReliabilityFirst*.

**Table 9.1 West Penn Power Company  
Actual and Projected Peak Load (Megawatts)**

Year	Actual Peak Demand	Projections of Peak Load Requirements												
		1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008		
1998	3192	3379												
1999	3328	3442	3279											
2000	3277	3496	3360	3284										
2001	3677	3545	3425	3304	3141									
2002	3582	3578	3484	3341	3445	3458								
2003	3455	3617	3519	3380	3465	3505	3535							
2004	3407	3668		3415	3501	3542	3572	3621						
2005	3752	3723			3536	3586	3610	3670	3702					
2006	3926	3769				3622	3639	3705	3763	3723				
2007	3838	3812					3674	3738	3782	3782	3813			
2008								3766	3845	3824	3882	3871		
2009									3866	3864	3965	3958		
2010										3895	4028	4036		
2011											4078	4083		
2012												4123		

**Table 9.2 West Penn Power Company  
Actual and Projected Residential Energy Demand (Gigawatthours)**

Year	Actual Energy Demand	Projected Residential Energy Demand												
		1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008		
1998	5823	6127												
1999	6020	6250	5873											
2000	6022	6381	6013	6061										
2001	6325	6446	6077	6172	6192									
2002	6459	6518	6165	6256	6260	6374								
2003	6641	6604	6165	6339	6329	6471	6486							
2004	6724	6699	6231	6445	6436	6596	6599	6818						
2005	7088	6763			6521	6680	6671	6890	6923					
2006	7133	6864				6775	6744	6965	7047	7164				
2007	7266	6976					6821	7041	7136	7289	7319			
2008								7132	7194	7387	7484	7481		
2009									7189	7417	7639	7654		
2010										7447	7761	7774		
2011											7869	7892		
2012												7965		



**Table 9.3 West Penn Power Company  
Actual and Projected Commercial Energy Demand (Gigawatthours)**

Year	Actual Energy Demand	Projected Commercial Energy Demand												
		1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008		
1998	3993	4080												
1999	4137	4163	4039											
2000	4265	4270	4215	4182										
2001	4360	4339	4313	4225	4326									
2002	4497	4393	4401	4275	4395	4458								
2003	4529	4457	4443	4329	4449	4543	4577							
2004	4691	4557		4397	4517	4624	4653	4701						
2005	4892	4630			4571	4684	4695	4780	4791					
2006	4959	4707				4749	4739	4832	4907	4996				
2007	4998	4779					4776	4878	5006	5092	5083			
2008								4936	5098	5179	5179	5115		
2009									5135	5249	5279	5235		
2010										5318	5365	5327		
2011											5452	5387		
2012													5462	

**Table 9.4 West Penn Power Company  
Actual and Projected Industrial Energy Demand (Gigawatthours)**

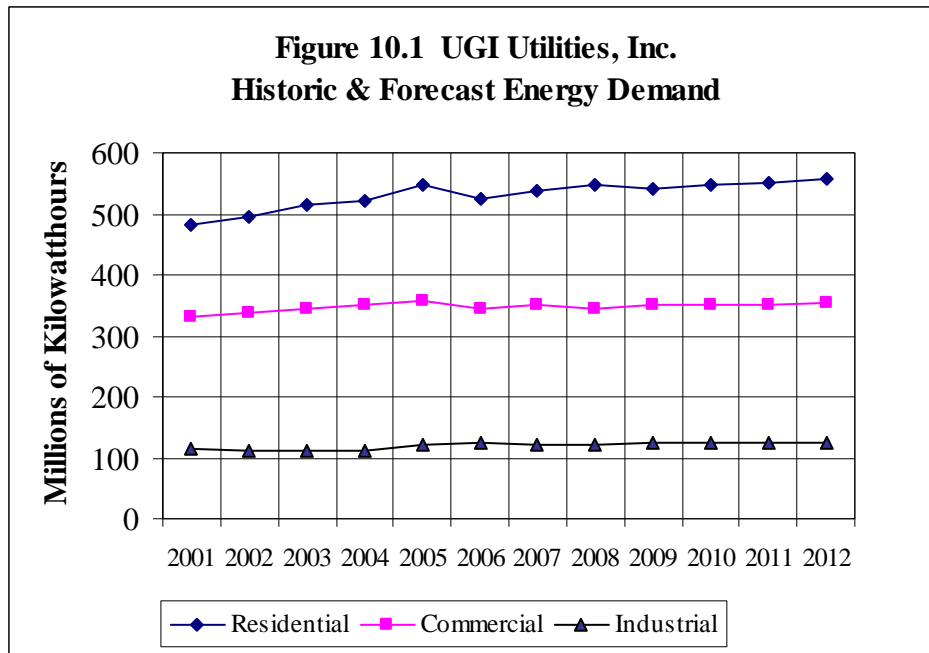
Year	Actual Energy Demand	Projected Industrial Energy Demand												
		1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008		
1998	8226	8608												
1999	8237	8808	8575											
2000	8383	8997	8830	7942										
2001	7955	9070	8975	8120	8481									
2002	7957	9136	9167	8230	8597	8006								
2003	7747	9264	9161	8353	8663	8116	7885							
2004	8039	9448		8477	8729	8188	7973	7814						
2005	8051	9561			8799	8230	8023	7913	8027					
2006	8144	9660				8290	8087	7998	8137	8283				
2007	8160	9768					8187	8069	8220	8429	8282			
2008								8140	8311	8543	8411	8311		
2009									8313	8615	8584	8476		
2010										8634	8728	8699		
2011											8766	8799		
2012													8844	

## UGI Utilities Inc.

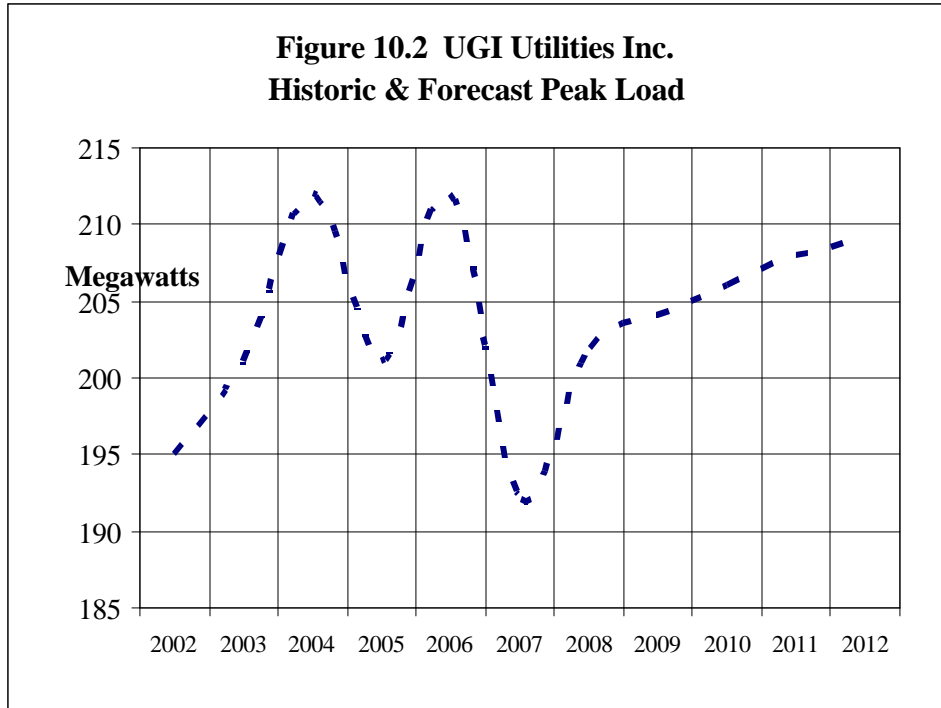
The Electric Division of UGI Utilities Inc. (UGI) provides electric service to more than 62,000 customers in Northwestern Luzerne and Southern Wyoming counties in Pennsylvania. In 2007, UGI had energy sales totaling over 1 billion kilowatthours (KWH) -- up 2 percent from 2006. Residential sales continued to dominate UGI's market with 52.9 percent of the total sales, followed by commercial (34.6 percent) and industrial (11.9 percent).

Between 1992 and 2007, UGI experienced an average growth in total sales of 1.5 percent, which includes a residential growth rate of 1.3 percent, a commercial rate of 1.6 percent and an industrial rate of 2 percent.

Over the five-year planning horizon, UGI expects energy demand to increase at an average rate of 0.5 percent. This includes an average annual increase in residential sales of 0.7 percent, a growth in commercial sales of 0.1 percent per year and an industrial growth rate of 0.9 percent. The five-year forecast indicates an average increase in peak load of 1.7 percent. Peak load is projected to increase from 192 MW in 2007 to 209 MW in 2012.



Peak demand on the UGI system occurred on Jan. 3, 2008, and totaled 192 megawatts (MW), or five percent below the 2006 winter peak load of 202 MW. This peak demand was 3.8 percent higher than the peak demand experienced during the summer of 2007.



The number of shopping customers in UGI’s service territory reached a peak of 2,604 in May 1999. All of those customers have returned to UGI retail service. UGI does not own electric generation supply and will meet its customers’ energy requirements by making wholesale purchases in various markets.

Under a Stipulation in Settlement, adopted in June 2006, UGI will provide POLR service to all customers during 2008 under generation rates that are limited to a system average of 9.65 cents per KWH for residential classes and 9.698 cents per KWH for all other rate schedules.

In 2006, UGI offered a Voluntary Load Reduction Program to commercial and industrial customers with the ability to reduce a measurable and verifiable portion of their load during peak periods, or supply some part of their load using self-generation facilities. Each of the program participants had a PJM Locational Marginal Price (LMP) threshold of \$200/MWH. No load reduction was called on the summer 2007 peak day, because LMPs exceeded the event threshold of \$200 for only one hour. UGI also has a low-income weatherization program (LIURP), which includes the installation of a variety of weatherization measures.

UGI is a member of PJM.

## Section 3 – Regional Reliability

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### Regional Reliability Assessments

The passage of the Pennsylvania Electricity Generation Customer Choice and Competition Act substantially changed the Commission's jurisdiction as well as the Commission's ability to compile data from the generation sector. At this time, all information on generation and transmission capacity is regional. Therefore, this section summarizes the regional reliability assessments of ReliabilityFirst and PJM for generation and transmission capability.

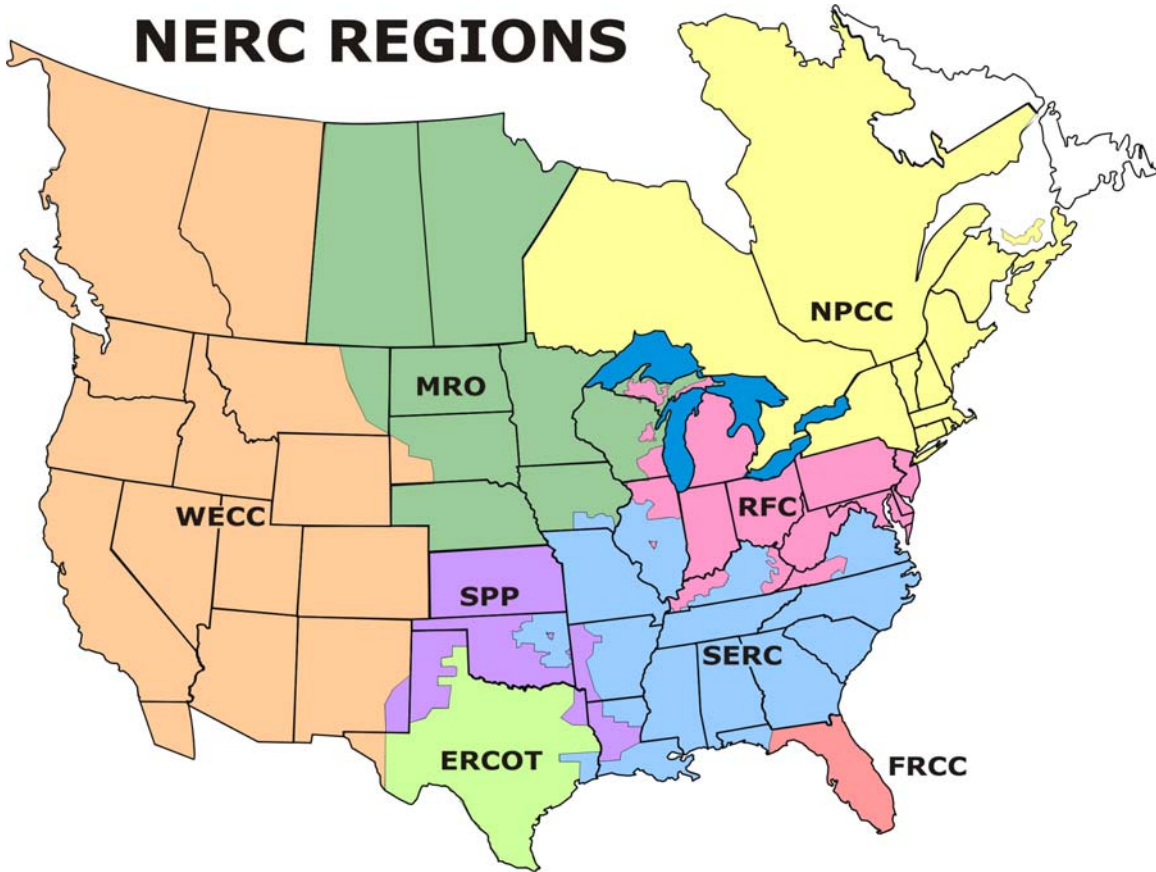
### North American Electric Reliability Corporation

In 1968, electric utilities formed the North American Electric Reliability Council (NERC) to promote the reliability of the electricity supply for North America. Since its formation, NERC has operated as a voluntary organization, dependent on reciprocity and mutual self-interest. Due to the restructuring of the electric utility industry, NERC has been transformed from a voluntary system of reliability management to one that is mandatory, with the backing of U.S. and Canadian governments. The mission of the new organization is to develop, promote and enforce reliability standards.

Effective Jan. 1, 2007, NERC and the North American Electric Reliability Corporation merged, with NERC Corporation being the surviving entity. As of June 18, 2007, FERC granted NERC the legal authority to enforce reliability standards, and made compliance with those standards mandatory.

NERC's members currently include eight regional reliability councils. Members of these regional councils include investor-owned utilities, federal, rural electric cooperatives, state/municipal and provincial utilities, independent power producers and power marketers. The regional council operating in Pennsylvania is RFC, which is the successor organization to three former NERC Regional Reliability Councils: MAAC, ECAR and MAIN.

# NERC REGIONS



Source: <http://www.nerc.com>

## ERCOT

Electric Reliability Council of Texas

## FRCC

Florida Reliability Coordinating Council

## MRO

Midwest Reliability Organization

## NPCC

Northeast Power Coordinating Council

## RFC

ReliabilityFirst Corporation

## SERC

Southeastern Electric Reliability Council

## SPP

Southwest Power Pool

## WECC

Western Electricity Coordinating Council

Electric system reliability is addressed by considering two basic and functional aspects of the electric system: adequacy and security. Adequacy is the ability of the electric system to supply the aggregate electrical demand and energy requirements of the customers at all times, taking into account scheduled and reasonably expected unscheduled outages of system elements.

Security is the ability of the electric system to withstand sudden disturbances such as electric short circuits or unanticipated loss of system elements.

Resource adequacy can be expressed in terms of either reserve margin or capacity margin. Reserve margin is the difference between available resources and net internal demand, expressed as a percentage of net internal demand. Capacity margin is the difference between available resources and net internal demand, expressed as a percentage of available resources.

## Reliability Assessment<sup>12</sup>

In its most recent reliability assessment, NERC states that “*Though the gap has narrowed in many areas due to commitments to new supply side and demand side resources, projected increases in peak demands continue to exceed projected committed resources beyond the first few years of the 10-year planning horizon. Newly created forward capacity markets are being relied upon to provide needed new resources in most areas with structured markets and show promise. Areas with traditional ‘obligation to serve’ arrangements are expected to develop sufficient resources to meet their regulatory commitments.*”

Peak demand in the U.S. is expected to increase by over 135,000 MW or 17.7 percent in the next 10 years, while committed resources are projected to increase by 77,000 MW or 8.4 percent. Uncertainty in adequate capacity margins are being driven by the industry’s shorter-term approach to resource planning and acquisition, relying on unspecified, undeveloped and/or uncommitted resources.

Other NERC findings address the future of reliability of electric service, some of which are:

*Wind, solar, and nuclear resources have unique characteristics that must be accommodated in the planning, design and operation of the bulk power system. Transmission infrastructure must be developed to reliably integrate these resources, while maximizing their potential to meet resource requirements and reduce greenhouse gas emissions.*

*The NRC predicts to receive applications for 32 new nuclear units by 2009 – proposed as 12,000 additional MW coming online in 2015-16.*

*Significant investment in transmission is vital to support these large units, including their larger safety loads following reactor trips – and ensure that they are reliably integrated into the system.*

*Continued high levels of dependence on natural gas for electricity generation in Florida, Texas, the Northeast, and Southern California have increased the bulk power system’s exposure to interruptions in fuel supply*

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<sup>12</sup> NERC, 2007 Long-Term Reliability Assessment, October 2007.

*and delivery. Efforts to address this dependence must be continued and actively expanded to avoid risks to future resource adequacy. Natural gas is expected to fuel 22 percent of electricity produced in the United States by 2016.*

*Several key transmission projects were completed and more transmission additions are proposed than reported in last year's assessment.*

*Significant investment in transmission is still required in many areas of North America as projected transmission additions lag behind demand growth and new resource additions in most areas.*

*The loss of industry workers and their years of accumulated expertise due to retirements is a serious threat to the bulk power system reliability, exacerbated by the lack of new recruits entering the field.*

## **ReliabilityFirst Corporation**

ReliabilityFirst Corporation (RFC) is one of eight regional reliability councils comprised of investor-owned electric utilities, power marketers and independent power producers. RFC serves the states of Delaware, Illinois, Indiana, Kentucky, Maryland, Michigan, New Jersey, Ohio, Pennsylvania, Virginia, West Virginia, Wisconsin and the District of Columbia. RFC consists of 18 load-serving entities, two regional transmission organizations, 26 generation suppliers, 21 transmission companies and four adjunct members.





RFC was established on Jan. 1, 2006, to replace the reliability oversight functions of MAAC, ECAR and MAIN. The two main control areas within the RFC footprint are the PJM RTO and the Midwest ISO. About one-third of the RFC load is in MISO.

RFC signatories participate in the wholesale energy and capacity markets, obtain transmission services, enter into bilateral transactions and participate in emergency procedures. RFC members are obligated to comply with its and NERC's operating and planning principles and standards.

### **Compliance Standards**

The RFC reliability standards require that sufficient generating capacity be installed to ensure that the probability of system load exceeding available capacity is no greater than 0.1 day in one year or one day in 10 years. Load-serving entities that are members of RFC have a capacity obligation determined by evaluating individual system load characteristics and unit size and operating characteristics. These obligation reserves must be met by all load-serving entities in PJM as signatories to the Reliability Assurance Agreement.

### **Reliability Assessment**

RFC anticipates that its target 15 percent reserve margin will be satisfied through 2012, provided that proposed generation projects will be completed in a timely manner and enhancements to the transmission network will be capable of reliably delivering those resources.

Reserve margins include over 7,800 MW of existing uncommitted capacity and projected capacity additions. In 2013, additional capacity resources will likely be needed to maintain adequate reserves.

Summer reserve margins in RFC range from a high of 20.4 percent in 2007, declining to 7.2 percent in 2016. These reserve margins are based on forecast net internal demand and potential capacity resources, not including uncommitted resources. This forecast does not include thousands of megawatts of "possible capacity additions" identified by the PJM and Midwest ISO generation interconnection queues as projects in service after 2012. These projects are not counted toward meeting reserve requirements as this capacity is not committed to serve regional load.

RFC's coincident total internal demand is projected to increase from 184,200 MW in 2007 to 208,900 MW in 2016. Direct-controlled and interruptible load management programs will provide up to 3,900 MW of demand response load reduction. Net internal demand is expected to grow at an average annual rate of 1.4 percent.



Over the next five years, there are plans for the addition of about 444 miles of extra high voltage transmission lines and six new substations. Three of those projects, mentioned earlier, include the 210-mile TrAIL project, the 250-mile PATH project and the 130-mile transmission line from Susquehanna, Pennsylvania to Roseland, New Jersey. These projects are expected to enhance and strengthen the area's bulk transmission network.

## **PJM Interconnection L.L.C.**

PJM coordinates with its member companies to meet the load requirements of the region. PJM's members also use bilateral contracts and the spot energy market to secure power to meet the electric load of about 51 million people over an area of 164,260 square miles. In order to reliably meet its load requirement, PJM must monitor and assess more than 56,000 miles of transmission lines for congestion concerns or physical capability problems. There are more than 500 members of PJM, including power generators, transmission owners, electricity distributors, power marketers and large consumers.

PJM was formed in 1927 with the interconnection of three utilities to realize the benefits and efficiencies of sharing resources. In 1997, PJM became the first fully functioning independent system operator. Today, PJM is the world's largest centrally dispatched grid operator and administers the world's largest competitive wholesale electricity market.

For a summary of PJM's recent history, see Page 2.

## **Compliance Standards**

The PJM reliability standards are the same as the standards for the RFC region. Sufficient generating capacity must be installed to ensure that the probability of system load exceeding available capacity is no greater than one day in 10 years. Currently, a reserve margin of 15 percent of the net internal demand is considered adequate.

PJM also evaluates the adequacy of the planned transmission system's ability to meet customer energy and demand requirements in light of reasonably expected outages to system facilities. Generation plans, transmission plans and load forecasts provide the basis for system models upon which the analysis is performed. The PJM Open Access Transmission Tariff contains certain technical requirements and standards applicable to generation interconnections with transmission providers.

In addition, PJM sets forth member responsive actions to emergency conditions. An emergency in the PJM Control Area is defined as:

An abnormal system condition requiring manual or automatic action to maintain system frequency, or to prevent loss of firm load, equipment damage, or tripping of system elements that could adversely affect the reliability of an electric system or the safety of persons or property;  
A fuel shortage requiring departure from normal operating procedures in order to minimize the use of such scarce fuel; or  
A condition that requires implementation of emergency procedures.

Emergency procedures include: reductions of load of interruptible customers, voltage reductions, voluntary load curtailments, public appeals to reduce load, automatic load shedding and manual load dumping.

### Reliability Assessment

The PJM RTO system peak load occurring on Aug. 8, 2007, was 139,428 MW, reflecting the Mid-Atlantic Region and the AP, ComEd, AEP, DAY, DLCO and Dominion Control Zones.<sup>13</sup> This peak load was about 3.6 percent lower than the 2006 peak load of 144,644 MW. At the end of 2007, PJM's total installed generating capacity was 163,498 MW. Recent units retired include Delaware Diesel (3 MW), Martins Creek 1 and 2 (280 MW) and Martins Creek D1-D2 (5 MW). PJM expects installed capacity to increase to 166,916 MW by June 2009.

The following distribution of energy resources was used to generate electricity in the PJM region in 2007:

<b>Fuel Type</b>	<b>2007 Capacity</b>	<b>2007 Generation</b>
Coal	40.5%	55.3%
Nuclear	18.9%	33.9%
Natural Gas	29.1%	7.7%
Hydro, Wind & Other	4.9%	2.6%
Oil	6.5%	0.5%

Source: PJM 2007 State of the Market Report

<sup>13</sup> 2007 State of the Market Report, PJM, March 11, 2008.

## Pennsylvania

The Pennsylvania outlook reflects the projections of RFC. Since transmission and generation are not regulated by the Commission, we must look to regional entities for data concerning the status of the electric system. While we can determine the aggregate load for the state's consumers, we do not know, with complete certainty, what generating facilities will be available to serve these consumers.

Planning the enhancement and expansion of transmission capability on a regional basis is one of the primary functions of regional transmission organizations. PJM implements this function pursuant to the Regional Transmission Expansion Planning Protocol (RTEPP) set forth in Schedule 6 of the PJM Operating Agreement. A key part of this regional planning protocol is the evaluation of both generation interconnection and merchant transmission interconnection requests, the procedures for which are codified under Part IV of the PJM Open Access Transmission Tariff.

Although transmission planning is performed on a regional basis, most transmission additions and upgrades in Pennsylvania are planned to support the local delivery system and new generating facilities.

All new generation, which anticipates interconnecting and operating in parallel with the PJM transmission grid and participating in the PJM capacity and/or energy markets, must submit an interconnection request to PJM.

These requests are placed in queues, or waiting lists, for the performance of feasibility studies and other technical reviews.

Proposed new generating plants and increased capacity of existing plants located in Pennsylvania total 19,555 MW through 2015. These facilities are either under study, under construction, partially in-service or in-service. Some project proposals are, however, duplicative, since more than one point of injection into the system is being evaluated. Also, this additional capacity may be used to serve Pennsylvania customers or out-of-state customers. Appendix A provides the status of generation interconnection requests located in Pennsylvania.

Appendix B lists the existing power plants located in Pennsylvania, along with the operating companies' names and fuel types. The generating capacity of these plants totals 49,042 MW. As stated earlier, the output of some of these facilities may serve loads outside of Pennsylvania. The state's demand is about 30,000 MW.

## Section 4 - Conclusions

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### Conclusions

Pennsylvania continues to benefit from a high level of electric service reliability.

RFC, which covers Pennsylvania, continues to have sufficient generating resources to maintain an adequate level of reliability through 2012, provided that proposed generation projects will be completed in a timely manner and enhancements to the transmission network will be capable of reliably delivering those resources. Load growth in the Mid-Atlantic Region is expected to be moderate. Thousands of megawatts of new capacity are proposed to be in service between 2008 and 2012, and it is anticipated that total generating capacity will exceed demand by a reliable margin.

Thus, RFC reports that there is sufficient generation, transmission and distribution capacity in Pennsylvania to meet the needs of electric consumers for the foreseeable future. By 2013, additional capacity resources may be needed to maintain adequate reserves.

The Commission continues to pursue demand side management, energy efficiency and load management programs and technologies to address ways to encourage customers to reduce their demand. In the long term, this initiative will improve overall energy efficiency, including energy markets and system reliability. Furthermore, the implementation of the Alternative Energy Portfolio Standards Act will serve as a catalyst for the development of alternative energy resources. Through demand side measures and overall improvements in energy efficiency, EDCs and all customer classes will benefit from this effort.

\* \* \*

To summarize the relevant statistics in this report, aggregate Pennsylvania sales in 2007 totaled approximately 149 billion kilowatthours, a 2.8 percent increase from that of 2006. Residential sales accounted for 34.7 percent of the total sales, followed by industrial (32 percent) and commercial (30.9 percent).

Between 1992 and 2007, the state's energy demand grew an average annual rate of 1.8 percent. Residential sales grew at an annual rate of 2.2 percent, commercial at 2.8 percent and industrial at 0.5 percent. Average total sales growth from 2002 to 2007 was 1.8 percent. The current aggregate five-year projection of growth in energy demand is 1.4 percent. This includes a residential growth rate of 1.5 percent, a commercial rate of 1.6 percent and an industrial rate of 1.1 percent.

Generation and transmission resources within the RFC region are expected to be adequate to maintain regional reliability. RFC's net internal demand forecast shows it increasing from 180,400 MW in 2007 to 205,300 MW in 2016 at an average annual growth rate of 1.5 percent. Net capacity resources are projected to be 220,150 MW by 2016, resulting in a reserve margin of only 7.2 percent. The amount of additional capacity resources needed to maintain an adequate 15 percent reserve margin ranges from 1,500 MW in 2013 to 11,100 MW in 2016.

## **Appendix A – Status of Plant Additions and Upgrades**

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Note: The following data represents Active PJM Generation Interconnection Requests. Some project requests may be duplicative, in that the same project may be considered for more than one point of injection into the system. However, in those cases, only one project is being considered for construction.

## Status of Pennsylvania's Plant Additions & Upgrades

Queue	Project	MW	In-Service	Status	Fuel
G06	Martins Creek #4	30	2007	Under Study	Coal
G46	Peach Bottom 500 kV	70	2007	Partially In-Service	Nuclear
I13	Hooversville 115 kV	29	2008	In-Service	Wind
K13	Hooversville 115 kV	6	2008	In-Service	Wind
L13	Rockwood	40	2008	In-Service	Wind
L19	Karthus 230 kV	290	2009	Suspended	Coal
M11	Susquehanna #1	111	2008	Partially In-Service	Nuclear
M12	Susquehanna #2	107	2010	Under Construction	Nuclear
M26	Champion	272	2011	Under Construction	Coal
N31	Freemansburg 69 kV	5	2008	In-Service	Methane
N32	Gans 138 kV	60	2009	Under Construction	Wind
N36	Gold-Sabinsville 115 kV	50	2009	Under Study	Wind
N39	Johnstown-Altoona 230 kV	80	2007	In-Service	Wind
O17	Somerset-Allegheny 115 kV	65	2008	Under Construction	Wind
O18	Salix-Claysburg 115 kV	85	2008	Under Study	Wind
O19	Somerset 115 kV	33	2009	Under Study	Wind
O26	Pine Grove 69 kV	8	2008	Under Construction	Diesel
O28	Jenkins-Harwood #2	85	2010	Suspended	Wind
O36	Honey Brook 12 kV	2	2008	Under Study	Methane
O38	Johnstown-Altoona 230 kV	50	2008	Under Construction	Wind
O39	Sunbury-Dauphin 69 kV	56	2009	Suspended	Wind
O40	Pine Grove - Frailey 69 kV	28	2009	Under Study	Wind
O46	Frackville-Hauto #3 69 kV	2	2007	In-Service	Wind
O48	Hays Mill - Lookout 115 kV	36	2008	Under Construction	Wind
O52	Gold-Potter Co 115 kV	50	2010	Under Study	Wind
O53	Beaver Valley #1	81	2007	Partially In-Service	Nuclear
O54	Beaver Valley #2	77	2007	Partially In-Service	Nuclear
O56	Osterburg East 115 kV	125	2009	Under Study	Wind
O59	Gold 115 kV	99	2009	Under Study	Wind
O60	Berlin 23 kV	5	2010	Under Study	Wind
O70	Susquehanna - Harwood 230 kV	124	2010	Suspended	Wind
O72	Hooversville - Central City	60	2009	Suspended	Wind
P01	Westover - Madera 115 kV	65	2009	Under Study	Wind
P03	Frackville-Hauto #3	1	2007	In-Service	Wind
P04	Peach Bottom 500 kV	550	2010	Under Construction	Natural Gas
P22	Johnstown - Altoona 230 kV	50	2008	Under Study	Wind
P28	Mehoopany 115 kV	150	2009	Under Study	Wind
P34	Washington Landfill	6	2008	Under Construction	Biomass
P45A	Thompson 115 kV	120	2009	Under Study	Wind
P47	Mansfield-S. Trpy 115 kV	100	2009	Under Study	Wind
P60	New Baltimore 115 kV	53	2009	Under Study	Wind
Q18	Moser 34.5 kV	5	2007	In-Service	Methane
Q20	Holtwood	140	2013	Under Construction	Natural Gas
Q24	Gold-Sabinsville 115 kV	101	2009	Under Study	Wind
Q25	Donegal-Iron City 138 kV	80	2008	Under Study	Wind
Q27	Frackville-Shennandoah 69 kV	100	2009	Under Construction	Wind
Q28	Eldred-Frackville 230 kV	220	2009	Under Study	Wind
Q34	Garrett 115 kV	100	2009	Under Study	Wind
Q36	Tyrone N. - Philipsburg 115 kV	60	2009	Under Study	Wind
Q40	Renovo Lock Haven	40	2009	Under Study	Wind
Q45	North Lebanon 13.2 kV	3	2007	In-Service	Methane

## Status of Pennsylvania's Plant Additions & Upgrades

Queue	Project	MW	In-Service	Status	Fuel
Q46	Curwensville 34.5 kV	10	2009	Under Study	Coal
Q47	Peach Bottom	140	2012	Under Study	Nuclear
Q52	Hunlock Creek	300	2011	Under Study	Coal
Q53	Summit-West Fall 115 kV	50	2008	Under Construction	Wind
Q58	Sunbury-Susquehanna	100	2009	Under Study	Wind
Q59	S. Reading-Birdsboro 64 kV	9	2008	Under Construction	Biomass
Q62	Sayton-Snake Spring 115 kV	100	2009	Under Study	Wind
Q63	Seneca 230 kV	16	2008	Under Study	Hydro
Q72	Mansfield - S. Troy 115 kV	110	2009	Under Study	Wind
Q73	South Reading 69 kV	19	2008	Under Construction	Biomass
R01	Susquehanna	800	2013	Under Study	Nuclear
R02	Susquehanna	800	2013	Under Study	Nuclear
R04	Sunbury 500 kV	817	2011	Under Study	Coal
R05	Thompson 115 kV	50	2009	Under Study	Wind
R08	Central City - Hooversville	300	2012	Under Study	Coal
R09	Summit - Claysburg 115 kV	48	2009	Under Study	Wind
R24	Susquehanna - Alburtis 500 kV	940	2011	Under Study	Coal
R27	Frackville	52	2010	Under Study	Coal
R32	Salix - Claysburg 115 kV	75	2009	Under Study	Wind
R40	Rockwood - Meyersdale 115 kV	2	2008	Under Construction	Wind
R41	Roxbury - Blain 23 kV	6	2007	Under Study	Methane
R42	Moselem 69 kV	6	2009	Suspended	Biomass
R43	Frackville - Hauto #3	20	2009	Under Study	Wind
R45	Mansfield - Tower Hill 115 kV	70	2009	Under Study	Wind
R53	Stanton - Brookside 69 kV	60	2009	Under Study	Wind
R56	Quemahoring - Hooversville	124	2009	Under Study	Wind
R57	South Reading 69 kV	11	2008	Under Construction	Biomass
R81	Emilie 230 kV	101	2008	Partially In-Service	Natural Gas
R92	DuBois 115 kV	70	2009	Under Study	Wind
SO5	Seneca #2 230 kV	16	2008	Under Study	Hydro
S103	Warren 115 kV	57	2008	Under Study	Natural Gas
S11	Seward-Tower 51 115 kV	70	2009	Under Study	Wind
S116	North Temple 230 kV	1200	2011	Under Study	Natural Gas
S20	Pine Grove-Fishbach 69 kV	50	2009	Under Study	Wind
S23	Graceton 230 kV	550	2011	Under Study	Natural Gas
S29B	Somerset 23 kV	6	2009	Under Study	Methane
S34	Handsome Lake Energy 345 kV	20	2007	In-Service	Natural Gas
S40	Hegins	11	2009	Under Construction	Methane
S41	Eldred-Cleveland 69 kV	13	2009	Under Study	Biomass
S42	Eldred-Fairview	18	2009	Under Study	Wind
S44	Mifflin County	110	2009	Under Study	Wind
S49	Bedford 115 kV	203	2009	Under Study	Wind
S64	York Inc. 115 kV	18	2011	Under Study	Biomass
S65	Cambria	85	2010	Under Study	Wind
S66	Downing Avenue 115 kV	96	2009	Under Study	Other
T100	Grover-East Towanda 230 kV	200	2009	Under Study	Wind
T102	Sunbury 69 kV	10	2007	In-Service	Coal
T103	Sunbury 69 kV	10	2007	In-Service	Coal
T108	Archbald 69 kV	9	2009	Under Study	Methane
T109	Keystone 500 kV	20	2009	Under Study	Coal
T113	Richmond 230 kV	16	2010	Under Study	Other
T117	Hunlock Creek 69 kV	90	2011	Under Study	Natural Gas



## Status of Pennsylvania's Plant Additions & Upgrades

Queue	Project	MW	In-Service	Status	Fuel
T118	Linwood 230 kV	10	2007	Under Study	Natural Gas
T121	Potter 115 kV	120	2009	Under Study	Wind
T129	Printz 230 kV	20	2008	Under Study	Natural Gas
T155	Belknap 25 kV	6	2010	Under Study	Hydro
T156	Champion	20	2011	Under Study	Coal
T162	Lock Haven	90	2011	Under Study	Coal
T174	Yukon-Browns Run 500 kV	930	2011	Under Study	Natural Gas
T179	Steel City	873	2012	Under Study	Natural Gas
T182	TMI 230 kV	24	2008	Under Study	Nuclear
T20	Falls	3	2009	Under Construction	Other
T27	Hyndman 34 kV	60	2010	Under Study	Wind
T37	Hegins	150	2010	Under Study	Wind
T38	Delco Tap 230 kV	900	2012	Under Study	Natural Gas
T39	Coudersport 46 kV	18	2008	Under Study	Wind
T49	Steel City	42	2008	Under Study	Natural Gas
T85	Roxbury - Blain 23 kV	6	2008	Under Study	Methane
T86	Bradford 34.5 kV	2	2008	Under Study	Methane
U1-010	Peach Bottom	18	2011	Under Study	Natural Gas
U1-012	Richmond	700	2013	Under Study	Natural Gas
U1-013	Eddystone	700	2013	Under Study	Natural Gas
U1-014	Cromby	700	2013	Under Study	Natural Gas
U1-038	Millheim	50	2010	Under Study	Wind
U1-050	Clearfield	200	2011	Under Study	Wind
U1-051	Clearfield	130	2011	Under Study	Wind
U1-057	North Lebanon	950	2011	Under Study	Natural Gas
U1-067	Honey Brook	2	2008	Under Study	Methane
U1-068	York 115 kV	10	2008	Under Study	Natural Gas
U1-069	Emsworth Locks & Dam	30	2015	Under Study	Hydro
U1-070	Dashields Lock & Dam	14	2015	Under Study	Hydro
U1-071	CW Bill Young Lock & Dam	15	2015	Under Study	Hydro
U1-072	Braddock Lock & Dam	10	2015	Under Study	Hydro
U1-073	Allegheny Lock & Dam #7	16	2015	Under Study	Hydro
U1-074	Point Marion Lock & Dam	10	2015	Under Study	Hydro
U1-076	Allegheny Lock & Dam #2	12	2015	Under Study	Hydro
U1-077	Allegheny Lock & Dam #4	16	2015	Under Study	Hydro
U1-078	Tionesta Dam	8	2015	Under Study	Hydro
U1-080	Montgomery Lock & Dam	35	2015	Under Study	Hydro
U1-081	Monongahela Lock & Dam #4	10	2015	Under Study	Hydro
U1-082	Maxwell Lock & Dam	10	2015	Under Study	Hydro
U1-086	Eldred 230 kV	150	2010	Under Study	Other
U2-015	Harwood E. Palmerton 230 kV	100	2010	Under Study	Wind
U2-016	Grover 230 kV	85	2011	Under Study	Wind
U2-027	Bradford 230 kV	50	2010	Under Study	Wind
U2-029	Passyunk	1	2015	Under Study	Other

Natural Gas -- 8,561 MW (43.8%)

Coal -- 3,161 MW (16.2%)

Nuclear -- 2,210 MW (11.3%)

Wind -- 4,986 MW (25.5%)

Other -- 266 (1.4%)

Source: PJM

Methane -- 57 MW (0.3%)

Diesel -- 8 MW (0.04%)

Biomass -- 82 MW (0.4%)

Hydro -- 224 MW (1.2%)

## Appendix B – Existing Electric Generating Facilities

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Note: The following data represents the most recently available data on existing generating facilities located in Pennsylvania. Data was provided by the Electric Power Generation Association. Below is a summary of generating facilities by fuel type:

Coal	22,017 MW (44.9%)
Gas	10,181 MW (22.2%)
Nuclear	9,936 MW (20.3%)
Oil	2,078 MW (4.2%)
Water	1,966 MW (4.0%)
Waste Coal	1,547 MW (3.2%)
Other	449 MW (0.9%)
Wind	181 MW (0.4%)
<u>Total</u>	<u>49,042 MW</u>

## Pennsylvania's Existing Electric Generating Facilities

COMPANY NAME	ST.	PLANT NAME	FUEL TYPE	ALT. FUEL TYPE	TECH. TYPE	MW
A/C Power-Colver Operations	PA	Colver Power Project	Waste Coal			102
AES Corporation	PA	Beaver Valley	Coal		ST	120
AES Corporation	PA	Ironwood	Gas		CC	765
Allegheny Electric Cooperative*	PA	Raystown Hydroelectric Project (Matsen)	Water			21.7
Allegheny Energy Supply*	PA	Armstrong Generating Station	Coal		ST	380
Allegheny Energy Supply*	PA	Chambersburg Gen. Facility, AE Units 12&13	Gas		SC	88
Allegheny Energy Supply*	PA	Gans Gen. Facility, AE Units 8&9	Gas			88
Allegheny Energy Supply*	PA	Hatfield's Ferry Power Station	Coal		ST	1728
Allegheny Energy Supply*	PA	Hunlock Creek Power Station	Gas		CT	46
Allegheny Energy Supply*	PA	Lake Lynn Hydroelectric Project	Water			52
Allegheny Energy Supply*	PA	Mitchell Generating Station	Coal	Oil		448.8
Allegheny Energy Supply*	PA	Springdale, Units 1,2,3,4 & 5	Gas		CC	628
AmerGen Energy Co. LLC (Exelon)	PA	Three Mile Island	Nuclear			926
Bio-Energy Partners	PA	Lake View Landfill	Other			6.1
Brascan Power	PA	Piney	Water			28
Calpine Corporation	PA	Philadelphia Water Project	Gas			23
Chambersburg Borough Electric Dept	PA	Chambersburg Power Plant	Gas	Oil	IC	30.47
Cogentrix	PA	Northampton Generating Station	Waste Coal			134
Cogentrix	PA	Scrubgrass Generating Plant	Waste Coal			83
Colmac Clarion Inc	PA	Colmac Clarion Inc	Waste Coal			32
Community Energy	PA	Bear Creek	Wind			24
Community Energy	PA	Locust Ridge Wind Farm	Wind			26
Competitive Power Ventures Inc. (CPV)	PA	Liverty Electric Power LLC	Gas		CC	610
Conectiv Energy	PA	Bethlehem Commerce Plant	Gas		CC	1,000
Constellation Energy	PA	Safe Harbor Hydroelectric Plant	Water			417.5
Constellation Power Inc.	PA	Handsome Lake Plant	Gas		SC	250
Constellation Power Inc. (50%)	PA	Panther Creek Energy Facility	Waste Coal			95
Corona Power LLC	PA	Sunbury Generating Station	Coal	Oil	ST/GT/IC	462.5
Covanta Energy Corporation	PA	Delaware Valley Resource Recovery Facility	Other			90
Covanta Energy Corporation	PA	Lancaster County Resource Recovery Facility	Other			35.7
Dominion Generation	PA	Fairless Energy	Gas			1200
Duke Energy	PA	Fayette County Energy Facility	Gas		CC	630
Dynegy	PA	Ontelaunee Energy Center	Gas		CCGT	545
Exelon Generation Co. LLC*	PA	Cromby Generating Station	Coal	Oil/Nat. Gas	ST	371
Exelon Generation Co. LLC*	PA	Croydon Plant	Gas			370
Exelon Generation Co. LLC*	PA	Eddystone Generating Station	Coal	Oil/Nat. Gas	ST	1489.2
Exelon Generation Co. LLC*	PA	Exelon Power Dist. Gen. Group (38 Units)	Oil	Gas		1078
Exelon Generation Co. LLC*	PA	Fairless Hills Generating	Other		ST/S	60
Exelon Generation Co. LLC*	PA	Limerick Nuclear Gen. Station, Units 1&2	Nuclear			2462
Exelon Generation Co. LLC*	PA	Muddy Run Hydroelectric Plant	Water			800
Exelon Generation Co. LLC*	PA	Peach Bottom Atomic Power St., Units 2&3	Nuclear			2364
Exelon Generation Co. LLC*	PA	Schuylkill Generating Station	Oil			175
FirstEnergy Generation Corp.*	PA	Bruce Mansfield Plant	Coal		ST	2741.1
FirstEnergy Generation Corp.*	PA	Seneca Pumped Storage Plant	Water			435
FirstEnergy Generation Corp.*	PA	York Haven	Water			19
FirstEnergy Nuclear Operating Co.*	PA	Beaver Valley Power Station	Nuclear			1775
FPL Energy	PA	Meyersdale Wind Power Project	Wind			33
FPL Energy	PA	Mill Run Wind (FPL)	Wind			15
FPL Energy	PA	Somerset Wind Farm	Wind			9
FPL Energy	PA	Waymart Wind Farm	Wind			63
Gas Recovery Services, Inc.	PA	Modern Landfill	Other			9
General Electric Co.	PA	Erie Works Plant	Coal			36
General Electric Co.	PA	Grove City Plant	Oil			10.6
Gilberton Power Co.	PA	John B Rich Power Station	Waste Coal			79.4
Harrisburg Authority	PA	Harrisburg WTE Plant	Other			24.1
Indiana University of Pennsylvania	PA	S.W. Jack Cogeneration Plant	Gas	Oil		24.4
Ingenco	PA	Mountain View Landfill	Other	Oil		16
Integrus Energy Services, Inc.	PA	WPS Westwood Generation	Waste Coal			30
J.P. Morgan Chase Bank	PA	Liberty Plant	Gas		CC	578
Kimberly Clark Corp	PA	Chester Operations	Waste Coal			59
Koppers, Inc.	PA	Koppers Montgomery Cogeneration Plant	Other			10
Merck & Co., Inc.	PA	West Point (PA) Merck Plant	Gas			30.25
Mid-Atlantic Energy Co.	PA	Clairton USX B Plant	Cog-Gas		ST	219.75
Mid-Atlantic Energy Co.	PA	Piney Creek LP	Waste Coal			32
Midwest Generation LLC	PA	Homer City (EME) Generation	Coal		ST	2012
Mount Carmel Cogen (Owner-Ken Pollack)	PA	Mount Carmel Cogen	Waste Coal			46.5
National Wind Power	PA	Garrett (Somerset County)	Wind			10.4

## Pennsylvania's Existing Electric Generating Facilities

North American Energy Services Co.	PA	North East Cogeneration Plant	Gas		CC	81.8
Northern Star Generation Services Co.	PA	Cambria County Cogen	Waste Coal			98
NRG Thermal, LLC	PA	NRG Energy Paxton LLC	Gas	Oil		12.6
P. H. Glatfelter Co.	PA	Spring Grove Glatfelter Cogen Plant	Coal			67.25
PEI Power Corp.	PA	Archbald Power Station	Gas		CT/ST	68
Pennsylvania Renewable Resources Assoc.	PA	Conemaugh Saltsburg	Water			15
Pennsylvania Wind Energy	PA	Humboldt Industrial Park	Wind			0.13
PH Glatfelter Co.	PA	Spring Grove Glatfelter Cogeneration Plant	Coal			67.25
Power Systems Operations	PA	Ebensburg Power Co	Waste Coal			48.5
PPL Generation LLC*	PA	PPL Allentown CTG	Oil		CT	64
PPL Generation LLC*	PA	PPL Brunner Island	Coal			1434
PPL Generation LLC*	PA	PPL Fishbach CTG	Oil		CT	37.2
PPL Generation LLC*	PA	PPL Harrisburg CTG	Oil		CT	64
PPL Generation LLC*	PA	PPL Harwood	Oil		CT	32
PPL Generation LLC*	PA	PPL Holtwood	Water			107.2
PPL Generation LLC*	PA	PPL Jenkins CTG	Oil		CT	32
PPL Generation LLC*	PA	PPL Lock Haven CTG	Oil		CT	18.6
PPL Generation LLC*	PA	PPL Lower Mt. Bethel Energy LLC	Gas		CC	574
PPL Generation LLC*	PA	PPL Martins Creek (Retirement 2007)	Coal	Oil	ST/GT	1800.9
PPL Generation LLC*	PA	PPL Montour LLC	Coal			1624.5
PPL Generation LLC*	PA	PPL Susquehanna LLC	Nuclear			2409
PPL Generation LLC*	PA	PPL Wallenpaupack	Water			40
PPL Generation LLC*	PA	PPL West Shore CTG	Oil		CT	37.2
PPL Generation LLC*	PA	PPL Williamsport CTG	Oil		CT	32
PPL Generation LLC*	PA	Suburban Generation Station c/o Martins Creek	Oil			29
Procter & Gamble	PA	Mehoopany Plant	Gas			53
Reliant Energy Wholesale Group*	PA	Blossburg Plant (Mothball Pending)	Gas			23.6
Reliant Energy Wholesale Group*	PA	Brunot Island Generating Station	Oil	Oil	CC/GT	291.6
Reliant Energy Wholesale Group*	PA	Cheswick Generating Station	Coal			580
Reliant Energy Wholesale Group*	PA	Conemaugh Power Plant	Coal	Oil	ST/IC	1883.2
Reliant Energy Wholesale Group*	PA	Elrama Generating Station	Coal			510.3
Reliant Energy Wholesale Group*	PA	FR Philips Generating Station	Coal			411.3
Reliant Energy Wholesale Group*	PA	Hamilton CT	Oil			19.6
Reliant Energy Wholesale Group*	PA	Hunterstown Plant	Gas		CC	954.8
Reliant Energy Wholesale Group*	PA	Keystone Generating Station	Coal	Oil		1883.2
Reliant Energy Wholesale Group*	PA	Mountain Plant	Gas	Oil		53.2
Reliant Energy Wholesale Group*	PA	New Castle Generating Station	Coal	Oil	ST/IC	352.9
Reliant Energy Wholesale Group*	PA	Ortanna Plant	Oil			19.6
Reliant Energy Wholesale Group*	PA	Portland Generating Station	Coal	Gas	ST/GT/CT	620.3
Reliant Energy Wholesale Group*	PA	Seward Generating Station	Waste Coal			521
Reliant Energy Wholesale Group*	PA	Shawnee Generating Station	Oil		CT	19.6
Reliant Energy Wholesale Group*	PA	Shawville Generating Station	Coal	Oil		631
Reliant Energy Wholesale Group*	PA	Titus Generating Station	Coal	Gas	ST/GT	260.6
Reliant Energy Wholesale Group*	PA	Tolna Station	Oil		CT	53.2
Reliant Energy Wholesale Group*	PA	Warren Power Plant	Gas	Oil		137.1
Reliant Energy Wholesale Group*	PA	Wayne	Oil			53
Rohm and Haas Co.	PA	Bristol	Oil			1.5
Schuylkill Energy Resources	PA	St Nicholas Cogeneration Plant	Waste Coal			80
Sithe Energies Inc.	PA	Allegheny Lock & Dam No. 8	Water			13
Sithe Energies Inc.	PA	Allegheny Lock & Dam No. 9	Water			17.4
Smurfit-Stone Corp.	PA	Philadelphia Container Plant	Oil			10
Solar Turbines Inc.	PA	York Solar Plant	Gas			70
Suez Energy Generation NA Inc.	PA	NEPCO	Waste Coal			59
Suez Energy Generation NA Inc.	PA	Northumberland Cogeneration Facility	Other			18
Sunoco Inc	PA	Marcus Hook Cogen Power Plant	Other			50.5
Sunoco Inc	PA	Marcus Hook Cogeneration Plant	Gas		CC	836.1
Temple University	PA	Temple Univ. Standby Electric Gen. Facility	Gas			16
Tenaska Power Fund LP (TPF)	PA	Armstrong Energy LLC	Gas		GT	688
Tractebel Power Inc.	PA	NEPCO	Waste Coal			
Tractebel Power Inc.	PA	Northumberland Cogeneration Facility	Other			
Trigen Energy Corp.	PA	Grays Ferry Power Plant	Gas		CC	174.6
Trigen Energy Corp.	PA	Pennsylvania House Power Plant	Other			0.1
UGI Development Co.*	PA	Hunlock Creek Power Station	Coal	Oil		50
Veolia ES Waste-to-Energy Inc	PA	Montenay Montgomery LP	Other			32.1
Veolia ES Waste-to-Energy Inc	PA	York County WTE	Other			38
Weyerhaeuser Co (WEYCO)	PA	Bradford (PA) Plant	Coal	Liq		52
Wheelabrator Technologies Inc.	PA	Wheelabrator Falls WTE	Other			53
Wheelabrator Technologies Inc.	PA	Wheelabrator Frackville Energy Co.	Waste Coal			48
WM Renewable Energy	PA	Pottstown Plant	Other			6.4
<b>Total MW in PA</b>						<b>49042.4</b>
*=verified data						
Revised 07/08						

Source: <http://www.epga.org/GeneratingFacilities.xls>