



# **Electric Power Outlook for Pennsylvania 2005-2010**

**August 2006**



**Pennsylvania Public Utility Commission**

## 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 September 1. The Commission is required to submit the report to the General Assembly, the Governor, the Office of Consumer Advocate 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 meet the needs of Pennsylvania consumers for the foreseeable future.

Regional generation adequacy and reserve margins of the Mid-Atlantic area have been maintained. While sufficient generation capacity is expected for the next five years, 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. Current initiatives at the federal level may also help improve the overall reliability and efficiencies of the transmission system.

To summarize the relevant statistics in this report, electricity demand in Pennsylvania has grown at a rate of 1.7% annually in the past 15 years. This is an aggregate figure for all sectors, including industrial, commercial and residential. Average total sales growth from 2000 to 2005 also was 1.7%. Aggregate sales in 2005 totaled approximately 146 billion kilowatthours (KWH), a 3.5% increase from that of 2004 and approximately 4.0% of the United States' total sales. The current projections for 2005-2010 show electricity demand growth at 1.5% annually. This includes a residential growth rate of 1.3%, a commercial growth rate of 1.9% and an industrial growth rate of 1.4%.

Regionally, generating resources are projected to be adequate for the next several years. The 2006 summer reserve margin for the Reliability *First*

regional reliability council's 12-state footprint is expected to be 18.6%, with a total internal demand of 191,600 MW and generating resources totaling 222,395 MW. The 2010 reserve margin is projected to be 9.6%.

As this report concludes, the regional electric system is adequate to meet the demand of Pennsylvania's consumers for the foreseeable future.

Pennsylvania must maintain its commitment to the basics of energy production and to encourage new initiatives in demand side efficiencies, renewable energy, and other new technologies so we can continue as a national leader in these areas.

To this end, the Commission is implementing the requirements of Act 213 (the Alternative Energy Portfolio Standards Act), which became effective on February 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, and municipal solid waste.

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 a Final Order governing net metering and proposed regulations concerning 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. The primary goal of LIRUP is to assist low income residential customers to reduce energy bills through usage reduction (energy 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

### *Purpose*

*Electric Power Outlook for Pennsylvania 2005-2010* 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 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 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% 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 Council (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\\_2006.pdf](http://www.puc.state.pa.us/general/publications_reports/pdf/EPO_2006.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 ReliabilityFirst 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 the North American Electric Reliability Council (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 January 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.

For nearly 39 years, MAAC and ECAR had been instrumental in maintaining a high level of electric service reliability. Through the establishment of reliability standards and operational protocols, under NERC's guidance, these councils required their member companies to provide sufficient generating capacity and transmission facilities to ensure adequate system resources for efficient operation. MAAC and ECAR were also responsible for coordinating the planning of new generation and transmission facilities. No Pennsylvania companies were members of MAIN, which will not be discussed in this report.

Now, 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 ten 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.

On March 31, 2006, RFC and Midwest Reliability Organization (MRO) entered into a Coordination Agreement for the purpose of coordinating the development of reliability standards and compliance and enforcement procedures; cooperating on the development and procedures employed to conduct power system analysis, studies and evaluations between the regions; and facilitating efficient and effective administration of MRO and RFC duties.

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 over 160,000 MW of generating capacity and over 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 at 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 October 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 January 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, now 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, will operate separately under the single PJM energy market as PJM South, including an additional 6,100 miles of transmission lines and nearly 23,000 MW of generating capacity.

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 the Midwest.



The Midwest ISO was founded on February 12, 1996, and was configured to comply with FERC's concept of an independent organization that will ensure the smooth regional flow of electricity in a competitive wholesale marketplace. The Midwest ISO began selling transmission service under its open access transmission tariff on February 1, 2002. Utilities with about 97,000 miles of transmission lines covering nearly one million square miles from Manitoba, Canada, to Kentucky have committed to participate in the Midwest ISO. Pennsylvania Power Company is the only Pennsylvania utility in the Midwest ISO.

The Midwest ISO "footprint" currently contains about 171,000 MW of generating capacity. The generator fuel mix is dominated by coal-fired resources, accounting for almost 60% of the capability. Most of the recent investment has been in natural gas resources, which currently account for 20% of the capability in the region. The Midwest ISO system-wide peak, set on August 3, 2005, was 131,434 MW.

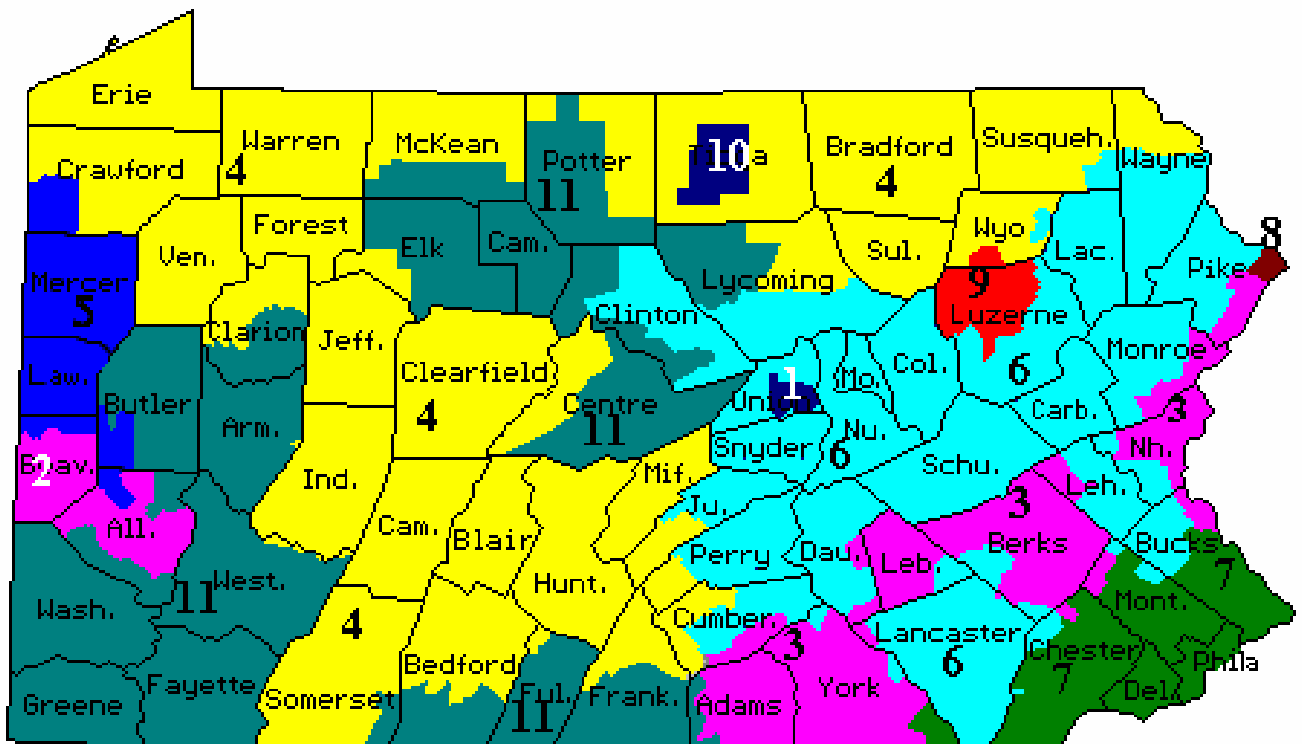
The Midwest ISO and PJM are both members of RFC.

See Appendix B for maps of the expanded PJM RTO and the Midwest ISO.

## *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 eleven 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. The EDCs have either entered into long-term contracts for power from traditional resources with affiliates or other generation suppliers or expect to purchase power from the wholesale market to fulfill their “provider-of-last-resort” 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>

The Commission is in the process of developing regulations to address the EDCs’ responsibilities concerning provider-of-last-resort service after the end of the transition period. On December 16, 2004, the Commission initiated a proposed rulemaking proceeding defining the obligation of EDCs to serve retail customers. The proposed rulemaking was published in the *Pennsylvania Bulletin* on February 26, 2005, with comments due April 27, 2005.<sup>5</sup> On November 10, 2005, the Commission reopened the public comment period. Comments were due March 8, 2006; reply comments were due April 7, 2006.

## ***Alternative Energy Portfolio Standards***

On November 30, 2004, Governor Edward Rendell signed into law the Alternative Energy Portfolio Standards Act (Act 213).<sup>6</sup> Generally, Act 213 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 One” and “Tier Two” resources. Tier One resources include solar, wind, low-impact hydropower, geothermal, biologically-derived methane gas, fuel cells, biomass and coal mine methane. Tier Two 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> 35 Pa.B. 4121; Docket No. L-0040169.

<sup>6</sup> 73 P.S. §§ 1647.1–1647.8.

Act 213, which took effect on February 28, 2005, requires that, within two years of the effective date, at least 1.5% of the electric energy sold to retail customers must be generated from Tier One resources. The percentage of electric energy derived from Tier One resources is to increase by at least 0.5% each year so that, by the 15<sup>th</sup> year, at least 8% of the energy sold to retail customers in each service territory will come from these resources. Energy sold from Tier Two resources is to increase to 10% of the total retail sales by the 15<sup>th</sup> year. The Act sets forth a 15-year schedule for complying with its mandates. The compliance schedule is as follows:

		<u>Tier I %</u> <u>(incl. Solar)</u>	<u>Tier II</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%	.0013%
Year 3:	June 1, 2008 through May 31, 2009	2.0%	4.2%	.0013%
Year 4:	June 1, 2009 through May 31, 2010	2.5%	4.2%	.0013%
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%	.0203%
Year 7:	June 1, 2012 through May 31, 2013	4.0%	6.2%	.0203%
Year 8:	June 1, 2013 through May 31, 2014	4.5%	6.2%	.0203%
Year 9:	June 1, 2014 through May 31, 2015	5.0%	6.2%	.0203%
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%	.2500%
Year 12:	June 1, 2017 through May 31, 2018	6.5%	8.2%	.2500%
Year 13:	June 1, 2018 through May 31, 2019	7.0%	8.2%	.2500%
Year 14:	June 1, 2019 through May 31, 2020	7.5%	8.2%	.2500%
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 is as follows:

	<u>Exemption expires</u>	<u>Compliance begins</u>
Pike County Power and Light	December 31, 2005	February 28, 2007
Citizens Electric of Lewisburg	December 31, 2007	January 1, 2008
Wellsboro Electric Company	December 31, 2007	January 1, 2008
UGI Utilities Inc. – Electric Division	December 31, 2006	February 28, 2007
Pennsylvania Power Company	December 31, 2006	February 28, 2007
Duquesne Light Company	December 31, 2007	January 1, 2008
West Penn Power Company	December 31, 2010	January 1, 2011
PPL Electric Utilities, Inc.	December 31, 2009	January 1, 2010
Pennsylvania Electric Company	December 31, 2010	January 1, 2011
Metropolitan Edison Company	December 31, 2010	January 1, 2011
PECO Energy Company	December 31, 2010	January 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 October 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>7</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. On April 12, 2006, the Commission released a Request for Qualifications, via Secretarial Letter, for parties interested in serving as an Alternative Energy Credit Program Administrator.

On November 10, 2005, the Commission adopted a proposed rulemaking order which promotes onsite generation by customer-generators using renewable resources and eliminates barriers which may have previously existed regarding net metering. The regulations, which were approved as final on June 22, 2006, 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>8</sup>

Also, on November 10, 2005, the Commission adopted a proposed rulemaking order which establishes regulations governing interconnection for customer-generators. The proposed regulations were drafted with a view towards promoting 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>9</sup>

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<sup>7</sup> Docket No. M-00051865.

<sup>8</sup> Docket No. L-00050174.

<sup>9</sup> Docket No. L-00050175.

## SECTION 2 – HISTORIC AND FORECAST DATA

### 2005: A Year in Review

The eight largest EDCs operating in Pennsylvania deliver approximately 99% of the jurisdictional companies' electrical energy needs. Aggregate sales in 2005 totaled approximately 146 billion kilowatthours (KWH), a 3.5% increase from that of 2004 and approximately 4.0% of the United States' total sales. Residential sales led the Pennsylvania market capturing 34.9% of the total sales, followed by industrial (32.4%) and commercial (30.4%). Aggregate non-coincident peak load increased to 28,850 MW in 2005, up 7.0% from 2004. See Tables 2.1 and 2.2 below.

**Table 2.1 Major PA EDCs' Energy Demand, Peak Load and Customers Served (2005)**

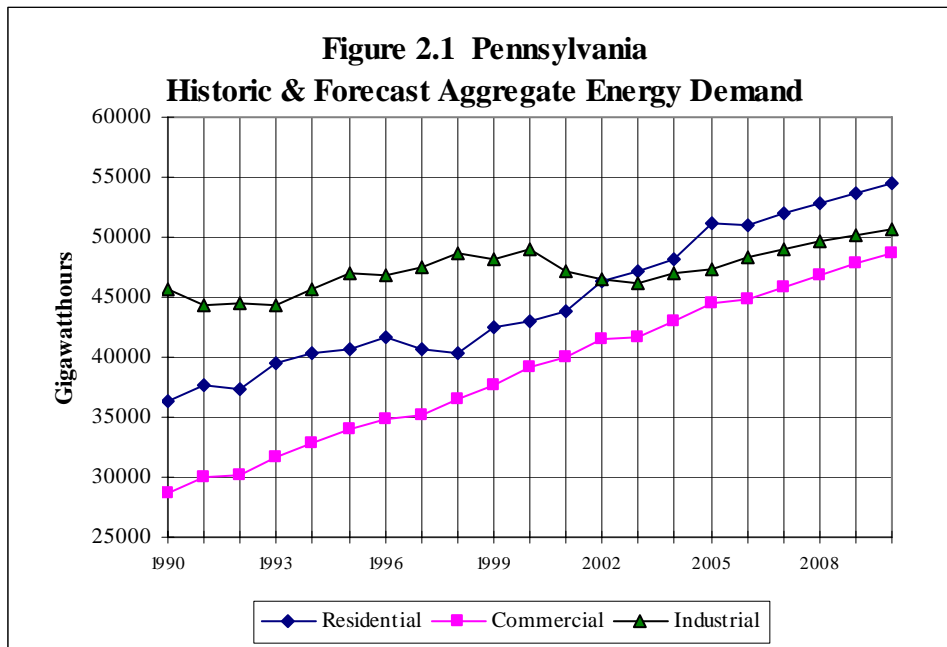
EDC	Total Customers Served	Residential (MWH)	Commercial (MWH)	Industrial (MWH)	Other (MWH)	Sales For Resale (MWH)	Total Consumption (MWH)	System Losses (MWH)	Company Use (MWH)	Net Energy For Load (MWH)	Peak Load (MW)
Duquesne	586,355	4,133,600	6,565,958	3,128,361	68,628	82,724	13,979,271	860,616	n/a	14,839,887	2,884
Met-Ed	530,011	5,398,738	4,491,082	4,083,016	35,703	0	14,008,539	952,840	n/a	14,961,379	2,752
Penelec	587,533	4,456,524	5,009,594	4,729,091	40,564	0	14,235,773	1,365,667	n/a	15,601,440	2,531
Penn Power	157,660	1,664,331	1,366,607	1,628,727	6,532	0	4,666,197	389,756	n/a	5,055,953	1,021
PECO	1,543,543	13,468,664	8,520,215	15,773,692	962,032	183,920	38,908,523	2,468,611	63,360	38,971,883	8,626
PPL	1,365,305	14,218,431	13,156,789	9,720,133	206,276	1,020,899	38,322,528	2,800,994	81,508	41,205,030	7,083
UGI	62,005	548,458	356,456	119,849	5,845	73	1,030,681	58,681	2,064	1,091,426	201
West Penn	705,580	7,087,624	4,891,781	8,050,583	52,450	704,236	20,786,674	1,443,197	n/a	22,229,871	3,752
Total	5,537,992	50,976,370	44,358,482	47,233,452	1,378,030	1,991,852	145,938,186	10,340,362	146,932	153,956,869	28,850
% of Total		34.93%	30.40%	32.37%	0.94%	1.36%	100.00%				
2005 v 2004	0.66%	6.32%	3.58%	0.68%	4.50%	-3.61%	3.45%	-0.96%	-16.31%	1.50%	7.02%

**Table 2.2 Major PA EDCs' Energy Demand, Peak Load and Customers Served (2004)**

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	587,664	3,885,587	6,453,654	3,228,573	69,683	312,103	13,949,600	788,104	30,423	14,768,127	2,646
Met-Ed	520,687	5,070,963	4,251,165	4,041,540	33,569	0	13,397,237	1,088,986	n/a	14,486,223	2,468
Penelec	585,658	4,249,263	4,791,759	4,588,866	39,852	0	13,669,740	1,084,432	n/a	14,754,172	2,425
Penn Power	157,412	1,545,200	1,296,100	1,553,900	6,600	0	4,401,800	308,350	6,950	4,717,100	898
PECO	1,536,754	12,507,039	8,414,312	15,741,001	914,257	78,414	37,655,023	2,635,852	59,353	40,350,228	7,567
PPL	1,351,170	13,441,358	12,576,277	9,610,976	196,971	1,003,448	36,829,031	3,039,253	76,992	39,945,276	7,335
UGI	61,922	521,275	350,564	112,026	5,588	67	989,520	58,562	1,859	1,049,941	212
West Penn	700,630	6,723,588	4,691,157	8,038,797	52,161	672,352	20,178,055	1,436,902	n/a	21,614,957	3,407
Total	5,501,897	47,944,273	42,824,988	46,915,679	1,318,681	2,066,384	141,070,006	10,440,441	175,577	151,686,024	26,958
% of Total		33.99%	30.36%	33.26%	0.93%	1.46%	100.00%				

Between 1990 and 2005, the state's energy demand grew at an average rate of 1.7% annually. Residential sales grew at an annual rate of 2.3%, commercial at 3.0% and industrial at 0.25%. Over the past five years, residential demand increased an average of 3.5% per year, commercial at 2.6% and industrial at a minus 0.7%. Average total sales growth from 2000 to 2005 was 1.7%.

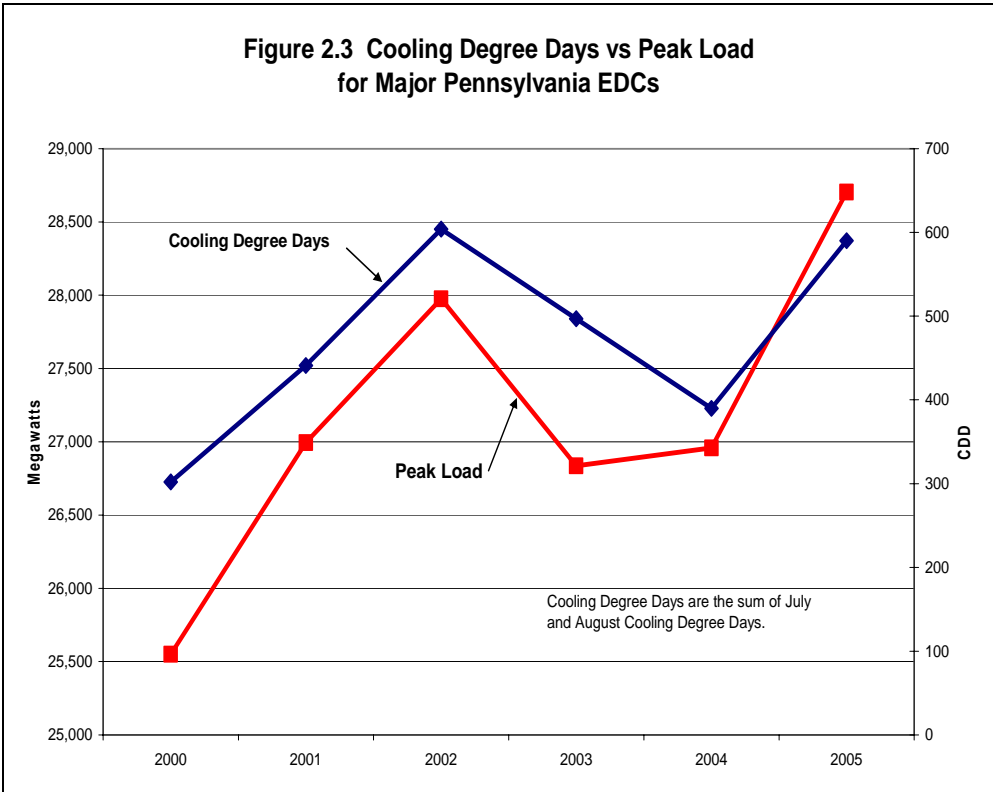
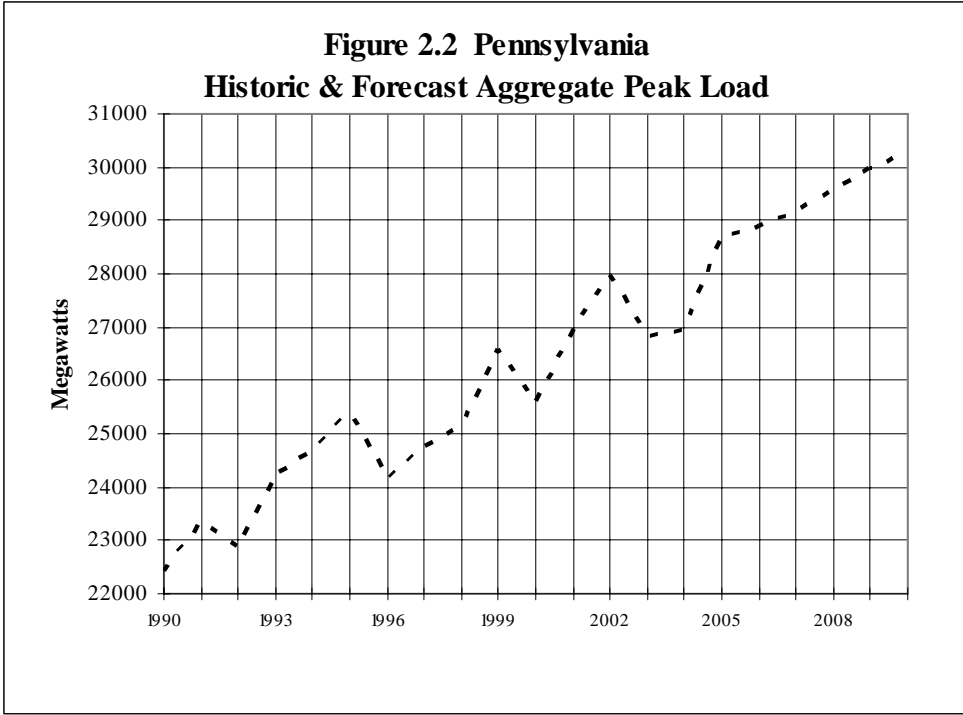
The current aggregate 5-year projection of growth in energy demand is 1.5%. This includes a residential growth rate of 1.3%, a commercial rate of 1.9% and an industrial rate of 1.4%. See Figure 2.1 below. Gigawatthours are a measure of energy sales over time and megawatts are a measure of the instantaneous peak usage of electricity.



Over the past 15 years, the average aggregate non-coincident peak load for the major EDCs increased 1.7% per year. From 2000 to 2005, the peak load increased by an average of 2.5% per year. From 2004 to 2005, the aggregate peak load increased from 26,958 MW to 28,703 MW, or 6.5%. See Figure 2.2.

Most EDCs are summer peaking and there is 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 five years.

The combined forecast of the EDCs' peak load shows the load increasing from 28,703 MW in 2005 to 30,236 MW in 2010 at an average growth rate of 1.0%. 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.



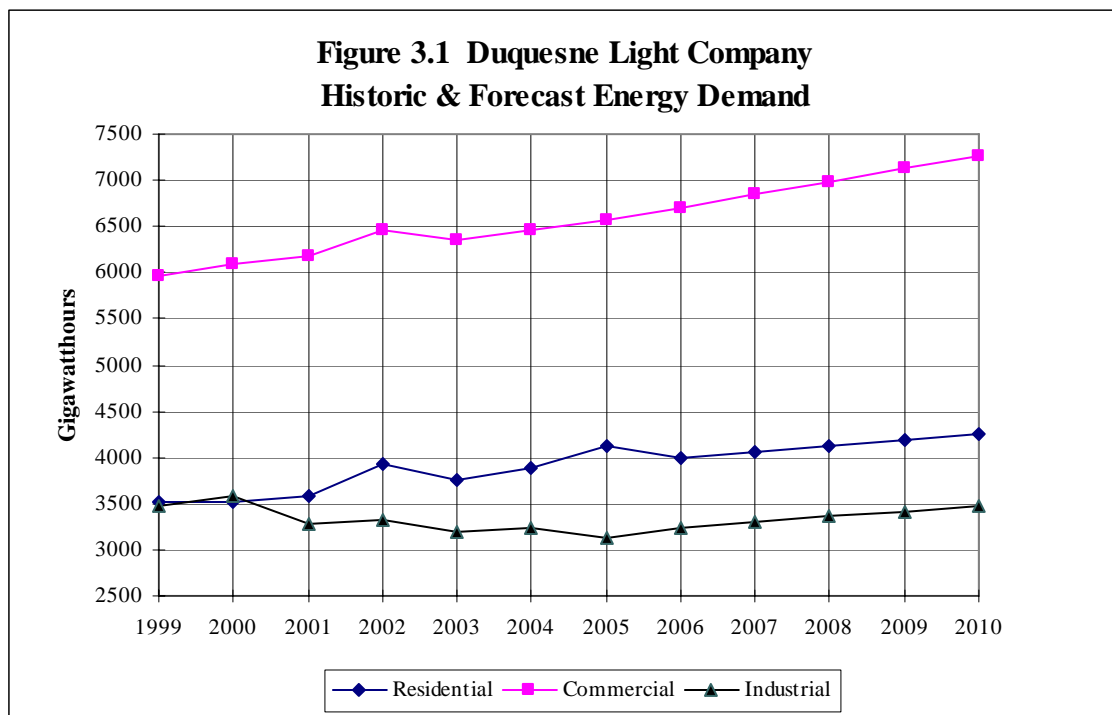


## Summary of EDC Data

### Duquesne Light Company

Duquesne Light Company (Duquesne) provides service to 586,355 electric utility customers in southwestern Pennsylvania. In 2005, Duquesne had energy sales totaling 14.0 billion kilowatthours (KWH) -- up 0.2% from 2004. Commercial sales continued to dominate Duquesne's market with 47.0% of the total sales, followed by residential (29.6%) and industrial (22.4%).

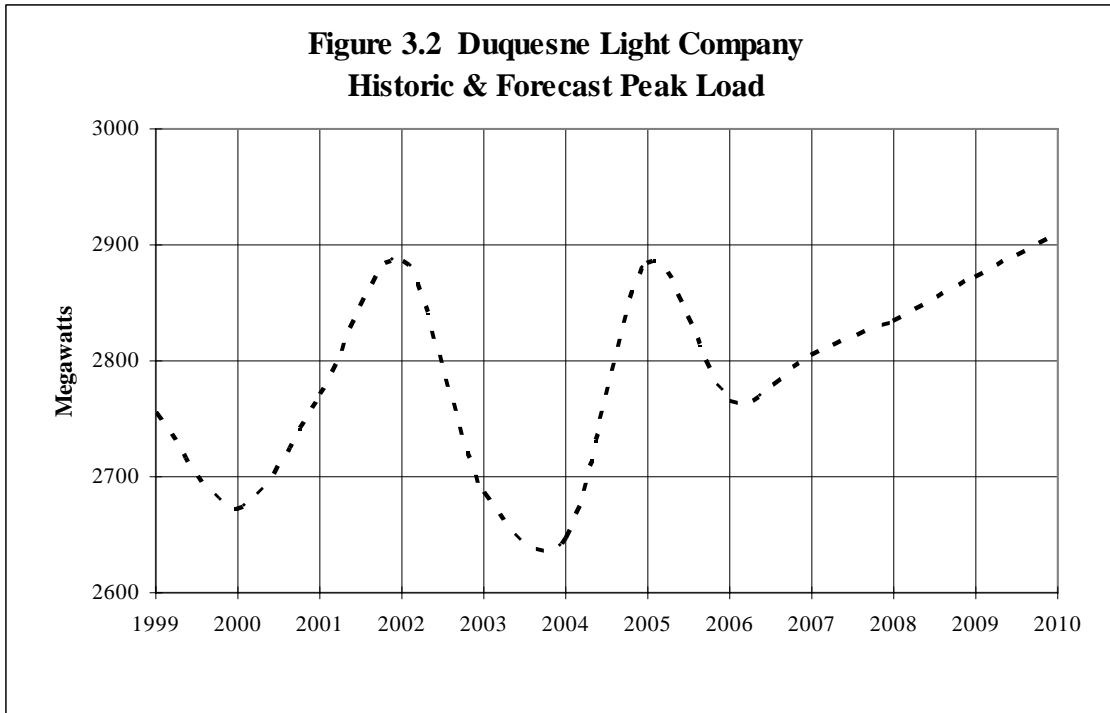
Between 1990 and 2005, Duquesne's total energy demand increased about 1.2% per year. Residential demand grew at an annual rate of 2.0% and commercial demand grew at 1.5%. Industrial demand decreased at a rate of 0.4% per year.



The current 5-year projection of average growth in total energy consumption is about 1.6% per year. This includes a residential growth rate of 0.5%, a commercial growth rate of 2.0% and an industrial growth rate of 2.1% per year.

Duquesne's summer peak load, occurring on August 12, 2005, was 2,884 megawatts (MW), representing an increase of 9.0% over last year's peak of 2,646 MW. The 2005/2006 winter peak load was 2,174 MW or 1.8% higher than that of the previous year.

The actual average annual peak load growth rate over the past fifteen years was 1.3%. Duquesne's forecast shows the peak load increasing from 2,884 MW in the summer of 2005 to 2,910 MW in 2010, or an average annual growth rate of 0.2%.



Tables 3.1-3.4 provide Duquesne's forecasts of peak load and residential, commercial and industrial energy demand from 1996 through 2006.

On January 1, 2005, PJM began managing the flow of wholesale electricity for Duquesne. While Duquesne's integration into PJM involves transferring control of 670 miles of high voltage transmission lines, ownership remains with Duquesne. PJM is now the regional reliability coordinator for Duquesne.

For calendar year 2005, 13 electric generation suppliers (EGSs) sold a total of 7.4 billion KWH to retail customers in Duquesne's service territory, or about 53% of total consumption. There were no instances in 2005 where EGSs failed to supply scheduled load.

Over the next three years, Duquesne plans to add 39.2 miles of high voltage transmission lines to its system at a total cost of \$7.95 million.

Duquesne's Direct Load Control Program continued in 2005 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 has a low-income weatherization program (LIURP), which includes the installation of a variety of weatherization measures.

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													
		1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006			
1996	2463	2537													
1997	2671	2599	2583												
1998	2484	2634	2614	2614											
1999	2756	2652	2632	2632	2715										
2000	2673	2671	2653	2653	2736	2638									
2001	2771	2690	2677	2677	2757	2661	2661								
2002	2886	2709	2702	2702	2776	2682	2682	2850							
2003	2686	2728	2727	2727	2798	2702	2702	2884	2822						
2004	2646	2749	2754	2754		2723	2723	2912	2841	2719					
2005	2884	2769	2782	2782			2743	2934	2855	2740	2722				
2006			2810	2810				2953	2870	2771	2765	2765			
2007				2839						2884	2801	2805	2805		
2008											2831	2835	2835		
2009												2873	2873		
2010															2910

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

Year	Actual Energy Demand	Projected Residential Energy Demand													
		1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006			
1996	3321	3175													
1997	3274	3167	3228												
1998	3382	3171	3234	3234											
1999	3526	3176	3240	3240	3366										
2000	3509	3181	3249	3249	3383	3610									
2001	3584	3187	3258	3258	3400	3643	3643								
2002	3924	3192	3267	3267	3415	3681	3681	3671							
2003	3759	3198	3276	3276	3432	3716	3716	3726	3697						
2004	3886	3204	3287	3287		3759	3759	3772	3721	3811					
2005	4134	3210	3297	3297			3780	3810	3744	3832	3941				
2006			3210	3307				3846	3767	3879	4018	3984			
2007				3318						3791	3925	4088	4054		
2008											3978	4125	4118		
2009												4198	4181		
2010															4243

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

Year	Actual Energy Demand	Projected Commercial Energy Demand												
		1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006		
1996	5737	5732												
1997	5703	5757	5858											
1998	5826	5824	5945	5945										
1999	5954	5910	6039	6039	5983									
2000	6092	6005	6159	6159	6073	6113								
2001	6170	6102	6301	6301	6157	6231	6231							
2002	6458	6198	6450	6450	6236	6336	6336	6324						
2003	6346	6295	6606	6606	6327	6438	6438	6467	6436					
2004	6454	6400	6773	6773		6540	6540	6570	6505	6428				
2005	6566	6505	6944	6944			6628	6653	6570	6479	6568			
2006			7118	7118				6729	6636	6597	6711	6693		
2007				7296					6703	6713	6870	6847		
2008										6841	6949	6991		
2009											7076	7129		
2010												7259		

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

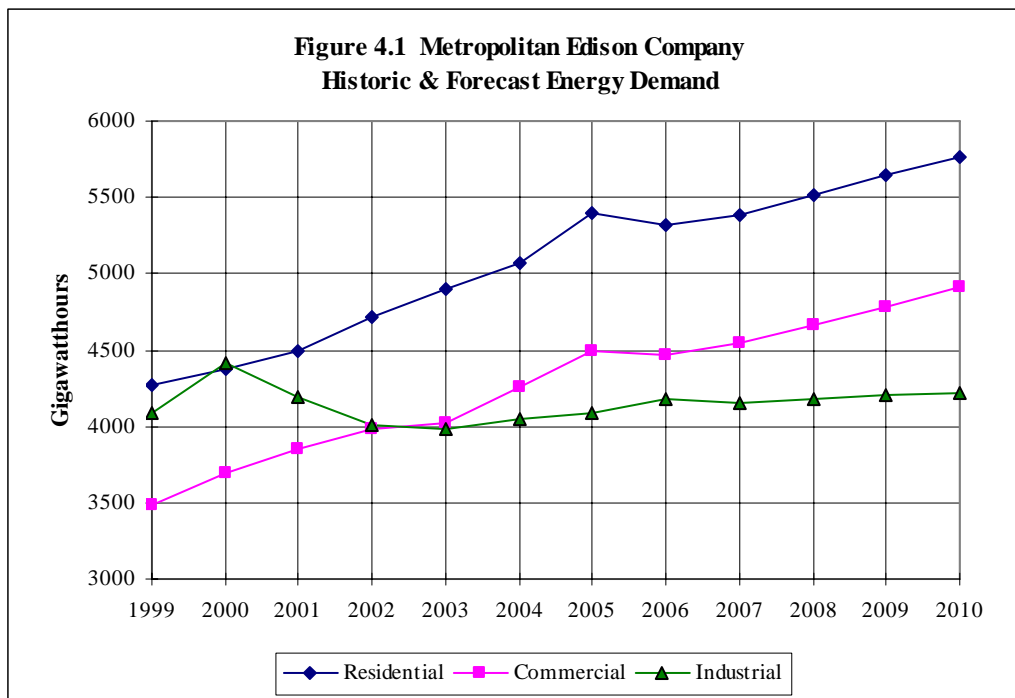
Year	Actual Energy Demand	Projected Industrial Energy Demand												
		1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006		
1996	3285	3349												
1997	3501	3717	3431											
1998	3412	3941	3690	3690										
1999	3481	4013	3828	3828	3771									
2000	3581	4086	3919	3919	3836	3537								
2001	3283	4160	3988	3988	3901	3576	3576							
2002	3328	4236	4059	4059	3964	3615	3615	3315						
2003	3189	4313	4130	4130	4027	3651	3651	3382	3349					
2004	3229	4393	4202	4202		3695	3695	3445	3415	3031				
2005	3128	4474	4276	4276			3742	3491	3437	2990	3347			
2006			4351	4351				3530	3453	3033	3407	3229		
2007				4427					3471	3075	3458	3299		
2008										3123	3501	3359		
2009											3542	3411		
2010												3464		

## Metropolitan Edison Company

Metropolitan Edison Company (Met-Ed) provides service to over 530,000 electric utility customers in eastern and south central Pennsylvania. In 2005, Met-Ed had total energy sales of 14.0 billion kilowatthours (KWH) - - up 4.6% from 2004. Residential sales dominated Met-Ed's market with 38.5% of the total sales, followed by commercial (32.1%) and industrial (29.1%).

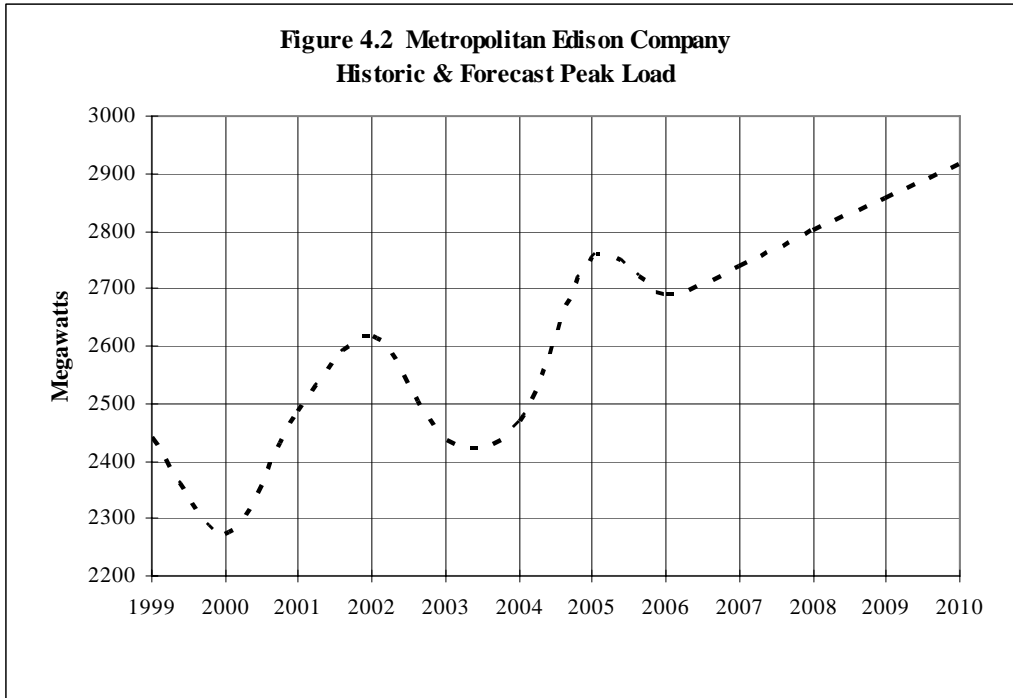
Between 1990 and 2005, Met-Ed's energy demand grew at an average rate of 2.7% per year. Residential and commercial sales have maintained relatively steady growth over the period (3.2% for residential and 4.0% for commercial), while industrial sales have fluctuated considerably. Industrial sales grew at an average rate of about 1.0%.

The current five-year projection of growth in total energy demand is 1.3%. This includes a residential growth rate of 1.3%, a commercial growth rate of 1.8% and an industrial rate of 0.7%.



Met-Ed's summer peak load, occurring on August 4, 2005, was 2,752 megawatts (MW), representing an increase of 11.5% from last year's system peak of 2,468 MW. The 2005/06 winter peak load was 2,442 MW or 1.3% higher than the previous year's winter peak of 2,411 MW.

The actual average annual peak load growth rate over the past fifteen years was 2.7%. Met-Ed's forecast shows its peak load increasing from 2,752 MW to 2,915 MW by 2010, or an average annual growth rate of 1.2%.



Tables 4.1-4.4 provide Met-Ed's forecasts of peak load and residential, commercial and industrial energy demand from 1996 through 2006.

A restructuring settlement, approved by the Commission in 1998, provided for the transfer of 80% 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 currently retains ownership of the York Haven generating station, which has a combined generating capacity of 19.4 MW.

In 2005, 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 2005, seven electric generation suppliers sold a total of 489 million KWH to retail customers in Met-Ed's service territory, or about 3.5% of total consumption.

Met-Ed'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, 31 time-of-day conversions were made. Approximately \$1.9 million was spent in 2005 for a peak load reduction of 151 KW, a load shift of 23 KW and energy savings totaling 1,182,409 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													
		1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006			
1996	2017	2094													
1997	2224	2139	2139												
1998	2176	2176	2176	2194											
1999	2439	2205	2205	2233	2263										
2000	2274	2228	2228	2268	2318	2404									
2001	2486	2264	2264	2305	2373	2456	2455								
2002	2616	2303	2303	2343	2429	2508	2504	2503							
2003	2438	2345	2345	2386	2486	2559	2553	2554	2527						
2004	2468	2388	2388	2429		2612	2602	2611	2584	2570					
2005	2752	2432	2432	2472				2652	2668	2639	2634	2625			
2006			2475	2515					2725	2691	2702	2689	2689		
2007				2559						2747	2756	2740	2740		
2008											2817	2801	2801		
2009												2857	2856		
2010															2915

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

Year	Actual Energy Demand	Projected Residential Energy Demand													
		1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006			
1996	4135	3961													
1997	4034	4028	4028												
1998	4040	4041	4041	4122											
1999	4266	4095	4095	4204	4264										
2000	4377	4152	4152	4264	4352	4344									
2001	4496	4222	4222	4328	4442	4430	4430								
2002	4721	4292	4292	4391	4533	4516	4501	4607							
2003	4895	4361	4361	4451	4624	4602	4577	4708	4846						
2004	5071	4430	4430	4513		4687	4651	4804	4860	4885					
2005	5399	4499	4499	4575			4724	4892	4980	4977	5097				
2006			4571	4636				4988	5094	5083	5176	5325			
2007				4697						5211	5190	5276	5390		
2008											5300	5376	5515		
2009												5472	5640		
2010															5764

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

Year	Actual Energy Demand	Projected Commercial Energy Demand												
		1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006		
1996	3144	3026												
1997	3209	3106	3106											
1998	3209	3179	3179	3224										
1999	3487	3258	3258	3306	3414									
2000	3699	3338	3338	3389	3518	3518								
2001	3855	3420	3420	3473	3622	3622	3751							
2002	3985	3512	3512	3567	3732	3732	3860	3976						
2003	4018	3607	3607	3663	3841	3837	3970	4096	4057					
2004	4251	3703	3703	3762		3947	4079	4216	4144	4170				
2005	4491	3805	3805	3864			4189	4336	4258	4281	4310			
2006			3912	3972				4456	4363	4388	4400	4462		
2007				4083					4464	4498	4506	4547		
2008										4601	4616	4668		
2009											4721	4788		
2010												4908		

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

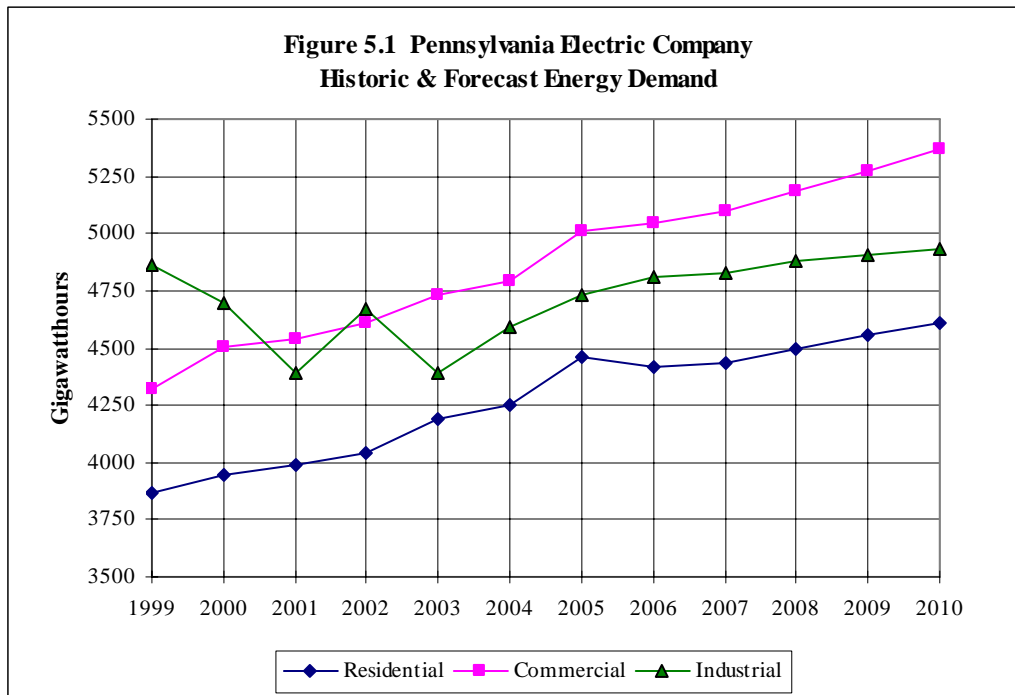
Year	Actual Energy Demand	Projected Industrial Energy Demand												
		1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006		
1996	4033	3985												
1997	4097	4064	4064											
1998	4173	4132	4132	4136										
1999	4085	4197	4197	4229	4239									
2000	4412	4294	4294	4305	4307	4313								
2001	4186	4389	4389	4370	4365	4352	4312							
2002	4012	4468	4468	4448	4435	4410	4409	4263						
2003	3986	4535	4535	4560	4506	4459	4490	4341	3954					
2004	4042	4627	4627	4664		4508	4567	4419	3989	4080				
2005	4083	4724	4724	4776			4645	4498	4010	4136	4077			
2006			4810	4876				4577	4030	4162	4119	4176		
2007				4964					4050	4206	4145	4155		
2008										4237	4175	4177		
2009											4195	4200		
2010												4221		

## Pennsylvania Electric Company

Pennsylvania Electric Company (Penelec) provides service to nearly 588,000 electric utility customers in western and northern Pennsylvania. In 2005, Penelec had energy sales totaling 14.2 billion kilowatthours (KWH) - - up about 4.1% from 2004. Commercial sales dominated Penelec's market with 35.2% of the total sales, followed by industrial (35.2%) and residential (31.3%).

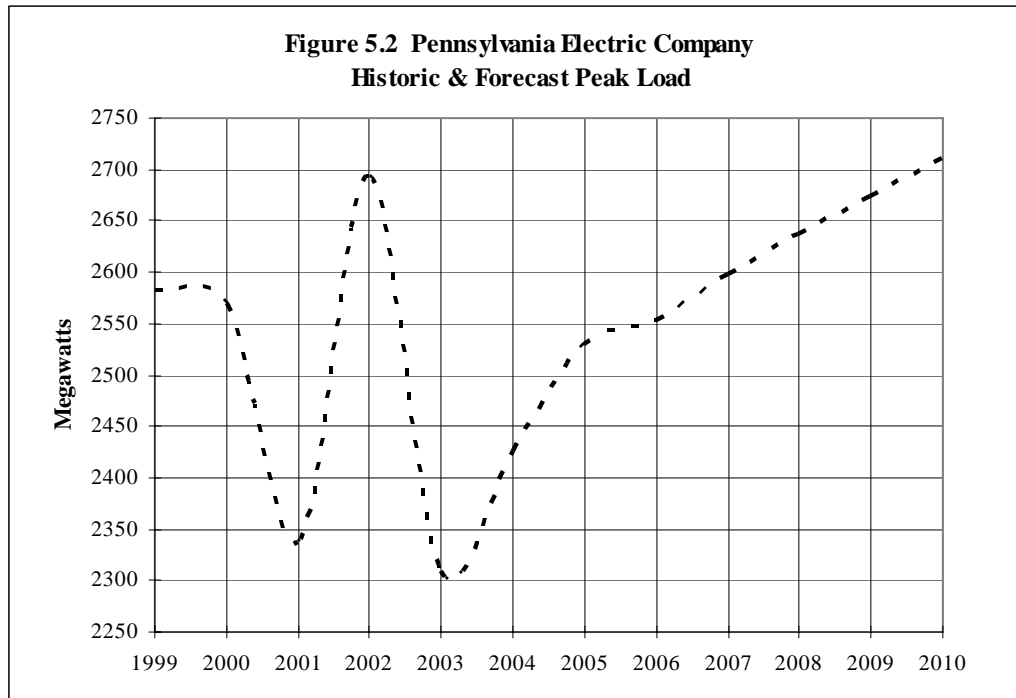
Between 1990 and 2005, Penelec's energy demand grew at an average rate of 1.3% per year. Residential and commercial sales have maintained relatively steady growth over the period (1.6% for residential and 3.1% for commercial), while industrial sales have fluctuated greatly. Industrial sales for 2005 were 2.5% less than the 1990 level, or an average annual decrease of 0.4%.

The current five-year projection of growth in total energy demand is 1.0%. This includes a residential growth rate of 0.7%, a commercial growth rate of 1.4% and an industrial growth rate of 0.8%.



Penelec's 2005 summer peak load, occurring on August 4, 2005, was 2,531 megawatts (MW), representing an increase of 8.3% from last year's summer peak of 2,337 MW. The 2005/06 winter peak load was 2,410 MW or 0.6% lower than the previous year's winter peak of 2,425 MW.

The actual average annual peak load growth rate over the past fifteen years was 1.3%. Penelec's forecast shows its summer peak load increasing from 2,531 MW in 2005 to 2,711 MW in 2010, or an average increase of 1.0%.



Tables 5.1-5.4 provide Penelec's forecasts of peak load and residential, commercial and industrial energy demand from 1996 through 2006.

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

Penelec divested all of its generation facilities in 1999.

In 2005, Penelec purchased approximately 3.1 billion KWH from cogeneration and small power production projects. Contract capacity (defined as PJM installed capacity credits) is 396.45 MW.

For calendar year 2005, out of 22 electric generation suppliers, six sold a total of 952 million KWH to retail customers in Penelec's service territory, or about 6.7% of total consumption, down from 8.7% in 2004.

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, 18 time-of-day conversions were made. Over \$1.9 million was spent in 2005 for a peak load reduction of 169 KW, a load shift of 14 KW and energy savings totaling 1.1 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													
		1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006			
1996	2652	2706													
1997	2481	2743	2751												
1998	2613	2728	2742	2688											
1999	2583	2769	2795	2730	2672										
2000	2569	2818	2855	2772	2704	2651									
2001	2337	2867	2904	2813	2737	2675	2321								
2002	2693	2914	2951	2853	2770	2700	2347	2337							
2003	2308	2527	2564	2472	2804	2737	2373	2375	2410						
2004	2425	2567	2604	2506		2760	2399	2405	2456	2438					
2005	2531	2606	2643	2540			2425	2437	2505	2481	2511				
2006			2682	2573				2465	2544	2525	2554	2554			
2007				2606					2592	2565	2598	2598			
2008										2604	2637	2637			
2009											2674	2674			
2010															2711

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

Year	Actual Energy Demand	Projected Residential Energy Demand													
		1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006			
1996	3897	3813													
1997	3801	3853	3853												
1998	3756	3890	3890	3870											
1999	3864	3921	3921	3922	3894										
2000	3949	3948	3948	3950	3931	3881									
2001	3991	3982	3982	3979	3968	3915	3977								
2002	4167	4015	4015	4009	4007	3951	4021	4043							
2003	4187	4046	4046	4039	4045	3984	4065	4089	4194						
2004	4249	4077	4077	4069		4017	4109	4134	4162	4135					
2005	4457	4109	4109	4099			4154	4180	4203	4186	4295				
2006			4139	4129				4226	4245	4236	4333	4420			
2007				4160						4287	4287	4385	4438		
2008											4339	4438	4496		
2009												4524	4554		
2010															4614

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

Year	Actual Energy Demand	Projected Commercial Energy Demand													
		1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006			
1996	4044	4031													
1997	4098	4156	4156												
1998	4198	4282	4282	4283											
1999	4319	4388	4388	4408	4347										
2000	4509	4495	4495	4531	4459	4387									
2001	4538	4600	4600	4658	4571	4473	4472								
2002	4697	4695	4695	4784	4684	4558	4549	4613							
2003	4727	4795	4795	4908	4797	4643	4626	4730	4782						
2004	4792	4898	4898	5031		4728	4704	4846	4874	4825					
2005	5010	4995	4995	5152			4781	4962	4976	4912	4928				
2006			5099	5270				5078	5076	4986	4990	5049			
2007				5386						5178	5060	5064	5099		
2008											5136	5140	5188		
2009												5213	5277		
2010															5367

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

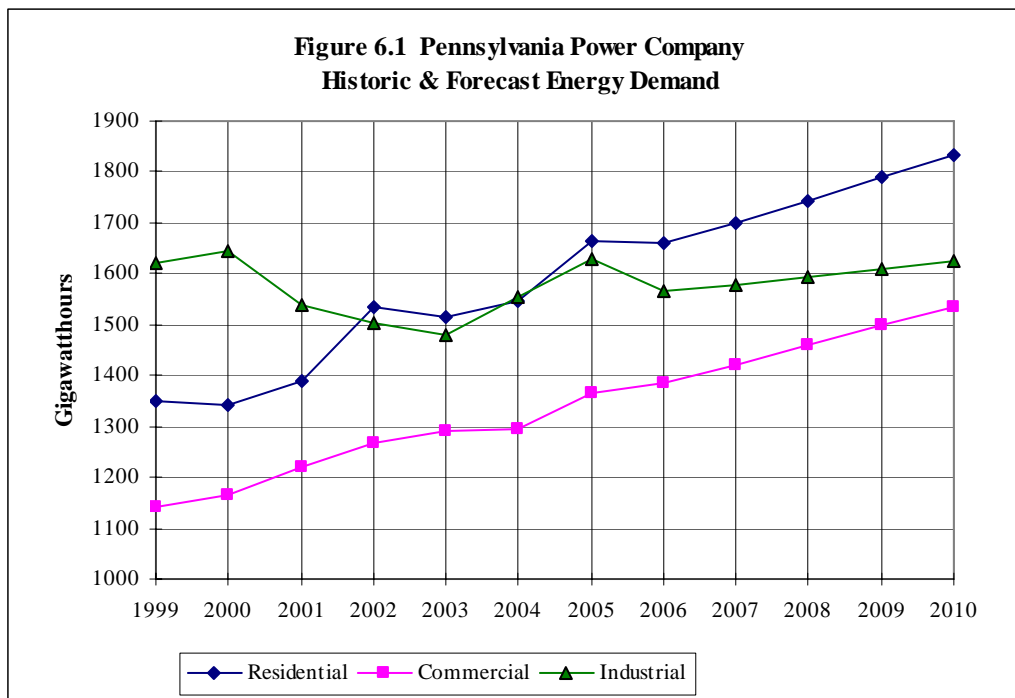
Year	Actual Energy Demand	Projected Industrial Energy Demand													
		1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006			
1996	4563	4809													
1997	4836	5054	5054												
1998	4996	5172	5172	4836											
1999	4866	5235	5235	4894	5047										
2000	4698	5309	5309	4948	5114	5004									
2001	4392	5363	5363	5002	5205	5093	4857								
2002	4315	5411	5411	5057	5293	5177	5144	4670							
2003	4391	5460	5460	5113	5383	5239	5214	4783	4492						
2004	4589	5515	5515	5169		5306	5244	4846	4708	4561					
2005	4729	5570	5570	5226			5274	4887	4749	4666	4527				
2006			5637	5284				4928	4797	4737	4612	4807			
2007				5342						4845	4791	4679	4828		
2008											4815	4708	4881		
2009												4725	4905		
2010															4930

## Pennsylvania Power Company

Pennsylvania Power Company (Penn Power) provides service to nearly 158,000 electric utility customers in western Pennsylvania. In 2005, Penn Power had energy sales totaling 4.7 billion kilowatthours (KWH) - - an increase of 6.0% from the 2004 figure. Residential sales lead Penn Power's market with 35.7% of the total sales, followed by industrial (34.9%) and commercial (29.3%).

Between 1990 and 2005, Penn Power's energy demand grew at an average rate of 1.8% per year. Residential and commercial sales have maintained relatively steady growth over the period at rates of 3.3% and 4.3%, respectively. Industrial sales have fluctuated considerably and, in 2005, were only 90.7% of the 1990 level, or an average annual decline of 0.6%.

The current five-year projection of growth in total energy demand is 1.4%. This includes a residential growth rate of 2.0%, a commercial growth rate of 2.3% and a rate of decline in the industrial sector of 0.4%.

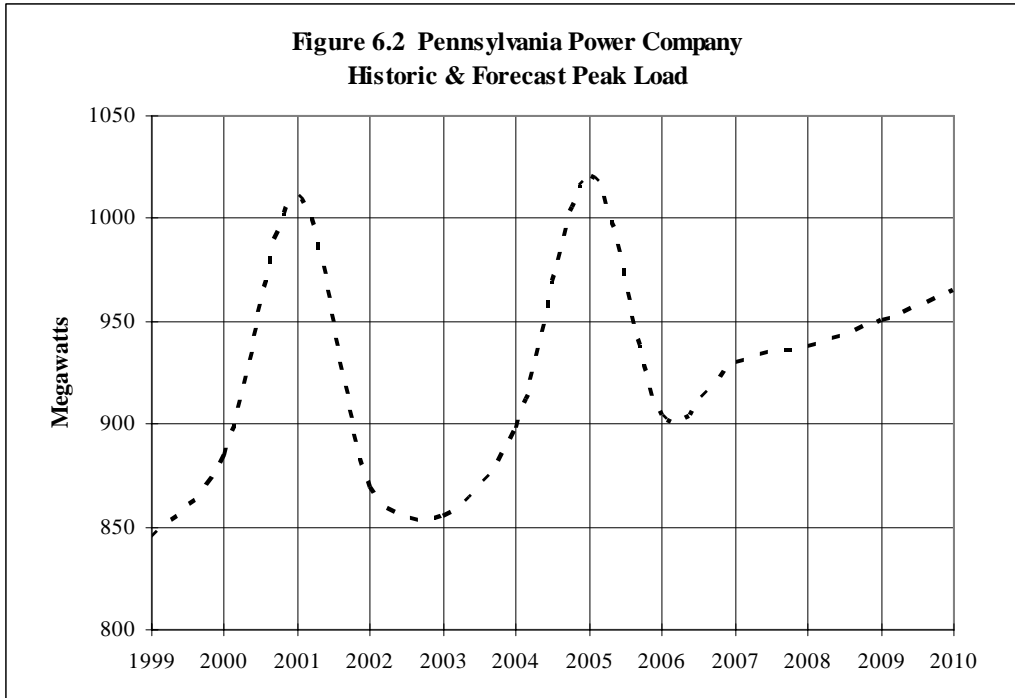


Penn Power's 2005 summer peak load, occurring on July 26, 2005, was 1,021 megawatts (MW), representing an increase of 13.7% from last year's peak of 898 MW. The 2005/06 winter peak load of 877 MW was 7.9% lower than the previous year's winter peak of 952 MW.

The actual average annual peak load growth rate over the past fifteen years was 2.5%. Penn Power's forecast shows its peak load decreasing from 1,021 MW



in the summer of 2005 to 904 MW in 2006, and then increasing to 965 MW by 2010, or an average annual growth rate of 6.7%. Penn Power's peak load represents about 8.1% 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 1996 through 2006.

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.

Competitive bidding has been taking place during 2006 for provider of last resort (POLR) service for all customers electing to receive default service from Penn Power during the period January 1, 2007, to May 31, 2008. The solicitation is for a 17- month period to allow for synchronization with final form POLR regulations in June 2008.<sup>10</sup>

<sup>10</sup> Docket No. P-00052188.

For calendar year 2005, one electric generation supplier sold about 6.1 million KWH to retail customers in Penn Power's service territory or about 0.1% of total consumption. Penn Power purchased 28,584 KWH from an independent power producer in 2005.

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. Nearly \$600,000 was spent in 2005 for a peak load reduction of 47 KW and energy savings totaling 341,474 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													
		1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006			
1996	784	759													
1997	829	781	781												
1998	895	804	804	902											
1999	845	831	830	919	880										
2000	885	858	858	937	897	935									
2001	1011	892	892	958	919	957	883								
2002	869	928	928	980	941	980	904	918							
2003	855	962	962	1003	963	1003	930	947	891						
2004	898	997	997	1026	983	1025	956	983	923	865					
2005	1021	1019	1019	1050			982	1022	958	884	952				
2006			977	1012				1058	985	900	921	904			
2007				1036						916	930	930			
2008										929	938	938			
2009											951	951			
2010													965		

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

Year	Actual Energy Demand	Projected Residential Energy Demand													
		1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006			
1996	1254	1211													
1997	1238	1238	1238												
1998	1278	1265	1265	1300											
1999	1351	1292	1292	1318	1300										
2000	1341	1320	1320	1336	1319	1390									
2001	1391	1373	1373	1355	1339	1412	1360								
2002	1533	1430	1430	1374	1360	1434	1395	1447							
2003	1513	1459	1459	1398	1381	1457	1430	1483	1512						
2004	1545	1488	1488	1423	1403	1479	1451	1520	1523	1542					
2005	1664	1502	1502	1445			1473	1558	1552	1571	1612				
2006			1516	1467				1597	1579	1599	1636	1659			
2007				1494						1607	1629	1665	1699		
2008											1657	1695	1744		
2009												1723	1789		
2010														1835	

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

Year	Actual Energy Demand	Projected Commercial Energy Demand													
		1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006			
1996	996	936													
1997	1013	970	970												
1998	1090	1010	1010	1042											
1999	1143	1054	1054	1074	1110										
2000	1164	1103	1103	1108	1145	1204									
2001	1220	1167	1167	1143	1181	1242	1162								
2002	1268	1238	1238	1182	1221	1284	1206	1270							
2003	1291	1314	1314	1221	1262	1327	1251	1327	1279						
2004	1296	1395	1395	1262	1304	1372	1293	1387	1310	1309					
2005	1367	1436	1436	1304			1335	1449	1342	1339	1353				
2006			1478	1348				1514	1373	1370	1374	1384			
2007				1392					1405	1402	1400	1422			
2008										1429	1427	1460			
2009											1453	1498			
2010												1535			

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

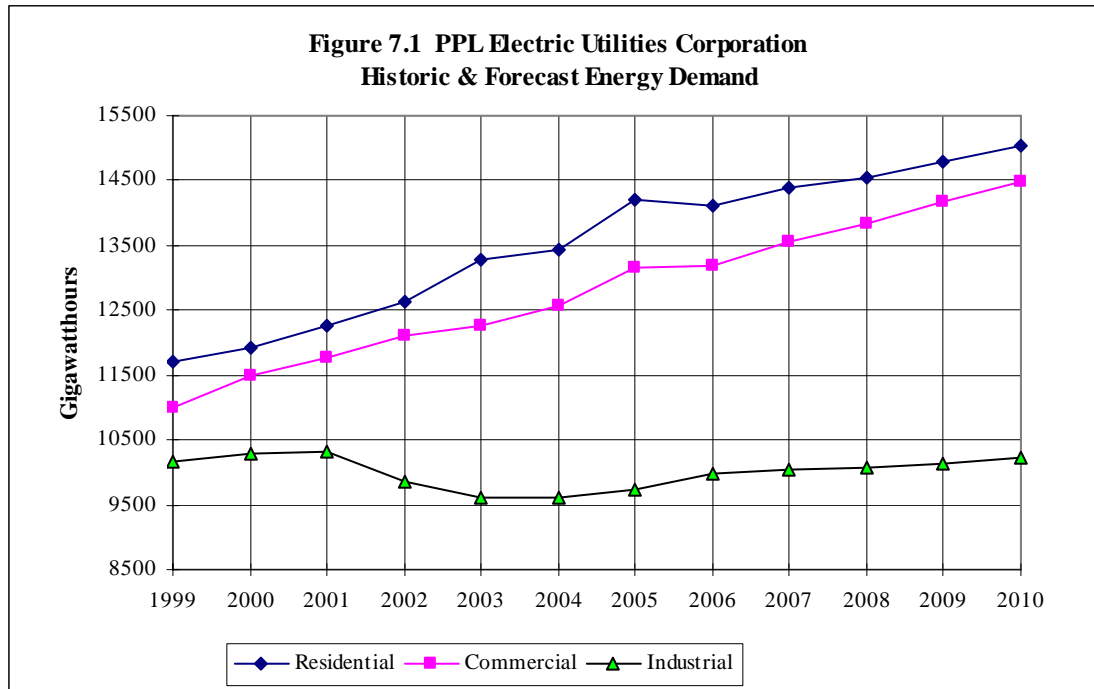
Year	Actual Energy Demand	Projected Industrial Energy Demand													
		1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006			
1996	1693	1894													
1997	1659	1967	1967												
1998	1436	2002	2002	1677											
1999	1619	2043	2043	1716	1483										
2000	1643	2082	2082	1759	1520	1563									
2001	1539	2138	2138	1803	1558	1596	1618								
2002	1505	2184	2184	1847	1596	1635	1644	1514							
2003	1481	2230	2230	1890	1633	1673	1677	1516	1521						
2004	1554	2273	2273	1933	1670	1711	1716	1517	1507	1529					
2005	1629	2314	2314	1981			1758	1519	1500	1555	1582				
2006			2357	2029				1520	1493	1570	1558	1565			
2007				2076					1489	1580	1563	1578			
2008										1583	1568	1594			
2009											1569	1610			
2010												1626			

## PPL Electric Utilities Corporation

PPL Electric Utilities Corporation (PPL) provides service to about 1.37 million homes and businesses over a 10,000 square mile area in 29 counties of central eastern Pennsylvania. In 2005, PPL had energy sales totaling 38.3 billion kilowatthours (KWH) -- up 4.1% from 2004. Residential sales continued to dominate PPL's market with 37.1% of the total sales, followed by commercial (34.3%) and industrial (25.4%).

Between 1990 and 2005, PPL's energy demand grew an average of 2.1% per year. Residential energy sales grew at an annual rate of 2.3%, commercial at a 2.9% rate and industrial at 0.7%.

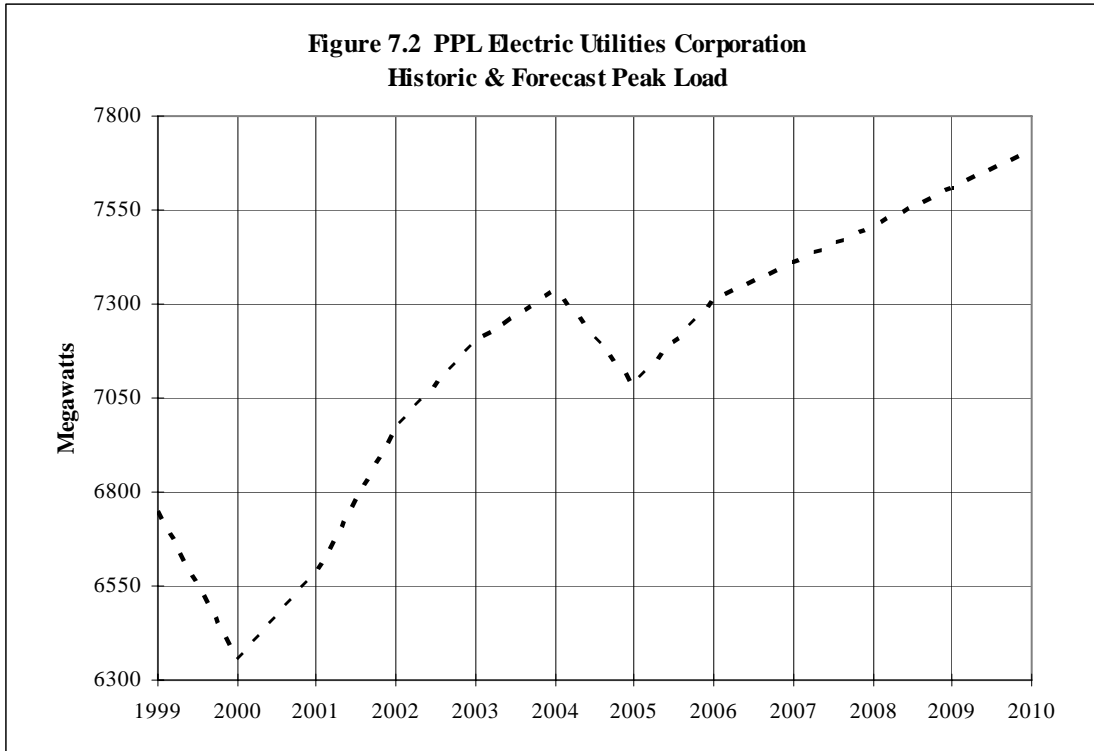
The current five-year projection of average growth in energy demand is 1.4%. This includes growth rates of 1.1% for residential, 2.0% for commercial and 1.0% for industrial.



PPL's 2005/06 winter peak load, occurring on December 14, 2005, was 7,083 megawatts (MW), representing a decrease of 3.4% from last year's peak of 7,335 MW. The 2005 summer peak load was 7,035 MW compared to the previous summer's peak of 6,434 MW, or a 9.3% increase.

The actual average annual peak load growth rate over the past fifteen years was 1.5%. PPL's five-year winter peak load forecast scenario shows the peak load increasing from 7,083 MW in 2005/06 to 7,710 MW in the winter of 2010/11 at an

average annual rate of 1.7%. The summer peak load is projected to increase to 7,500 MW by 2010.



Tables 7.1-7.4 provide PPL's forecasts of peak load and residential, commercial and industrial energy demand from 1996 through 2006.

Net operable generating capacity of 8,614 MW (summer rating) includes 43.4% coal-fired capacity and 23.8% nuclear capacity. Natural gas and dual fuel units account for 26.1% of the total. Independent power producers also provided 293 MW to the system. In 2005, PPL purchased nearly 2.3 billion KWH from cogeneration and independent power production facilities, or about 5.9% of total sales.

For calendar year 2005, eight electric generation suppliers sold a total of approximately 458 million KWH to retail customers in PPL's service territory, or about 1.2% of total consumption, down from 2.8% in 2004.

For 2005, 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% of the 2005 summer peak load.

PPL's Price Response Service permits customers to respond to market price signals by reducing a portion of their load. In 2005, an estimated 1,100 KW peak load reduction was achieved, with energy savings totaling about 29,600 KWH. The Residential Demand Side Response Rider, which provides for the option of shifting load from on-peak hours, reduced the peak by 104 KW and saved 60,435 KWH. PPL also has a low-income weatherization program (LIURP), which includes the installation of a variety of weatherization measures.

PPL is a member of PJM and Reliability*First*.

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

Year	Actual Peak Demand	Projected Peak Load Requirements													
		1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006			
1996	6506	6830													
1997	5925	6920	6910												
1998	6688	7055	6935	6910											
1999	6746	7190	7030	6935	6815										
2000	6355	7315	7120	7030	6905	6580									
2001	6583	7450	7130	7120	7006	6680	6850								
2002	6970	7590	7250	7130	7040	6770	6960	7000							
2003	7197	7725	7350	7250	7140	6860	7060	7070	6790						
2004	7335	7860	7470	7350		6960	7170	7040	6860	7200					
2005	7083	8040	7580	7470			7270	7120	7000	7300	7200				
2006			7690	7580				7200	7140	7410	7290	7310			
2007				7690						7320	7510	7390	7410		
2008											7610	7490	7510		
2009												7580	7610		
2010															7710

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

Year	Actual Energy Demand	Projected Residential Energy Demand													
		1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006			
1996	11848	11475													
1997	11434	11640	11690												
1998	11156	11815	11760	11690											
1999	11704	11980	11830	11760	11740										
2000	11923	12145	11910	11830	11850	12031									
2001	12269	12320	12020	11910	11980	12150	12176								
2002	12640	12495	12160	12020	12120	12280	12324	12391							
2003	13266	12680	12290	12160	12260	12421	12478	12514	12868						
2004	13441	12865	12430	12290		12562	12634	12650	13062	13308					
2005	14218	13040	12570	12430			12799	12803	13259	13505	13950				
2006			12710	12570				12955	13462	13728	14311	14099			
2007				12710					13671	13962	14675	14392			
2008										14198	15019	14555			
2009												15349	14794		
2010															15036



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

Year	Actual Energy Demand	Projected Commercial Energy Demand												
		1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006		
1996	10288	10100												
1997	10309	10350	10490											
1998	10597	10610	10740	10490										
1999	11002	10885	11000	10740	10740									
2000	11477	11165	11280	11000	10980	11090								
2001	11778	11445	11560	11280	11240	11275	11291							
2002	12117	11725	11870	11560	11500	11444	11431	11850						
2003	12273	11995	12140	11870	11760	11612	11561	12033	12212					
2004	12576	12265	12410	12140		11782	11699	12219	12507	13275				
2005	13157	12525	12680	12410			11848	12411	12757	13601	12967			
2006			12940	12680				12602	13101	13975	13436	13188		
2007				12940					13418	14286	13946	13562		
2008										14631	14517	13836		
2009											15068	14166		
2010												14492		

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

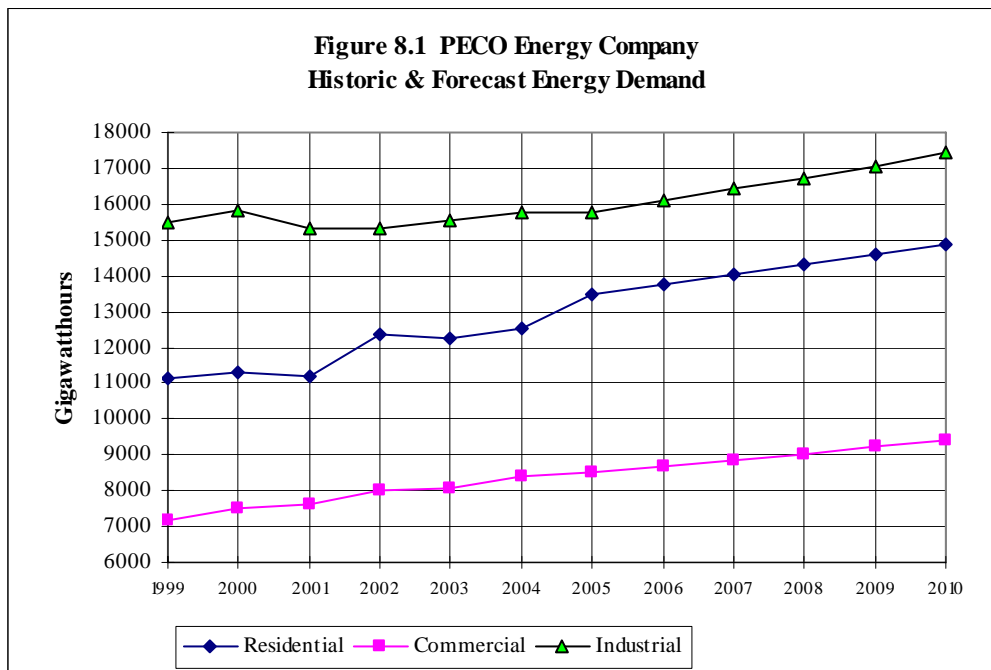
Year	Actual Energy Demand	Projected Industrial Energy Demand												
		1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006		
1996	10016	9900												
1997	10078	10150	10070											
1998	10220	10405	10110	10070										
1999	10179	10600	10270	10110	10190									
2000	10280	10795	10440	10270	10350	10543								
2001	10319	10990	10610	10440	10520	10836	10963							
2002	9853	11190	10790	10610	10690	11077	11255	10780						
2003	9599	11400	10960	10790	10860	11295	11521	11135	10355					
2004	9611	11615	11140	10960		11498	11777	11425	10503	9938				
2005	9720	11825	11320	11140			12010	11702	10641	10035	9750			
2006			11510	11320				11970	10795	10155	9926	9968		
2007				11510					10924	10253	10136	10048		
2008										10346	10349	10084		
2009											10577	10150		
2010												10214		

## PECO Energy Company

PECO Energy Company (PECO) provides service to over 1.5 million electric utility customers in southeastern Pennsylvania. In 2005, PECO had total retail energy sales of 38.9 billion kilowatthours (KWH) -- up 3.3% from 2004. Industrial sales continued to dominate PECO's market with 40.5% of the total sales, followed by residential (34.6%) and commercial (21.9%).

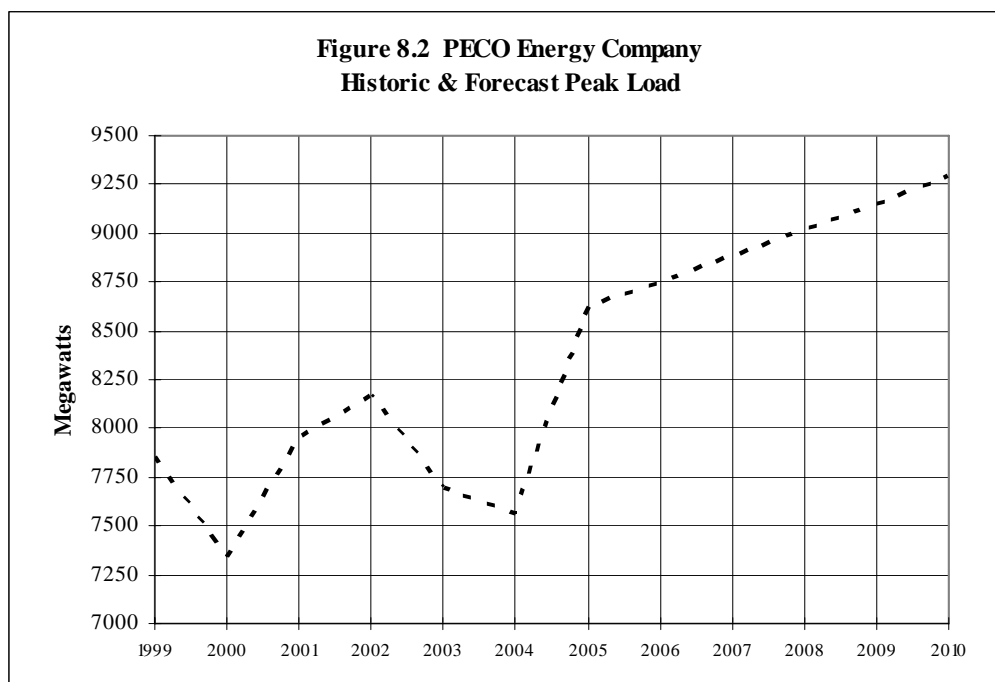
Between 1990 and 2005 PECO's energy demand grew an average of 1.4% per year. Residential energy sales grew at an annual rate of 2.4% and commercial at a 3.7% rate. Industrial sales declined at an average rate of 0.2%.

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



PECO's 2005 summer peak load, occurring on July 27, 2005, was 8,626 megawatts (MW), representing an increase of 14.0% from last year's peak of 7,567 MW. The 2005/06 winter peak demand was 6,550 MW or 4.2% below the previous winter's peak of 6,838 MW.

The actual average annual peak demand growth rate over the past fifteen years was 1.6%. PECO's current forecast shows the peak load increasing from the actual 2005 summer peak load of 8,626 MW to 9,293 MW in the summer of 2010, or an annual growth rate of 1.5%.



Tables 8.1-8.4 provide PECO's forecasts of peak load and residential, commercial and industrial energy demand from 1996 through 2006.

PECO has entered into a 10-year Purchased Power Agreement with Exelon Generation to provide energy and capacity for its provider-of-last-resort load throughout the forecast period. Other resources may be obtained through purchases from the wholesale markets.

In 2005, PECO purchased about 837 million KWH from cogeneration and independent power production facilities, or about 2.2% of total energy consumption. Contract capacity totaled 178 MW.

For calendar year 2005, electric generation suppliers sold a total of about 2.3 billion KWH to retail customers in PECO's service territory or about 5.8% of total consumption, down from 12.2% in 2004. On the summer peak day, electric generation suppliers represented a load of 459 MW, or 5.3%.

PECO has developed commercial and industrial rate incentive programs to encourage customers to manage their energy demands and usage consistent with system capabilities. During 2005, the peak load reduction resulting from this rate option was 180 MW, with energy savings of 1.5 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													
		1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006			
1996	6509	6811													
1997	7390	6868	6868												
1998	7108	6973	6973	6973											
1999	7850	7063	7063	7063	7063										
2000	7333	7135	7135	7135	7135	7339									
2001	7948	7233	7233	7233	7233	7398	7392								
2002	8164	7308	7308	7308	7308	7457	7451	8012							
2003	7696	7387	7387	7387	7387	7517	7510	8076	8229						
2004	7567	7466	7466	7466		7577	7570	8140	8295	8129					
2005	8626	7547	7547	7547			7631	8205	8362	8320	8320				
2006			7629	7629				8271	8428	8445	8445	8755			
2007				7711					8496	8571	8571	8887			
2008										8700	8700	9020			
2009											8831	9155			
2010												9293			

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

Year	Actual Energy Demand	Projected Residential Energy Demand													
		1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006			
1996	10657	10576													
1997	10515	10653	10653												
1998	10376	10732	10732	10515											
1999	11132	10812	10812	10516	10516										
2000	11304	10894	10894	10600	10600	10600									
2001	11178	10976	10976	10685	10685	10685	11278								
2002	12335	11059	11059	10770	10770	10770	11385	11634							
2003	12259	11142	11142	10856	10856	10856	11488	11733	12020						
2004	12507	11225	11225	10943		10943	11592	11855	11905	12250					
2005	13469	11310	11310	11031			11697	11957	11981	12385	12385				
2006			11394	11119					12059	12054	12592	12592	13738		
2007				11208						12128	12839	12839	14013		
2008											13179	13179	14293		
2009												13443	14579		
2010													14870		

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

Year	Actual Energy Demand	Projected Commercial* Energy Demand												
		1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006		
1996	6410	6523												
1997	6689	6667	6667											
1998	7012	7044	7044	6643										
1999	7154	7346	7346	6597	6597									
2000	7481	7650	7650	6649	6649	6649								
2001	7604	7955	7955	6703	6703	6702	7315							
2002	8019	8262	8262	6756	6756	6756	7446	7732						
2003	8077	8572	8572	6810	6810	6810	7578	7963	8135					
2004	8414	8882	8882	6865		6864	7711	8099	8233	8140				
2005	8520	9195	9195	6920			7844	8265	8434	8349	8349			
2006			9510	6975				8436	8637	8550	8550	8691		
2007				7031					8839	8755	8755	8864		
2008										8965	8965	9042		
2009											9144	9223		
2010												9407		

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

Year	Actual Energy Demand	Projected Industrial* Energy Demand												
		1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006		
1996	14976	15249												
1997	14992	15299	15299											
1998	15929	15259	15259	15456										
1999	15477	15271	15271	15919	15919									
2000	15828	15248	15248	16047	16047	16047								
2001	15312	15353	15353	16175	16175	16175	15405							
2002	15323	15333	15333	16304	16304	16305	15406	15324						
2003	15518	15314	15314	16435	16435	16435	15408	15417	15130					
2004	15741	15294	15294	16566		16567	15409	15429	14959	15477				
2005	15774	15278	15278	16699			15409	15442	14980	15448	15449			
2006			15262	16832				15458	15001	15448	15448	16089		
2007				16967					15022	15448	15448	16411		
2008										15448	15448	16739		
2009											15757	17074		
2010												17415		

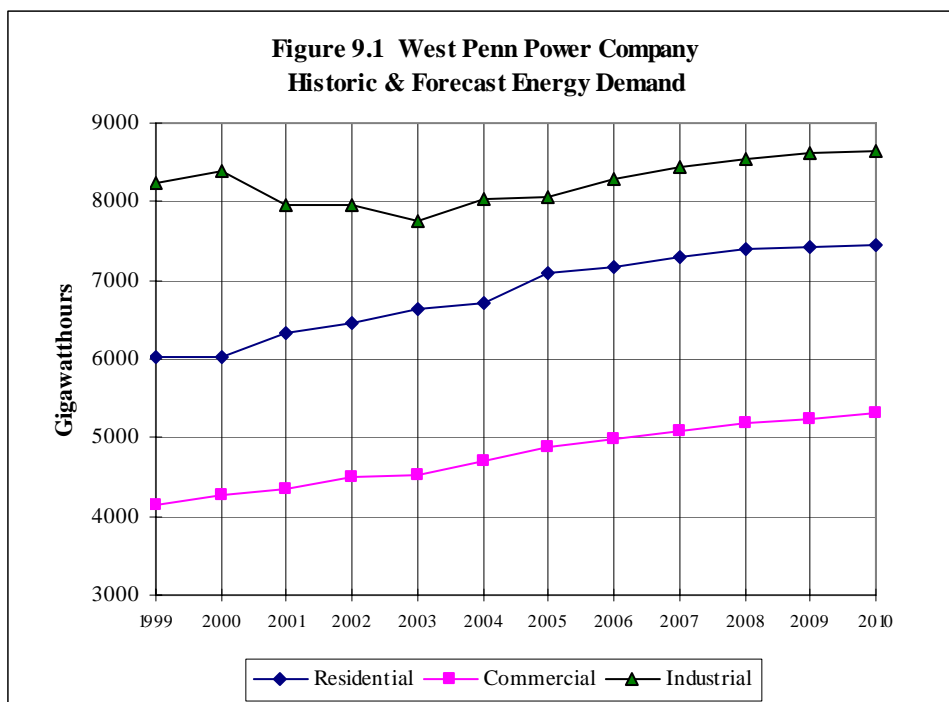
\* Large Commercial & Industrial

## West Penn Power Company

West Penn Power Company (West Penn) provides service to nearly 706,000 electric utility customers in western, north and south central Pennsylvania. In 2005, West Penn had total retail energy sales of about 20.8 billion kilowatthours (KWH) – up 3.0% from 2004. Industrial sales continued to dominate West Penn's market with 38.7% of the total sales, followed by residential (34.1%) and commercial (23.5%).

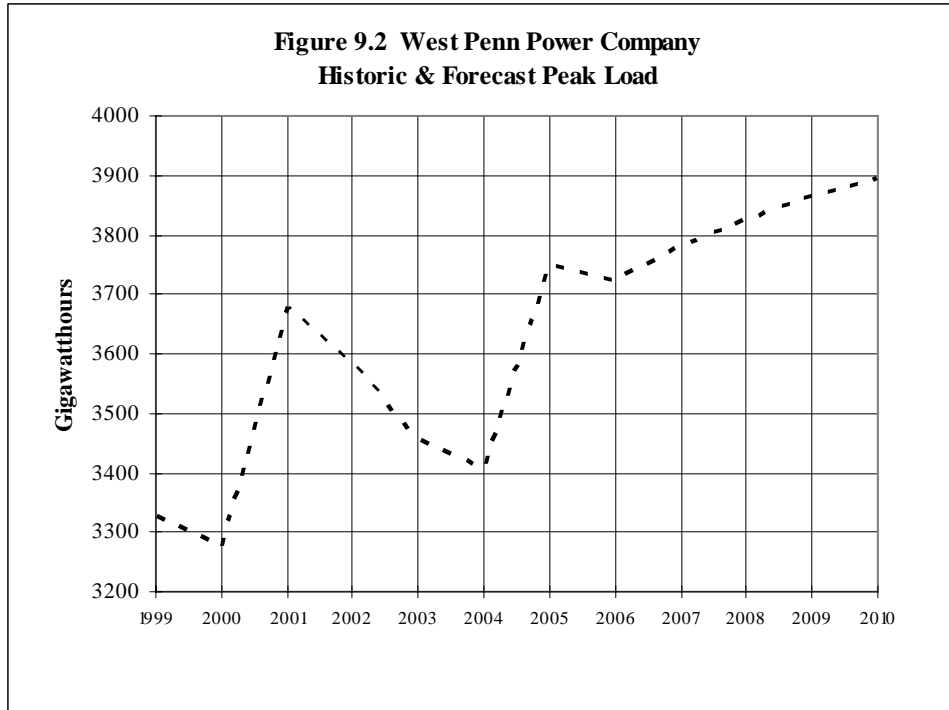
Between 1990 and 2005, West Penn's energy demand grew an average of 1.9% per year. Sales for all sectors have maintained relatively steady growth during the period. Residential sales grew at an annual rate of 2.0%, commercial sales at 2.9% and industrial sales at 1.2% over the past 15 years.

The current five-year projection of growth in energy demand is 1.3%. This includes a residential growth rate of 1.0%, a commercial rate of 1.7% and an industrial rate of 1.4%.



West Penn's 2005 summer peak load, occurring on July 26, 2005, was 3,752 megawatts (MW), representing an increase of 10.1% from last year's summer peak of 3,407 MW. The 2005/06 winter peak load was 3,520 MW or 0.5% lower than the previous year's winter peak of 3,539 MW.

The actual average annual peak load growth rate over the past fifteen years was about 2.1%. West Penn's load forecast scenario shows the peak load increasing from 3,752 MW in the summer of 2005 to 3,895 MW in 2010, or an average annual growth rate of 0.8%.



Tables 9.1-9.4 provide West Penn's forecasts of peak load and residential, commercial and industrial energy demand from 1996 through 2006.

Effective January 2000, all of West Penn's generation assets were transferred to its affiliate, Allegheny Energy Supply Company, LLC (AESC). West Penn subsequently entered into a Power Sales Agreement with AESC for providing default service load requirements. The power provided by AESC comes from owned generation and market purchases. As a part of PJM West, West Penn 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 Provider of Last Resort service, for those customers who do not choose an alternate supplier.

In 2005, West Penn purchased over 1.0 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. A total of 39 West Penn customers signed up with a potential load reduction of 231.5 MW. In 2005, the program was not implemented due to mild weather and the lack of price volatility. In 2006, there are 29 customers and a potential load reduction of 77 MW. West Penn also has a low-income weatherization program (LIURP), which includes the installation of a variety of weatherization measures.

On April 21, 2005, the Commission approved an Amended Joint Petition for Settlement and for Modification of the 1998 Restructuring Settlement<sup>11</sup> in which West Penn agrees to use a Request For Proposal process to obtain its energy supply for years 2009 and 2010. This process brings competitive market forces to bear on the cost of West Penn's energy supply in these years. The process will be conducted to procure, from the wholesale market, supply necessary to serve those retail customers who do not take service from competitive retail suppliers.

On July 22, 2005, Allegheny Power announced that it has awarded contracts for its 2009 and 2010 generation supply needs in Pennsylvania. Under these contracts, the successful bidder, Allegheny Energy Supply Company, LLC, is expected to realize generation prices of about \$45.50 per MWH in 2009 and \$52.50 per MWH in 2010.

In April 2002, Allegheny Power joined PJM Interconnection, LLC (PJM) through the creation of PJM West. As a PJM member, Allegheny Power is responsible for following the reliability standards of the PJM markets as are defined in the PJM Tariffs and PJM West Reliability Assurance Agreement. West Penn is also a member of ReliabilityFirst.

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<sup>11</sup> Docket Nos. R-00039022 and R-00973981.



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

Year	Actual Peak Demand	Projections of Peak Load Requirements																				
		1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006										
1996	3215	3235																				
1997	3251	3315	3315																			
1998	3192	3371	3371	3379																		
1999	3328	3417	3417	3442	3279																	
2000	3277	3462	3462	3496	3360	3284																
2001	3677	3506	3506	3545	3425	3304	3141															
2002	3582	3547	3547	3578	3484	3341	3445	3458														
2003	3455	3586	3586	3617	3519	3380	3465	3505	3535													
2004	3407	3630	3630	3668		3415	3501	3542	3572	3621												
2005	3752	3679	3679	3723			3536	3586	3610	3670	3702											
2006			3722	3769				3622	3639	3705	3763	3723										
2007				3812						3674	3738	3812	3782									
2008											3766	3845	3824									
2009												3866	3864									
2010																						3895

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

Year	Actual Energy Demand	Projected Residential Energy Demand																				
		1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006										
1996	5913	5844																				
1997	5757	5923	5923																			
1998	5823	6020	6020	6127																		
1999	6020	6118	6118	6250	5873																	
2000	6022	6223	6223	6381	6013	6061																
2001	6325	6282	6282	6446	6077	6172	6192															
2002	6459	6371	6371	6518	6165	6256	6260	6374														
2003	6641	6445	6445	6604	6165	6339	6329	6471	6486													
2004	6724	6546	6546	6699	6231	6445	6436	6596	6599	6818												
2005	7088	6624	6624	6763			6521	6680	6671	6890	6923											
2006			6722	6864				6775	6744	6965	7047	7164										
2007				6976						6821	7041	7136	7289									
2008											7132	7194	7387									
2009												7189	7417									
2010																						7447

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

Year	Actual Energy Demand	Projected Commercial Energy Demand													
		1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006			
1996	3836	3856													
1997	3833	3950	3950												
1998	3993	4055	4055	4080											
1999	4137	4161	4161	4163	4039										
2000	4265	4271	4271	4270	4215	4182									
2001	4360	4347	4347	4339	4313	4225	4326								
2002	4497	4430	4430	4393	4401	4275	4395	4458							
2003	4529	4501	4501	4457	4443	4329	4449	4543	4577						
2004	4691	4588	4588	4557		4397	4517	4624	4653	4701					
2005	4892	4664	4664	4630			4571	4684	4695	4780	4791				
2006			4756	4707				4749	4739	4832	4907	4996			
2007				4779						4776	4878	5006	5092		
2008											4936	5098	5179		
2009												5135	5249		
2010															5318

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

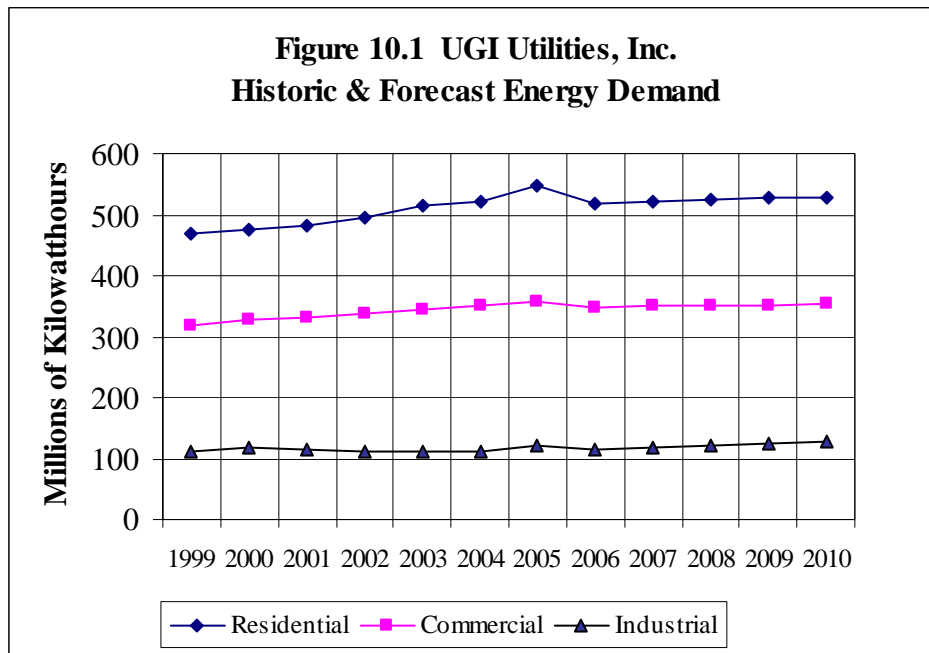
Year	Actual Energy Demand	Projected Industrial Energy Demand													
		1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006			
1996	7974	8204													
1997	8046	8427	8427												
1998	8226	8755	8755	8608											
1999	8237	8855	8855	8808	8575										
2000	8383	8976	8976	8997	8830	7942									
2001	7955	9052	9052	9070	8975	8120	8481								
2002	7957	9156	9156	9136	9167	8230	8597	8006							
2003	7747	9241	9241	9264	9161	8353	8663	8116	7885						
2004	8039	9367	9367	9448		8477	8729	8188	7973	7814					
2005	8051	9450	9450	9561			8799	8230	8023	7913	8027				
2006			9566	9660				8290	8087	7998	8137	8283			
2007				9768						8187	8069	8220	8429		
2008											8140	8311	8543		
2009												8313	8615		
2010															8634

## UGI Utilities, Inc.

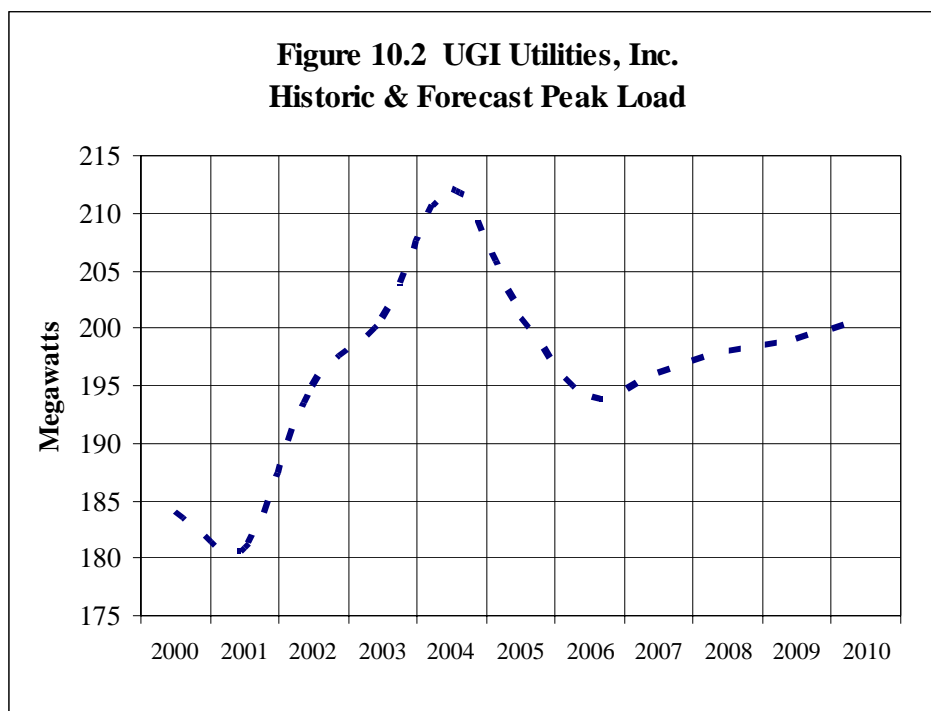
The Electric Division of UGI Utilities, Inc. (UGI) provides electric service to over 62,000 customers in northwestern Luzerne and southern Wyoming counties, Pennsylvania. In 2005, UGI had energy sales totaling 1.0 billion kilowatthours (KWH) -- up 4.2% from 2004. Residential sales continued to dominate UGI's market with 53.2% of the total sales, followed by commercial (34.6%) and industrial (11.6%).

Between 1990 and 2005, UGI experienced an average growth in total sales of 1.8%, which includes a residential growth rate of 1.7%, a commercial rate of 2.0% and an industrial rate of 2.0%.

Over the five-year planning horizon, UGI expects energy demand to decrease at an average rate of 0.3%. This includes an average annual decline in residential sales of 0.7%, a decline in commercial sales 0.2% per year and an industrial growth rate of 1.4%. The five-year forecast indicates no growth in peak load. Peak load is projected to decrease slightly from 201 MW in 2005/2006 to 194 MW in the winter of 2006/2007 and return to 201 MW by 20010/11.



Peak demand on the UGI system occurred on December 14, 2005, and totaled 201 megawatts (MW), or 5.2% below the 2004/2005 winter peak load of 201 MW and 2.6% above the 2005 summer peak load of 196 MW, occurring on July 26, 2005.



In 2005, one electric generation supplier provided 359,000 KWH to UGI's retail customers who chose an alternate supplier. This represents about 0.03% of total sales, down from 0.04% in 2004. UGI does not own electric generation supply and will meet its customers' energy requirements by making wholesale purchases in various markets.

In May, 1999, the number of shopping customers reached a peak of 2,604. Since then, all of those customers have returned to UGI retail service.

Under a Stipulation in Settlement, adopted May 27, 2004, UGI will provide provider-of-last-resort service to all customers under rates that cannot increase by more than 7.5% through 2006. Under a subsequent Joint Petition for Settlement, adopted June 22, 2006, default service rates for the period 2007-2009 will be adjusted such that the class average generation rate is equal to the system average generation rate, plus or minus one percent, and cannot exceed specific levels set forth in the settlement agreement.<sup>12</sup>

<sup>12</sup> Docket No. P-00062212.

During the summer of 2005, 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. One commercial customer participated in the program, resulting in a reduction in system load of 21.4 MWH. 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***

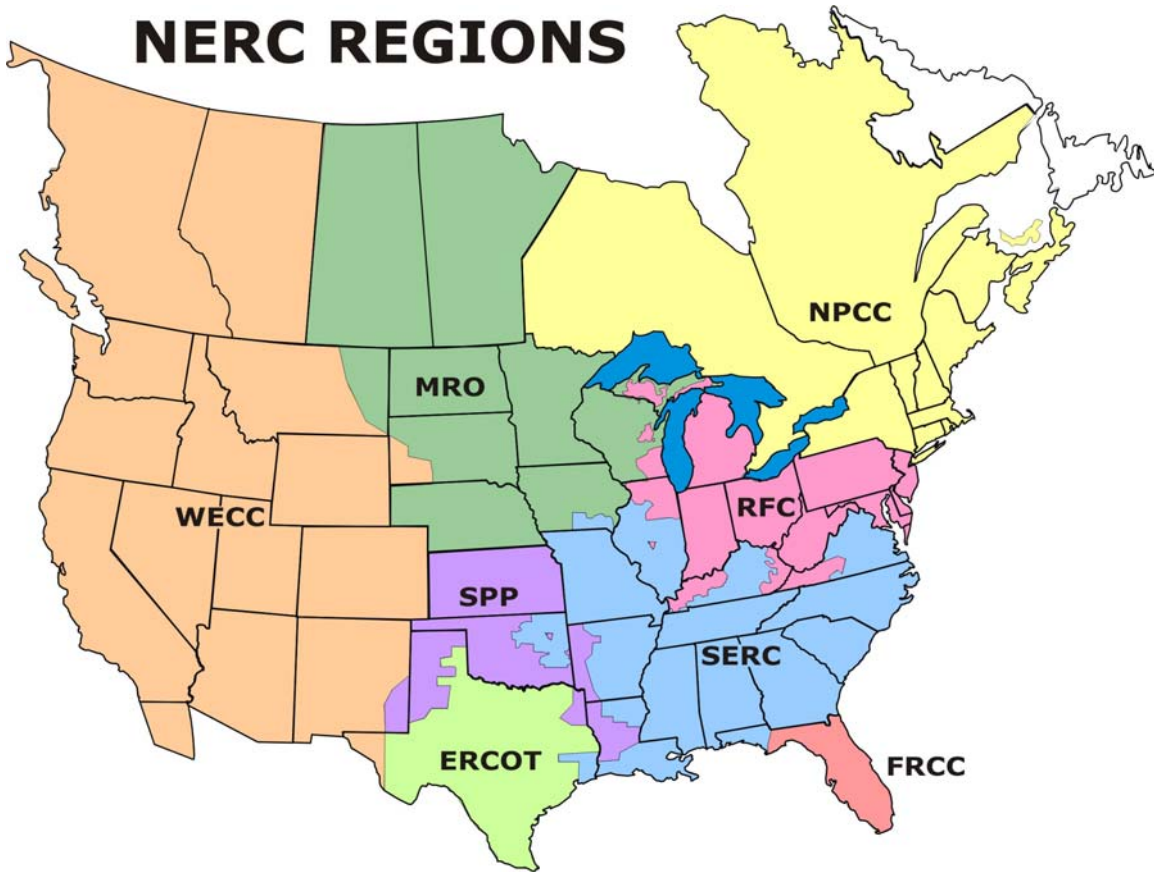
The passage of the Pennsylvania Electricity Generation Customer Choice and Competition Act substantially changed the Commission's jurisdiction as well as our ability to compile data from the generation sector. At this time, all information on generation and transmission capacity is regional. Therefore, this section summarizes the regional reliability assessments of MAAC, ECAR and PJM for generation and transmission capability. The regional reports state that there is sufficient generation and transmission capacity in Pennsylvania to meet the needs of electric consumers for the foreseeable future.

### ***North American Electric Reliability Council***

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 is being 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 will be to develop, promote and enforce reliability standards.

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 ReliabilityFirst Corporation (RFC), which is the successor organization to three former NERC Regional Reliability Councils: the Mid-Atlantic Area Council (MAAC), the East Central Area Reliability Coordination Agreement (ECAR) and the Mid-American Interconnected Network (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 percent of net internal demand. *Capacity margin* is the difference between available resources and net internal demand, expressed as a percent of available resources.

### Compliance Standards

On March 30, 2001, NERC changed its governance to a new, ten-member independent Board of Trustees, replacing a 47-member Board, which comprised both stakeholders and independent members. Additionally, NERC has initiated an Agreement for Regional Compliance and Enforcement Programs under which the Regional Councils will monitor and enforce certain NERC reliability standards, including the imposition of financial penalties.

On February 8, 2005, the NERC Board of Trustees adopted a comprehensive set of reliability standards for the bulk electric system. The new reliability standards incorporate the existing NERC operating policies, planning standards and compliance requirements into an integrated and comprehensive set of measurable reliability standards. The new reliability standards became effective on April 1, 2005.<sup>13</sup>

NERC believes that compliance with reliability standards must be mandatory. The number and complexity of transactions are increasing, due to an increase in the expanse of competitive markets. Compliance with NERC standards is necessary to maintain system reliability to protect the public welfare and ensure a robust competitive market.

On August 8, 2005, President George W. Bush signed into law the “Energy Policy Act of 2005.” Section 1211 of the Act amends the Federal Power Act to grant the FERC regulatory jurisdiction over an Electric Reliability Organization (ERO). This ERO would develop and enforce reliability standards that provide for an adequate level of reliability of the bulk power system. Reliability standards would be approved by the FERC. The ERO would have the authority to impose a penalty on a user, owner or operator of the bulk power system for a violation of an approved reliability standard.

On February 3, 2006, the FERC issued a Final Rule concerning certification of the ERO and procedures for the establishment, approval and enforcement of

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<sup>13</sup> See: [http://www.nerc.com/~filez/standards/Reliability\\_Standards.html](http://www.nerc.com/~filez/standards/Reliability_Standards.html).



electric reliability standards.<sup>14</sup> On April 4, 2006, NERC filed its application with the FERC to become the ERO. Concurrently with its FERC application, NERC made filings seeking comparable recognition from government authorities in Canada, including the provinces of British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, Quebec, New Brunswick, and Nova Scotia, and the National Energy Board. On July 20, 2006, the FERC certified the North American Electric Reliability Corporation (NERC Corp.)<sup>15</sup> as the ERO for the United States.<sup>16</sup> As the ERO, NERC Corp. will have legal authority to develop and enforce reliability standards for the bulk power system, rather than relying on voluntary compliance. NERC Corp. proposes to delegate its enforcement function to Regional Entities throughout North America. NERC Corp. expects to begin operations as the ERO on January 1, 2007.

### Reliability Assessment<sup>17</sup>

Resource adequacy in the near-term (2005--2009) will be satisfactory throughout North America, provided new generating facilities are constructed as anticipated. Through the summer of 2009, electricity demand is expected to grow by about 69,536 MW. Projected resource additions during this period total only about 48,719 MW. The average annual peak demand growth rate over the assessment period is projected to be 2.0% for the United States and 0.9% for Canada, compared to 2.4% for the U.S. (summer) and 1.0% for Canada (winter) for the past 10 years.

Projected 2006 U.S. summer capacity margins are about 14.1% lower this year than last year's projection for 2006. The projected margin continues to decline to about 9.1% as projected demand continues to grow while the number of proposed and/or announced new generating units decline.

More than 7,122 miles of new transmission (230 kV and higher) are proposed for construction through 2009, with a total of 12,484 miles added over the 2005 – 2014 timeframe. Most of these additions are intended to address local transmission concerns or to connect proposed new generators to the transmission grid. Transmission systems are expected to perform reliably in the near term; however, portions of the transmission systems are reaching their limits as customer demand increases and the systems are subjected to new loading patterns resulting from increased electricity transfers.

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<sup>14</sup> Docket No. RM05-30-000; Order No. 672.

<sup>15</sup> NERC Corp. is NERC's wholly-owned subsidiary. NERC and NERC Corp. will be merged, with NERC Corp. as the surviving corporation.

<sup>16</sup> FERC, Docket No. RR06-1-000, 116 FERC ¶ 61,602.

<sup>17</sup> NERC, *2005 Long-Term Reliability Assessment*, September 2005.

## **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. As of April 26, 2006, there were 43 Regular Members and 19 Associate Members.

RFC was established on January 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.

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**

[These reliability assessments were provided by MAAC and ECAR prior to the formulation of RFC.]<sup>18</sup>

Generation resources within the MAAC Region are expected to be adequate to maintain regional reliability through 2008. PJM is currently evaluating generator interconnection requests for more than 18,000 MW of new generating capacity expected by 2010. Although not all of this capacity will be built, MAAC believes that sufficient generating capacity will be added to meet the MAAC adequacy objective.

The 2004 MAAC aggregate coincident system summer peak load of 52,049 MW was 8.5% lower than the forecast of 56,886 MW. The 2005 summer total internal demand forecast was 57,630 MW. The 2006 summer net internal demand

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<sup>18</sup> Id.

is projected to be 57,981 MW with capacity resources totaling 69,855 MW, for a reserve margin of 20.5%. Peak demand is expected to grow at a rate of 1.7% per year for the next 10 years.

The MAAC region's mix of generating capacity includes 23% coal, 20% nuclear, 10% oil, 10% natural gas and 5% hydroelectric (including pumped storage). Dual fueled units represent 30% of the total.

Over the next five years, MAAC expects there will be adequate transmission capability to meet MAAC's criteria requirements. Transmission upgrades in the northern New Jersey area for the years 2008-2010 are under evaluation to accommodate generator retirements and maintain transmission system reliability within the applicable criteria. About 134 transmission circuit miles (230 kV and greater) are proposed for construction through 2009.

The bulk electric systems within the ECAR region are expected to reliably serve the forecasted demand obligations over a wide range of anticipated system conditions, as long as established operating limits and procedures are followed and proposed projects are completed in a timely manner. ECAR's criteria for resource adequacy will be satisfied through at least 2013, assuming the availability of up to 5,550 MW of capacity resources outside the ECAR region.

The 2004 ECAR aggregate (non-coincident) summer peak load was 95,300 MW. The 2005 summer net internal demand forecast was 101,171 MW. For the summer of 2006, the net internal demand is projected to be 104,230 MW with capacity resources totaling 128,326 MW, for a reserve margin of 23.1%.

The ECAR region's mix of generating capacity includes 63% coal, 26% natural gas, 6% nuclear, 3% oil and 3% hydroelectric (including pumped storage). Natural gas may be used as much as 30% of the capacity by 2013. ECAR is monitoring the natural gas supply for indications of possible supply constraints.

Transmission networks in ECAR are expected to meet adequacy and security criteria over a wide range of anticipated system conditions. Although, local transmission overloads are possible during some generation and transmission contingencies, certain operating procedures can be used to mitigate such overloads. About 221 miles of transmission lines (230 kV and greater) are planned to be added to the system through 2009.

RFC's total internal demand forecast for the summer of 2006 is 191,600 MW. This is 0.7% higher than the actual aggregate peak demand experienced during the summer of 2005. Demand-side management programs and interruptible demand contracts that could be curtailed are expected to total 4,100 MW. Net capacity resources are projected to be 222,395 MW, resulting in a reserve margin of 18.6%.

See Appendix A for additional data on RFC's capacity and demand projections.

## ***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 56,070 miles of transmission lines for congestion concerns or physical capability problems. There are over 390 members of PJM.

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 3.

### **Compliance Standards**

The PJM reliability standards are the same as the standards for the MAAC region and the newly formed 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% 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,

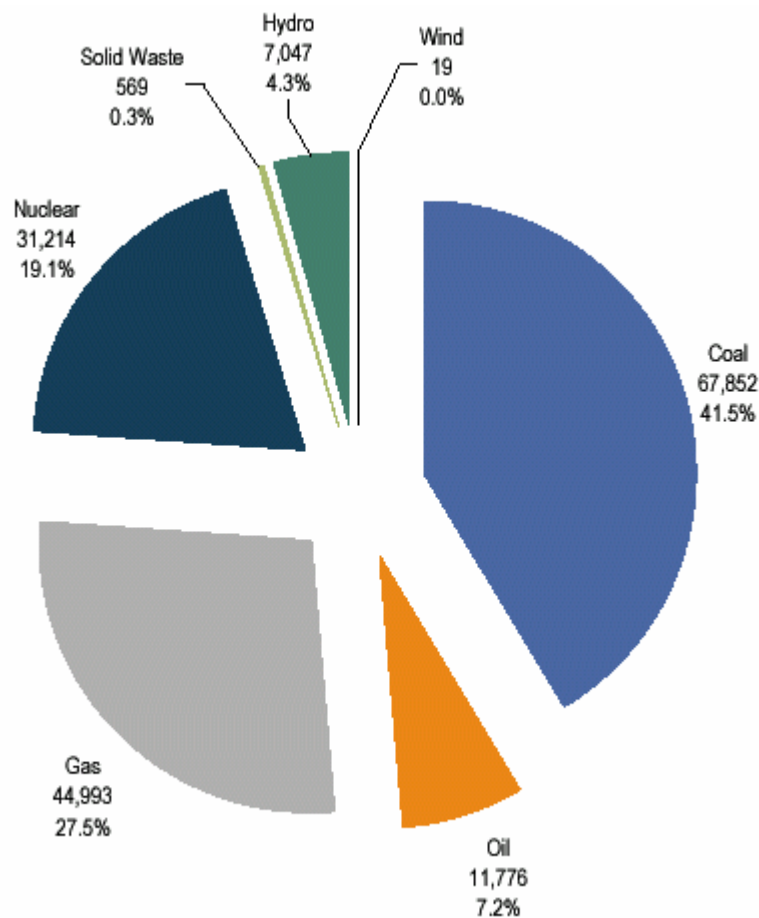
a fuel shortage requiring departure from normal operating procedures in order to minimize the use of such scarce fuel or

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

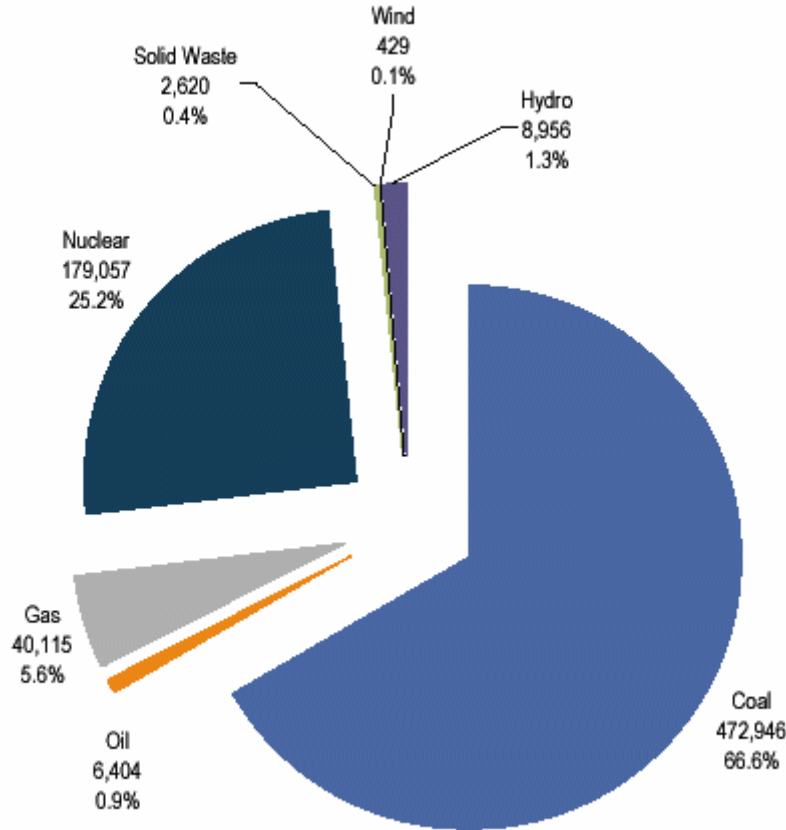
The PJM RTO weather normalized system peak load in 2005 was 132,270 MW, reflecting the Mid-Atlantic Region and the AP, ComEd, AEP, DAY, DLCO and Dominion Control Zones.<sup>19</sup> PJM total installed capacity is about 164,634 MW. PJM capacity by fuel source is shown below.



Source: PJM.

<sup>19</sup> 2005 State of the Market Report, PJM, March 8, 2006.

In 2005, coal and nuclear units generated 91.8% of the total electricity. See chart below.



Source: PJM.

Summer peak load growth for PJM RTO is projected to average 1.6% per year over the next 10 years, increasing to 156,893 MW in 2016.

At the end of 2005, about 24,300 MW of capacity were in PJM generation request queues for construction through 2010, increasing supply by nearly 15%. It is not likely that all of the generation in the queues will be built.

## *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, anticipated 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 5,923 MW. These facilities are either under study, under construction, partially in-service or in-service. This additional capacity may be used to serve Pennsylvania customers or out-of-state customers. Appendix C provides the status of new power plant queues for Pennsylvania.

Appendix D lists the existing power plants located in Pennsylvania, along with the operating companies' names and fuel types. The generating capacity of these plants totals 46,495 MW. As stated earlier, the output of some of these facilities may serve loads outside of Pennsylvania.

## SECTION 4 – CONCLUSIONS

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### *Conclusions*

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

The former Mid-Atlantic Area Council (MAAC) and the East Central Area Reliability Coordination Agreement (ECAR) regions covering Pennsylvania, and now ReliabilityFirst Corporation (RFC), continue to have sufficient generating resources to maintain a high level of reliability during the summer of 2006 and beyond. Load growth in the mid-Atlantic is expected to be moderate. Thousands of megawatts of new capacity are proposed to be in service between 2006 and 2010, and it is anticipated that total generating capacity will exceed demand by a reliable margin. New capacity will help to ensure the reliability of electric service in the state and will maintain or increase the robustness of the competitive energy markets.

Thus, the regional reliability councils report that there is sufficient generation, transmission and distribution capacity in Pennsylvania to meet the needs of electric consumers for the foreseeable future.

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. 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 2005 totaled approximately 146 billion kilowatthours (KWH), a 3.5% increase from that of 2004 and represents 4.0% of the United States' total. Residential sales accounted for 34.9% of the total sales, followed by industrial (32.4%) and commercial (30.4%).

Between 1990 and 2005, the state's energy demand grew an average annual rate of 1.7%. Residential sales grew at an annual rate of 2.3%, commercial at 3.0% and industrial at 0.3%. Average total sales growth from 2000 to 2005 was also 1.7%. The current aggregate 5-year projection of growth in energy demand is



1.5%. This includes a residential growth rate of 1.3%, a commercial rate of 1.9% and an industrial rate of 1.4%.

Generation and transmission resources within the RFC region are expected to be adequate to maintain regional reliability. RFC's total internal demand forecast for the summer of 2006 is 191,600 MW. This is 0.7% higher than the actual aggregate peak demand experienced during the summer of 2005. Demand-side management programs and interruptible demand contracts that could be curtailed are expected to total 4,100 MW. Net capacity resources are projected to be 222,395 MW, resulting in a reserve margin of 18.6%.

## **APPENDIX A – CAPACITY AND DEMAND PROJECTIONS**

Source for Appendix A: ReliabilityFirst Response to the 2006 NERC Data Request  
(Formerly the EIA-411)

## ReliabilityFirst Energy and Peak Demand Projections

<b>Actual Data:</b>	<b>2005</b>	<b>Jan.</b>	<b>Feb.</b>	<b>March</b>	<b>April</b>	<b>May</b>	<b>June</b>	<b>July</b>	<b>Aug.</b>	<b>Sept.</b>	<b>Oct.</b>	<b>Nov.</b>	<b>Dec.</b>
<b>Peak Hour Demand - MW</b>		154,200	140,100	140,500	119,700	127,500	177,900	187,700	190,200	167,200	140,000	136,300	153,600
<b>Net Energy - GWH</b>		88,588	77,288	82,403	71,542	73,177	89,597	96,979	99,067	83,597	77,267	76,686	89,035

<b>Reporting Year:</b>	<b>2006</b>	<b>Jan.</b>	<b>Feb.</b>	<b>March</b>	<b>April</b>	<b>May</b>	<b>June</b>	<b>July</b>	<b>Aug.</b>	<b>Sept.</b>	<b>Oct.</b>	<b>Nov.</b>	<b>Dec.</b>
<b>Peak Hour Demand - MW</b>		151,600	145,700	138,300	126,600	147,400	180,300	191,600	188,500	164,500	130,500	139,100	151,800
<b>Net Energy - GWH</b>		89,041	78,841	81,031	73,224	76,393	84,865	94,348	93,724	79,111	77,280	77,672	87,213

<b>Next Year:</b>	<b>2007</b>	<b>Jan.</b>	<b>Feb.</b>	<b>March</b>	<b>April</b>	<b>May</b>	<b>June</b>	<b>July</b>	<b>Aug.</b>	<b>Sept.</b>	<b>Oct.</b>	<b>Nov.</b>	<b>Dec.</b>
<b>Peak Hour Demand - MW</b>		154,800	148,700	141,300	129,400	150,100	183,000	193,900	190,800	166,200	132,300	140,500	153,200
<b>Net Energy - GWH</b>		90,327	79,881	81,900	74,216	77,463	85,701	95,543	94,758	79,875	78,117	78,517	88,067

<b>Actual Previous Year and 10 Year Projection:</b>	<b>Actual</b>	<b>Projected</b>									
<b>Peak Hour Demand - MW - Summer</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>
	190,200	191,600	193,900	198,600	201,900	204,800	207,800	210,700	214,500	217,600	220,400

<b>Actual Previous Year and 10 Year Projection:</b>	<b>Actual</b>	<b>Projected</b>									
<b>Peak Hour Demand - MW - Winter</b>	<b>05/06</b>	<b>06/07</b>	<b>07/08</b>	<b>08/09</b>	<b>09/10</b>	<b>10/11</b>	<b>11/12</b>	<b>12/13</b>	<b>13/14</b>	<b>14/15</b>	<b>15/16</b>
	151,600	154,800	157,300	159,900	162,200	164,700	167,300	169,600	171,900	173,900	176,200

<b>Actual Previous Year and 10 Year Projection:</b>	<b>Actual</b>	<b>Projected</b>									
<b>Net Energy - GWH</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>
	1,005,226	992,742	1,004,363	1,023,761	1,039,983	1,055,206	1,070,096	1,084,847	1,101,968	1,118,138	1,131,824

## ReliabilityFirst Capacity and Demand Projections - Summer

Line	Category	Actual	Projected									
		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
01	Internal Demand	190,200	191,600	193,900	198,600	201,900	204,800	207,800	210,700	214,500	217,600	220,400
02	Standby Demand	0	0	0	0	0	0	0	0	0	0	0
03	Total Internal Demand (01+02)	190,200	191,600	193,900	198,600	201,900	204,800	207,800	210,700	214,500	217,600	220,400
04	Direct Control Load Management	0	800	800	900	900	900	900	900	900	900	900
05	Interruptible Demand	0	3,300	3,200	3,200	3,200	3,200	3,100	3,100	3,100	3,100	3,100
06	Net Internal Demand (03-04-05)	190,200	187,500	189,900	194,500	197,800	200,700	203,800	206,700	210,500	213,600	216,400
07	Total Net Operable Capacity	231,575	229,776	228,835	229,389	230,104	231,291	231,066	231,006	230,828	230,828	230,828
07a	Uncommitted Capacity	0	5,300	6,091	7,481	8,196	9,461	9,461	9,461	9,461	9,461	9,461
07b1	Reliability Derating Unit Spec. Subtotal											
07b2	Reliability Derating Group Subtotal	74	2,256	2,799	2,799	2,799	2,799	2,799	2,799	2,799	2,799	2,799
07c	Other Generation	11,501										
07d	Subtotal Committed Capacity (7-7a-7b1-7b2-7c)	220,000	221,220	219,945	219,109	219,109	219,031	218,806	218,746	218,568	218,568	218,568
08	Generator Capacity, <1MW (8a+8b)	0	0	0	0	0	0	0	0	0	0	0
08a	Distributed Generator Capacity < 1 MW	0	0	0	0	0	0	0	0	0	0	0
08b	Other Capacity < 1 MW	0	0	0	0	0	0	0	0	0	0	0
09	Total Net Generator Capacity (7d+8)	220,000	221,220	219,945	219,109	219,109	219,031	218,806	218,746	218,568	218,568	218,568
9b	Distributed Generator Capacity >= 1 MW	0	0	0	0	0	0	0	0	0	0	0
10	Capacity Purchases - Total	0	2,767	1,035	1,035	1,035	1,035	1,035	1,035	1,035	1,035	1,035
10a	Full Responsibility Purchases	0	0	0	0	0	0	0	0	0	0	0
11	Capacity Sales - Total	0	1,592	0	0	0	0	0	0	0	0	0
11a	Full Responsibility Sales	0	0	0	0	0	0	0	0	0	0	0
12	Net Capacity Resources (9+10-11)	220,000	222,395	220,980	220,144	220,144	220,066	219,841	219,781	219,603	219,603	219,603

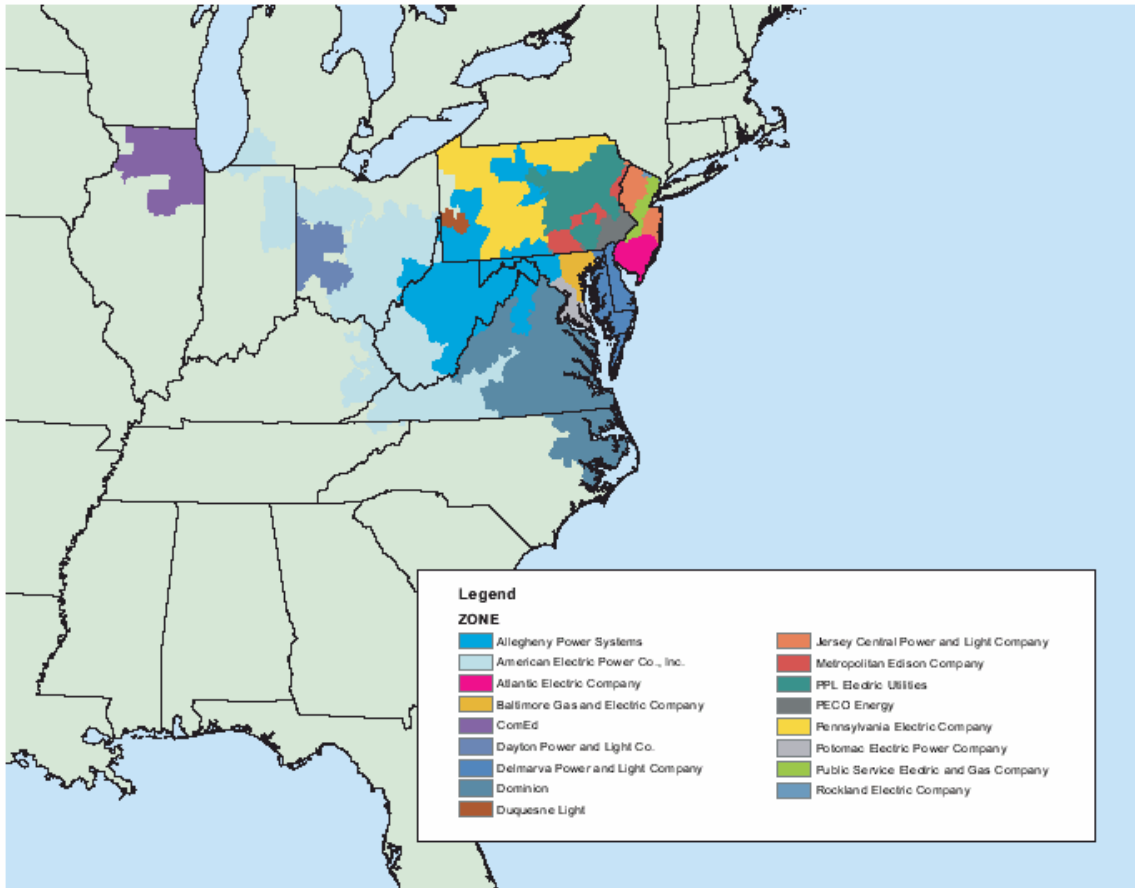
## ReliabilityFirst Capacity and Demand Projections - Winter

Line	Category	Actual	Projected									
		05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16
01	Internal Demand	151,600	154,800	157,300	159,900	162,200	164,700	167,300	169,600	171,900	173,900	176,200
02	Standby Demand	0	0	0	0	0	0	0	0	0	0	0
03	Total Internal Demand (01+02)	151,600	154,800	157,300	159,900	162,200	164,700	167,300	169,600	171,900	173,900	176,200
04	Direct Control Load Management	0	200	200	200	200	200	200	200	200	200	200
05	Interruptible Demand	0	2,000	2,000	2,000	1,900	1,900	1,900	1,900	1,900	1,900	1,900
06	Net Internal Demand (03-04-05)	151,600	152,600	155,100	157,700	160,100	162,600	165,200	167,500	169,800	171,800	174,100
07	Total Net Operable Capacity	241,766	238,622	231,180	231,734	232,371	233,576	233,351	233,173	233,173	233,173	233,173
07a	Uncommitted Capacity	0	5,300	5,590	6,980	7,695	8,960	8,960	8,960	8,960	8,960	8,960
07b1	Reliability Derating Unit Spec. Subtotal											
07b2	Reliability Derating Group Subtotal	74	2,632	2,799	2,799	2,799	2,799	2,799	2,799	2,799	2,799	2,799
07c	Other Generation	12,692										
07d	Subtotal Committed Capacity (7-7a-7b1-7b2-7c)	229,000	223,690	222,791	221,955	221,877	221,817	221,592	221,414	221,414	221,414	221,414
08	Generator Capacity, <1MW (8a+8b)	0	0	0	0	0	0	0	0	0	0	0
08a	Distributed Generator Capacity < 1 MW	0	0	0	0	0	0	0	0	0	0	0
08b	Other Capacity < 1 MW	0	0	0	0	0	0	0	0	0	0	0
09	Total Net Generator Capacity (7d+8)	229,000	223,690	222,791	221,955	221,877	221,817	221,592	221,414	221,414	221,414	221,414
9b	Distributed Generator Capacity >= 1 MW	0	0	0	0	0	0	0	0	0	0	0
10	Capacity Purchases - Total	0	1,756	1,035	1,035	1,035	1,035	1,035	1,035	1,035	1,035	1,035
10a	Full Responsibility Purchases	0	0	0	0	0	0	0	0	0	0	0
11	Capacity Sales - Total	0	745	0	0	0	0	0	0	0	0	0
11a	Full Responsibility Sales	0	0	0	0	0	0	0	0	0	0	0
12	Net Capacity Resources (9+10-11)	229,000	224,701	223,826	222,990	222,912	222,852	222,627	222,449	222,449	222,449	222,449

## **APPENDIX B – REGIONAL MAPS**

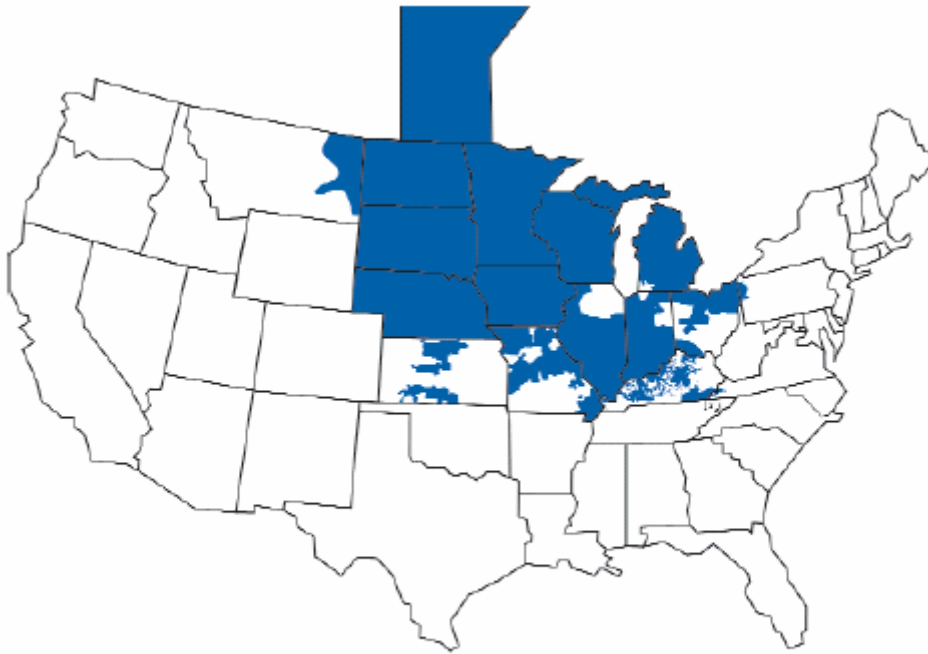
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## PJM Service Territory



Source: PJM

*Midwest ISO*



**Midwest ISO Reliability Area**

Source: Midwest ISO

## **APPENDIX C – STATUS OF NEW POWER PLANTS**



## *Status of Pennsylvania's New Power Plants*

<b>Queue</b>	<b>Project</b>	<b>MW</b>	<b>In-Service</b>	<b>Status</b>	<b>Fuel</b>
B34	Seward	304	2006	Partially In-Service	Coal
C02	South Lebanon	47	2007	Under Study	Natural Gas
G06	Martins Creek #4	30	2005	Under Study	Coal
G46	Peach Bottom	70	2007	Partially In-Service	Nuclear
G51_W60	Hatfield Ferry	525	2008	Under Construction	Coal
I13	Hooversville	30	2006	Under Study	Wind
J09	Harrisburg Authority	22	2006	Under Construction	Methane
K02	East Towanda-Moshannon	70	2006	Under Study	Wind
K13	Hooversville	7	2006	Under Study	Wind
K20	Mill Run	3	2005	Under Study	Wind
K21	East Carbondale	13	2004	In-Service	Wind
L03	Morgantown	0.8	2006	Under Construction	Methane
L13	Rockwood	40	2007	Under Construction	Wind
L17	Rolling Hills	6	2005	In-Service	Methane
L18	Bear Creek	26	2006	In-Service	Wind
L19	Karthus	290	2008	Under Construction	Coal
M11	Susquehanna #1	111	2008	Under Construction	Nuclear
M12	Susquehanna #2	107	2008	Under Construction	Nuclear
M20	Chestnut Valley	5	2006	Under Study	Methane
M22	Cambria Slope	125	2007	Under Study	Coal
M26	Champion	272	2008	Under Study	Coal
N06	Hamilton	0.047	2005	In-Service	Methane
N14	Frackville-Hauto	24	2006	Under Study	Wind
N26	Daleville	2	2005	Under Construction	Methane
N30	Grand Point	5	2006	Under Study	Methane
N31	Freemansburg	5	2007	Under Construction	Methane
N32	Gans	60	2006	Under Study	Wind
N36	Gold-Sabinsville	50	2006	Under Study	Wind
N39	Johnstown-Altoona	80	2006	Under Study	Wind
O01	Letort	3	2006	In-Service	Methane
O02	Glendon	3	2006	Under Study	Methane
O17	Somerset-Allegheny	65	2006	Under Study	Wind
O18	Salix-Claysburg	85	2007	Under Study	Wind
O19	Somerset	33	2006	Under Study	Wind
O26	Pine Grove	8	2007	Under Study	Diesel
O28	Jenkins-Harwood #2	85	2006	Under Study	Wind
O36	Honey Brook	1.6	2006	Under Study	Methane
O38	Johnstown-Altoona	50	2006	Under Study	Wind
O39	Sunbury-Dauphin	56	2007	Under Study	Wind
O40	Pine Grove-Frailey	44	2007	Under Study	Wind
O46	Frackville-Hauto #3	2	2007	Under Study	Wind
O48	Hays Mill	36	2006	Under Study	Wind
O52	Gold-Potter Co	100	2007	Under Study	Wind
O53	Beaver Valley #1	81	2006	Under Study	Nuclear
O54	Beaver Valley #2	77	2006	Under Study	Nuclear
O55	Peckville	9	2007	Under Study	Methane

## *Status of Pennsylvania's New Power Plants (contd)*

<b>Queue</b>	<b>Project</b>	<b>MW</b>	<b>In-Service</b>	<b>Status</b>	<b>Fuel</b>
O56	Osterburg East	125	2007	Under Study	Wind
O59	Gold	99	2007	Under Study	Wind
O60	Berlin	5.4	2006	Under Study	Wind
O70	Susquehanna-Harwood	124	2007	Under Study	Wind
O71	Hooversville	60	2007	Under Study	Wind
O72	Hooversville-Central City	60	2007	Under Study	Wind
P01	Westover-Madera	100	2007	Under Study	Wind
P03	Frackville-Hauto #3	1.3	2007	Under Study	Wind
P04	Peach Bottom	550	2008	Under Study	Natural Gas
P05	Graceton	550	2008	Under Study	Natural Gas
P22	Johnstown-Altoona	50	2007	Under Study	Wind
P28	Mehoopany	150	2007	Under Study	Wind
P34	Washington Landfill	6	2006	Under Study	Biomass
P41	South Reading-Birdsboro	9	2006	Under Study	Methane
P45A	E. Carbondale-Lackawanna	120	2009	Under Study	Wind
P47	Mansfield-S. Troy	100	2007	Under Study	Wind
P48	Bedford North-Allegheny	120	2007	Under Study	Wind
P60	New Baltimore	30	2007	Under Study	Wind
Q02	Thompson	80	2008	Under Study	Wind
Q04	Snake Spring	140	2008	Under Study	Wind
Q05	Emmaville Mountain	18	2008	Under Study	Wind
Q06	Breezewood	18	2008	Under Study	Wind
Q07	DuVall South	18	2008	Under Study	Wind
Q20	Holtwood	140	2010	Under Study	Hydro
Q24	Gold-Sabinsville	101	2008	Under Study	Wind
Q25	Donegal-Iron City	80	2008	Under Study	Wind

Natural Gas -- 1,147 MW (19.4%)	Methane -- 71 MW (1.2%)
Coal -- 1,546 MW (26.1%)	Diesel -- 8 MW (0.1%)
Nuclear -- 446 MW (7.5%)	Biomass -- 6 MW (0.1%)
Wind -- 2,559 MW (43.2%)	Hydro -- 140 MW (2.4%)

Source: PJM

## **APPENDIX D – EXISTING GENERATING FACILITIES**

## 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	Ironwood	Gas		CC	705
AES Corporation	PA	Beaver Valley	Coal			120
Allegheny Electric Cooperative*	PA	Raystown Hydroelectric Project (Matsen)	Water			21.7
Allegheny Energy Supply*	PA	Armstrong Generating Station	Coal			356
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			1710
Allegheny Energy Supply*	PA	Lake Lynn Hydroelectric Project	Water			52
Allegheny Energy Supply*	PA	Mitchell Generating Station	Coal	Oil		370
Allegheny Energy Supply*	PA	Springdale, Units 1,2,3,4 & 5	Gas		CC	628
Allegheny Energy Supply*	PA	Hunlock Creek Power Station	Coal	Oil		46
AmerGen Energy Co. LLC (Exelon)	PA	Three Mile Island	Nuclear			850
American Ref-Fuel Co.	PA	Delaware Valley Resource Recovery Facility	Other			90
Atlantic Renew. & Horizon Wind Energy	PA	Mill Run Wind (FPL)	Wind			15
Atlantic Renew. & Horizon Wind Energy	PA	Somerset Wind Farm	Wind			9
BioEnergy Partners	PA	Pottstown Plant	Other			6.4
Brascan Power	PA	Piney	Water			27
Calpine Corporation	PA	Philadelphia Water Project	Gas			23
Cambria Cogen Co. (Northern Star Gen.)	PA	Cambria County Cogen	Waste Coal			85
Chambersburg Borough Electric Dept	PA	Chambersburg Power Plant	Gas		IC	7.27
City of Harrisburg	PA	Harrisburg WTE Plant	Other			8.2
Cogentrix	PA	Northampton Generating Station	Waste Coal			107
Cogentrix	PA	Scrubgrass Generating Plant	Waste Coal			83
Connectiv Energy	PA	North East Cogeneration Plant	Gas		CC	81.8
Connectiv Energy	PA	Bethlehem Plant	Gas		CC	1,100
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			80
Covanta Energy Corporation	PA	Lancaster County Resource Recovery Facility	Other			35.7
Dominion Generation	PA	Armstrong County	Gas	Oil	CT	600
Dominion Generation	PA	Fairless Energy	Gas			1180
Duke Energy	PA	Fayette County	Gas		CC	620
Exelon Generation Co. LLC*	PA	Fairless Hills Generating	Other		ST/S	60
Exelon Generation Co. LLC*	PA	Cromby Generating Station	Coal	Oil/Nat. Gas		358
Exelon Generation Co. LLC*	PA	Croydon Plant	Gas			370
Exelon Generation Co. LLC*	PA	Eddystone Generating Station	Coal	Oil/Nat. Gas		1359
Exelon Generation Co. LLC*	PA	Falls Plant	Gas			50
Exelon Generation Co. LLC*	PA	Delaware Generating Station (Retiring)	Oil			250
Exelon Generation Co. LLC*	PA	Exelon Power Dist. Gen. Group (47 Units)	Oil	Gas		795
Exelon Generation Co. LLC*	PA	Grows Landfill	Other			6.6
Exelon Generation Co. LLC*	PA	Limerick Nuclear Gen. Station, Units 1&2	Nuclear			2400
Exelon Generation Co. LLC*	PA	Moser Plant	Oil			48
Exelon Generation Co. LLC*	PA	Muddy Run Hydroelectric Plant	Water			1072
Exelon Generation Co. LLC*	PA	Peach Bottom Atomic Power St., Units 2&3	Nuclear			2186
Exelon Generation Co. LLC*	PA	Pennsbury Plant	Oil			48
Exelon Generation Co. LLC*	PA	Schuylkill Generating Station	Oil			175
Exelon Generation Co. LLC*	PA	Southwark Plant	Oil			54
FirstEnergy Generation Corp.*	PA	Bruce Mansfield Plant	Coal			2360
FirstEnergy Generation Corp.*	PA	York Haven	Water			19
FirstEnergy Generation Corp.*	PA	Seneca Pumped Storage Plant	Water			435
FirstEnergy Nuclear Operating Co.*	PA	Beaver Valley Power Station	Nuclear			1630
FPL Energy	PA	Marcus Hook Plant	Gas		CC	750
FPL Energy	PA	Waymart Wind Farm	Wind			64.5
FPL Energy	PA	Meyersdale Wind Power Project	Wind			30
General Chemical Corp.	PA	Marcus Hook Cogen	Oil			4.5
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			80
Indiana University of Pennsylvania	PA	S.W. Jack Cogeneration Plant	Gas			24
J.P. Morgan Chase Bank	PA	Liberty Plant	Gas		CC	578
Kimberly Clark	PA	Chester Operations	Waste Coal			60
LS Power Equity Partners	PA	Ontelaunee Energy Center	Gas		CC	550
Merck & Co., Inc.	PA	West Point (PA) Merck Plant	Gas			30.25
Mid-Atlantic Energy Co.	PA	Piney Creek LP	Waste Coal			32
Midwest Generation LLC	PA	Homer City (EME) Generation	Coal			2012
Montenay Power Corp.	PA	Montgomery County	Other			31
Montenay Power Corp.	PA	York County WTE	Other			35
Mount Carmel Cogen (Owner-Ken Pollack)	PA	Mount Carmel Cogen	Waste Coal			46.5

## Pennsylvania's Existing Electric Generating Facilities

National Renewable Resources Assoc.	PA	Conemaugh Saltsburg	Water			15
National Wind Power	PA	Garrett (Somerset County)	Wind			10.4
PEI Power Corp.	PA	Archbald Power Station	Gas		CT	70
Pennsylvania Wind Energy	PA	Humboldt Industrial Park	Wind			0.13
Penntech Paper Inc.	PA	Bradford (PA) Plant	Coal			52
Power Systems Operations	PA	Ebensburg Plant	Waste Coal			50
PPL Generation LLC*	PA	PPL Bruner Island	Coal			1434
PPL Generation LLC*	PA	PPL Martins Creek (Retirement 2007)	Coal	Oil		1920
PPL Generation LLC*	PA	PPL Montour LLC	Coal			1526
PPL Generation LLC*	PA	PPL Holtwood	Water			109
PPL Generation LLC*	PA	PPL Lower Mt. Bethel	Gas		CC	575
PPL Generation LLC*	PA	PPL Susquehanna LLC	Nuclear			2352
PPL Generation LLC*	PA	PPL Wallenpaupack	Water			44
PPL Generation LLC*	PA	PPL Allentown CTG	Oil		CT	78
PPL Generation LLC*	PA	PPL Fishbach CTG	Oil		CT	36
PPL Generation LLC*	PA	PPL Harrisburg CTG	Oil		CT	72
PPL Generation LLC*	PA	PPL Harwood	Oil		CT	36
PPL Generation LLC*	PA	PPL Jenkins CTG	Oil		CT	36
PPL Generation LLC*	PA	PPL Lock Haven CTG	Oil		CT	18
PPL Generation LLC*	PA	PPL West Shore CTG	Oil		CT	36
PPL Generation LLC*	PA	PPL Williamsport CTG	Oil		CT	36
Procter & Gamble	PA	Mehoopany Plant	Gas			45
Reliant Energy Wholesale Group*	PA	Blossburg Plant (Mothball Pending)	Gas			19
Reliant Energy Wholesale Group*	PA	Cheswick Generating Station	Coal			577
Reliant Energy Wholesale Group*	PA	Conemaugh Power Plant	Coal	Gas		1883
Reliant Energy Wholesale Group*	PA	Elrama Generating Station	Coal			474
Reliant Energy Wholesale Group*	PA	Hamilton CT	Oil			20
Reliant Energy Wholesale Group*	PA	FR Philips Generating Station	Coal			411.3
Reliant Energy Wholesale Group*	PA	Keystone Generating Station	Coal	Oil		1883
Reliant Energy Wholesale Group*	PA	Mountain Plant	Gas	Oil		40
Reliant Energy Wholesale Group*	PA	New Castle Generating Station	Coal	Oil		303
Reliant Energy Wholesale Group*	PA	Orrtanna Plant	Oil			20
Reliant Energy Wholesale Group*	PA	Portland Generating Station	Coal	Gas	CT	570
Reliant Energy Wholesale Group*	PA	Seward Generating Station	Waste Coal			521
Reliant Energy Wholesale Group*	PA	Shawville Generating Station	Coal	Oil		603
Reliant Energy Wholesale Group*	PA	Titus Generating Station	Coal	Gas		274
Reliant Energy Wholesale Group*	PA	Tolna Station	Oil		CT	40
Reliant Energy Wholesale Group*	PA	Warren Power Plant	Gas	Oil		
Reliant Energy Wholesale Group*	PA	Brunot Island Generating Station	Gas	Oil	3 - SC	343
Reliant Energy Wholesale Group*	PA	Hunterstown Plant	Gas		CC	795
Reliant Energy Wholesale Group*	PA	Wayne	Oil			
Reliant Energy Wholesale Group*	PA	Shawnee CT	Oil		CT	20
Rohm and Haas Co.	PA	Bristol	Oil			1.5
Schuykill Energy Resources	PA	Shenandoah 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
Temple University	PA	Temple Univ. Standby Electric Gen. Facility	Gas			16
Tractebel Power Inc.	PA	NEPCO	Waste Coal			50
Tractebel Power Inc.	PA	Northumberland Cogeneration Facility	Other			16.2
Trigen Energy Corp.	PA	Grays Ferry Power Plant	Gas		CC	173.6
Trigen Energy Corp.	PA	Pennsylvania House Power Plant	Other			0.1
UGI Development Co.*	PA	Hunlock Creek Power Station	Coal	Oil		50
UGI Development Co.*	PA	Hunlock Creek Power Station	Gas		CT	50
Wheelabrator Technologies Inc.	PA	Frackville Energy Co.	Waste Coal			42
Wheelabrator Technologies Inc.	PA	Wheelabrator Falls WTE	Other			53
WPS Power Development	PA	Sunbury Generating Station	Coal	Oil		462.5
WPS Power Development	PA	WPS Westwood Generation	Waste Coal			30
<b>Total MW in PA</b>						<b>46495</b>
*=Verified Data						
Revised 4/28/06						
Source: <a href="http://www.epga.org/GeneratingFacilities.xls">http://www.epga.org/GeneratingFacilities.xls</a>						

Coal – 21,150 MW (45.5%)  
 Gas – 9,920 MW (21.3%)  
 Nuclear – 9,419 MW (20.3%)  
 Water – 2,243 MW (4.8%)

Oil – 1,845 MW (4.0%)  
 Waste Coal -- 1,449 MW (3.1%)  
 Wind – 129 MW (0.3%)  
 Other – 342 MW (0.7%)