

Buchart Horn/BASCO Associates

Energy Symposium

**Electric
Choice??**

**Price Caps
Off or On??**

**Generation
Deregulation
??**

**Economic
Development
?**

***"What changes
in energy mean
to you."***

**Future
Electric
Price
Increases??**

**Energy Taxes
and Rate
Impacts from
Policy Shifts**

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Pennsylvania Public Utility Commission

HISTORICALLY

1997-2007

Generation, transmission, distribution facilities are all owned by a single monopoly supplier – a regulated utility.

No market economics or related efficiencies.

Generation is owned by deregulated entities. If the generation runs and is economic, they get paid. If not, they don't. (marketplace)

Regulated utility owns transmission and distribution facilities.

Reasons for the Electric Customer Choice and Competition Act

- The United States government wanted more competition:
 - Federal Energy Policy Act of 1992 declared the nation to move forward with wholesale competitive markets.
 - Significant advances in federal energy regulation encouraged greater competition in the wholesale electric market. (FERC Landmark Orders 888 & 889 – granted open access and encouraged wholesale competition.)
- 1990's electric rates in PA were on average higher than the national average. Retail competition would create downward pressure on electric generation prices. Such downward push on prices would benefit industrial and commercial business.

Reasons for the Electric Customer Choice and Competition Act *(continued)*

- ❑ Competition would minimize the existing price disparities between retail rates in EDC territories across Commonwealth.
- ❑ Markets would create efficiency incentives in operation and maintenance of electricity generation assets.
- ❑ Concern that traditional regulation was heading towards large rate increases related to construction of large generating units.

Available Funds

There are multiple sources of funds for those of you willing to embark on utilization of renewable energy or who are serious about conservation and energy efficiency.

Available Prices

Natural gas is at a significantly lower price. Electric prices are rising for a variety of reasons.

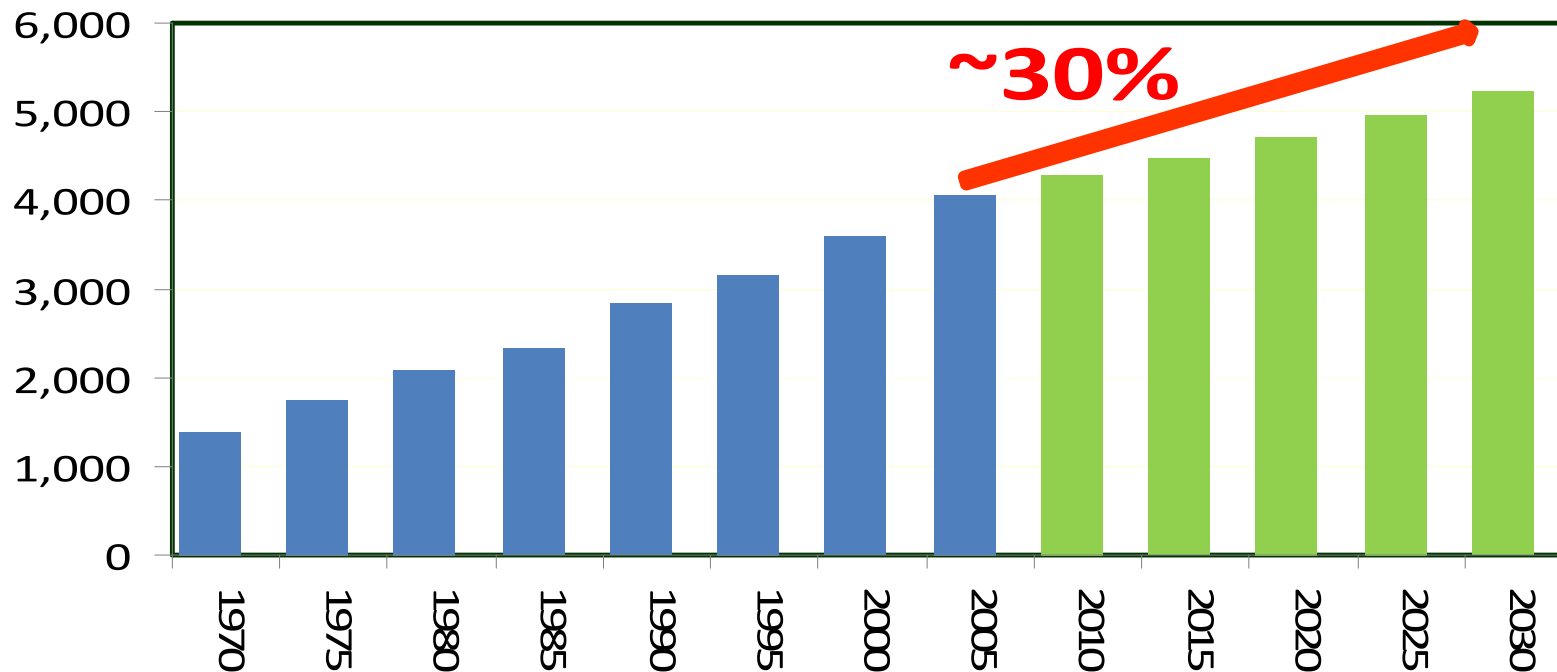
Useful Websites

- ❑ PUC www.puc.state.pa.us
- ❑ DEP www.depweb.state.pa.us
- ❑ DCED www.dced.state.pa.us
- ❑ PPL Electric Utilities www.pplelectric.com
- ❑ FirstEnergy Corp www.firstenergycorp.com
- ❑ UGI Utilities, Inc. www.ugi.com
- ❑ PECO Energy Company www.peco.com
- ❑ Columbia Gas www.columbiagaspa.md.com
- ❑ The US Department of Energy's Energy Savers (www.energysavers.gov)
- ❑ Energy Information Administration (www.eia.doe.gov)
- ❑ The American Council for an Energy-Efficient Economy's Consumer Guide to Home Energy Savings (www.aceee.org)
- ❑ EPA and DOE ENERGY STAR® Site (www.energystar.gov)
- ❑ The Department of Energy's Office of Energy Efficiency and Renewable Energy (www.eere.energy.gov)
- ❑ Alliance to Save Energy's Power\$mart Booklet (www.ase.org/powersmart)
- ❑ Web-Based Do-It-Yourself Energy Audit <http://hes.lbl.gov>

DEMAND PROJECTED TO INCREASE 30% BY 2030

We cannot permit nor meet such an increase in usage.

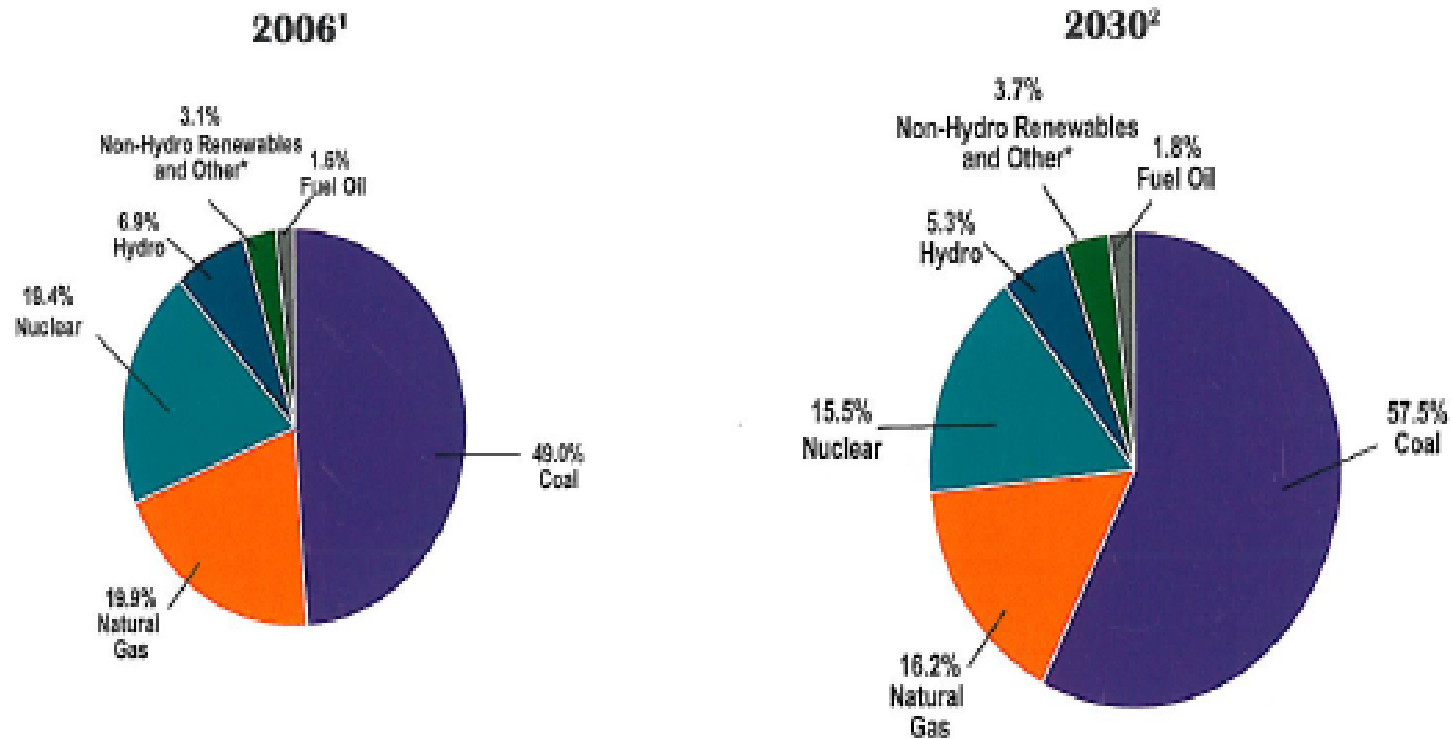
Billion kilowatt-hours



Sources: U.S. Department of Energy, Energy Information Administration, *Annual Energy Review 2006* and *Annual Energy Outlook 2008 Early Release*

*Electricity demand projections based on expected growth between 2006-2030

Current National Fuel Mix Compared to EIA's 2030 Projections



- “Non-Hydro Renewable and Other” includes generation from solar, wind, geothermal, biomass (agricultural waste, municipal solid waste, landfill gas recovery, wood, pitch) hydrogen, batteries, chemicals, non-wood waste, purchased steam, sulfur and miscellaneous technologies.

Sum of Components may not add to 100% due to independent rounding.

1 Source: U.S. Department of Energy, Energy Information Administration, Power Plant Report (EIA-920), Combined Heat and Power Plant Report (EIA-920), and Electric Power Monthly (2006 Preliminary).

2 Source: U.S. Department of Energy, Energy Information Administration, *Annual Energy Outlook 2007*.



Act 129 Changes Everything

Act 129 Mandates

“(C) Reductions in consumption. The plans adopted under subsection (B) shall reduce electric consumption as follows:

(1) By May 31, 2011, total annual weather-normalized consumption of the retail customers of each electric distribution company shall be reduced by a minimum of 1%. The 1% load reduction in consumption shall be measured against the electric distribution company’s expected load as forecasted by the commission for June 1, 2009 through May 31, 2010.”

Act 129 Mandates

“(2) By May 31, 2013, the total annual weather-normalized consumption of the retail customers of each electric distribution company shall be reduced by a minimum of 3%.”

Act 129 Mandates

“(1) By May 31, 2013, the weather-normalized demand of the retail customers of each electric distribution company shall be reduced by a minimum of 4.5% of annual system peak demand in the 100 hours of highest demand. The reduction shall be measured against the electric distribution company’s peak demand for June 1, 2007 through May 31, 2008.”

Act 129 Mandates

- ❑ Mandates of a minimum of 10% of the required reductions in electric consumption shall be obtained from federal, state, and local government including municipalities, school districts, institutions of higher education and nonprofit entities.
- ❑ If this goal was achieved in 2009, the Commonwealth could largely avoid the need to raise taxes to match shortfalls in Commonwealth budgets.

Act 129 Plan

□ PPL

- Residential – provides a number of incentives to reduce electric consumption
 - Energy Assessment & Weatherization Program - designed to provide customers with their home's energy performance and recommendations on energy efficiency actions they can take
 - Home energy audits offered
 - Incentives offered to install high efficiency HVAC, high efficiency/ENERGY STAR® rated equipment: CAC, air-source heat pump, heat pump hot water heater, dishwashers, washers, refrigerators, gas furnace
 - Promote construction of ENERGY STAR® new homes
 - Incentives to install PV systems and geothermal heat pumps
- Commercial/Industrial Programs
 - Promotes purchase of high efficiency equipment
 - Financial incentives to HVAC contractors to diagnose performance inefficiencies and make energy saving retrofits
 - Incentives to install PV systems and geothermal heat pumps
 - Incentives to install high efficiency equipment

Act 129 Plan

- PPL
 - LEED Certification Program
 - To promote construction or renovation of commercial office, industrial and warehouse buildings, facilities owned and occupied by 501C3s (e.g. art galleries, hospitals, museums, libraries, etc.), and college and university facilities that are environmentally responsible, profitable and healthy places to work.
 - To encourage local economic development organizations, 501C3s and universities, commercial and industrial architectural and design firms and developers/owners to “build green”
 - Qualified organizations can receive reimbursement for registration fees, design review, construction review and initial certification review fees paid to the U.S. Green Building Council for up to a maximum of \$5,000 per project located in PPL’s Pennsylvania Electric Service Region. Projects which achieve Gold or Platinum certification will be rewarded with an additional \$5,000 grant on achieving “gold” or “platinum” status.
 - Application and Reimbursement Procedure
 - Discuss your project with PPL’s Economic Development Manager, Donald Bernhard, 610-774-5458
 - Complete the simple contract information form available on PPL’s website at www.ppleconomicdevelopment.com and submit electronically or in hard copy before Nov. 30, 2009.

Act 129 Plan

- FirstEnergy
 - Residential – provides a number of incentives to reduce electric consumption
 - Offers Home Energy Audits
 - Energy Efficiency Products Program – provides incentives to participating customers and support to retailers that sell energy efficient products. In addition, the program will provide community education and workshops.
 - Residential New Construction – encourages builders to achieve highly energy efficiency homes through the implementation of contractor-installed HVAC, solar, or other eligible systems in existing or new residential buildings
 - Direct Load Control provided for residential central air conditioning (“CAC”) as well as controls for electric water heaters and pool pumps for customers receiving CAC
 - Provides incentives for contractor-installed HVAC systems in existing or new residential buildings.
 - Commercial/Industrial Programs
 - Energy Audit and Technology Assessment Program
 - Equipment Program – provides for the implementation of cost effective, high efficiency standard and non-standard measures
 - Demand Response Program – designed to address the 100 highest peak load hours in the year

SMART METERS

- Time of day rates.
- 2 way signals between utility and consumer energy audits.
- If you are selling a house without an energy audit, you may not be selling a house.
- Rampant increase in energy audits due to stimulus.

Electric Choice

- ❑ In the next 2 years the entire state will have choices as to electric generation providers.
- ❑ In Pittsburgh, where rate caps have been off for 5 years, residents have 4 or 5 choices of suppliers.
- ❑ Commercial and industrial have 20 choices.
- ❑ Radio ads currently running in Harrisburg are being done by Direct Energy, Dominion, Constellation Energy and Glacial Energy, 4 huge firms.



Government Opportunities

Keystone HELP Energy Efficiency Loan & Rebate Program

The rebate portion of this program is closed to new applications, effective beginning August 5, 2009. The loan portion remains open and is anticipated to have funding to continue operations for 4-5 months at current use rates. Please visit the program website for more information.

Keystone HELP Energy Efficiency Loan & Rebate Program

Eligible Efficiency Technologies: Equipment Insulation, Furnaces, Boilers, Heat Pumps, Air Conditioners, Programmable Thermostats, Caulking/Weather-Stripping, Duct/Air Sealing, Building Insulation, Windows, Doors, Water Heaters, Ceiling Ventilating Fans

Applicable Sectors: Residential, Low-Income Residential

Amount: \$1,000 - \$35,000 (varies by loan type)

Maximum Amount: \$35,000 (varies by loan type)

Terms: 1 – 10 years (varies by loan type).

Program Budget: \$17 million

Web Site: <http://www.keystonehelp.com>

Keystone HELP Energy Efficiency Loan & Rebate Program

Pennsylvania homeowners who own and make qualifying improvements to their one- or two-unit primary residence located in the state and whose combined annual household income does not exceed \$150,000 are eligible to apply for loans and rebates under this program. Eligible applicants may receive only one rebate or loan during each fiscal year, but they may apply for additional rebates or loans in future years, as long as the additional projects comply with the published guidelines current at the time of application.

Solar Energy Program

The Solar Energy Program provides financial assistance in the forms of grants and loan funds to promote the use of alternative energy in the Commonwealth. The program is administered jointly by the Department of Community and Economic Development (DCED) and the Department of Environmental Protection (DEP) under the direction of CFA.

Sunshine Solar Rebate Program

Eligible Renewable/Other Technologies: Solar Water Heat, Solar Space Heat, Photovoltaics

Applicable Sectors: Commercial, Residential, Low-Income Residential, Agricultural

Incentive Amount: Residential PC - \$2.25/W DC

Commercial PV - \$1.75-\$2.25/W DC (varies by system size)

Solar Thermal - 25% of installed costs

Low-income (PV and solar thermal) - 35% of installed costs

Maximum Amount: Residential PV - lesser of \$22,500 or 35% of installed costs

Commercial PC - lesser of \$377,500 or 35% of installed costs

Solar Thermal - \$2,000 for residential, \$20,000 for commercial

Program Budget: \$100 million (total over life of the program)

Web Site: <http://www.depweb.state.pa.us/energ independent/cwp/view.asp?a=3&q=545926>

Authority 1: Special Session H.B. 1

Small Business Advantage Grant Program

Eligible Efficiency Technologies: Lighting, chillers, Boilers, Heat Recovery, Steam-System Upgrades, Compressed Air, Motor-ASDs/VSDs, Custom/Others pending approval

Applicable Sectors: Commercial

Amount: Up to 50% of project costs

Maximum Amount: \$7,500

Project Review/Certification: Must demonstrate a minimum annual 15% economic gain through energy conservation/pollution prevention as a direct result of the project

Web Site: <http://www.depweb.state.pa.us/enintech/cwp/view.asp?a=1413&q=503219>

Contact: David Barnes

E-Mail: epadvantagegrant@state.pa.us

Pennsylvania Energy Harvest Grant Program

Pennsylvania Energy Harvest's most recent grant solicitation, issued in April 2008, offers funding for a variety of types of renewable energy and energy efficiency projects. The solicitation is open to nonprofits, county and municipal governments, school districts, colleges and universities, conservation districts, and incorporated watersheds, recognized by the DEP. **For profit** entities eligible under previous solicitations are no longer eligible for direct funding but are encouraged to apply for Pennsylvania Economic Development Authority (PEDA) Grants or partner with eligible sponsors.

Pennsylvania Energy Harvest Grant Program

Eligible Efficiency Technologies: Yes; specific technologies not identified

Eligible Renewable/Other: Solar Water Heat, Solar Space Heat, Solar Thermal Electric, Photovoltaics, Landfill Gas, Wind, Biomass, Renewable Transportation Fuels, Fuel Cells, Geothermal Heat Pumps, Anaerobic Digestion, Small Hydroelectric, Other distributed Generation Technologies

Applicable Sectors: Nonprofit, Schools, Local Government, Institutional

Amount: Varies by project

Maximum Amount: \$500,000

Program Budget: \$5 million (April 2008 solicitation)

Web Site: <http://www.depweb.state.pa.us/energy/cwp/view.asp?a=1374&q=483024>

New RFPs are usually issued during the spring of each year and interested parties may sign up to be notified of the reactivation on the program website.

Guaranteed Energy Savings Contracts

- ❑ Passed 1998
- ❑ 62 Pa. C.S.A. Section 3751 “a governmental unit may enter into a guaranteed energy savings contract with a qualified provider if it finds that the amount it would spend on the energy conservation measures recommended in the proposal would not exceed the amount to be saved in both energy and operational costs within a 15-year period from the date of installation...”

Appliance Clunkers Program

The State has applied for \$11 million in federal American Recovery and Reinvestment Act funds to complement electric utilities Act 129 programs.

The program will likely have eligibility in the first quarter of 2010 and will offer rebates for the replacement of the following:

boilers, central air conditioners, clothes washers, dish washers, freezers, furnaces (oil and gas), heat pumps, refrigerators, room air conditioners and water heaters.

Energy Audits

- Government incentives
- Electric utility incentives
- Incentives to act on recommendations by auditors
- Training a significant group of new energy auditors

Federal – Energy-Efficient Commercial Buildings Tax Deduction

A tax deduction of \$1.80 per square foot is available to owners of new or existing buildings who install (1) interior lighting, (2) building envelope, or (3) heating, cooling, ventilation, or hot water systems that reduce the building's total energy and power cost by 50% or more in comparison to a building meeting minimum requirements set by ASHRAE Standard 90.1-2001. Energy savings must be calculated using qualified computer software approved by the IRS.

Deductions of \$0.60 per square foot are available to owners of buildings in which individual light, building envelope, or heating and cooling systems meet target levels that would reasonably contribute to an overall building savings of 50% if additional systems were installed

Federal Incentive – Energy-Efficient Buildings Tax Deduction

The Federal Energy Policy Act of 2005 established a tax deduction for energy-efficient commercial buildings placed in service from January 1, 2006 through December 31, 2007.

This deduction expires Dec. 31, 2013.

Web Site: www.energystar.gov

Energy Prices

- Commercial electric prices will go up more than residential electric prices
- Government loves to use energy to tax
- Recent budget compromise will bring you an unwelcome Christmas present
- Cap and trade
- Significant financial costs with corrective environmental requirements

Thank You



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James H. Cawley, Chairman
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Commission