

## Overview of Energy

wind, solar, natural gas/fracking, hydroelectric

<http://www.eia.gov/state/analysis.cfm?sid=PA>

Pennsylvania's Alternative Energy Portfolio Standards (AEPS) require 18% of electricity provided by generation and distribution companies to come from renewable sources by 2021. At least 0.5% must come from solar photovoltaic (PV) power. Pennsylvania is among the top 10 states nationally in grid connected solar PV installations. Among the resources Pennsylvania recognizes as meeting part of its alternative energy requirements are by-products of pulping and wood manufacturing, coal-mine methane, and waste coal.

<http://heartland.org/policy-documents/research-commentary-pennsylvania-alternative-energy-portfolio-standard>

Supporters of the AEPS say the mandates are necessary to reduce pollution, will lead to the creation of "green" jobs, and will increase electricity prices only marginally. However, there is little evidence the mandate will benefit the environment. Renewable sources such as wind and solar are intermittent and thus require fossil-fuel generators to back them up. Running fossil-fuel generators in this way can emit more pollutants than if they were used as primary power sources.

A report from Colorado-based analytics company Bentek Energy evaluated this problem and found, "While meeting RPS-mandated wind generation requirements appears to have a minimal impact on CO<sub>2</sub>, it appears to appreciably increase SO<sub>2</sub> and NO<sub>x</sub>."

A December 2012 joint report by the National Center for Policy Analysis and Beacon Hill Institute found the mandate would increase Pennsylvania's electricity prices by \$2.55 billion in 2021, an increase of nearly 12 percent. The Beacon Hill Institute also estimates investment will decrease by \$205 million and an average of 17,380 jobs will be lost as a result of the law .....

### **State Analysis: Pennsylvania**

<http://www.eia.gov/state/analysis.cfm?sid=PA>

A U.S. Energy Information Administration Analysis of Pennsylvania's energy portfolio finds Pennsylvania to be "one of the top electricity-producing states in the nation, typically second only to Texas." Although Pennsylvania is also a high-energy consumer overall, its electricity production "regularly exceeds in-state consumption." Pennsylvania's abundant generation from coal, natural gas, and nuclear sources is considered to be a major contributing factor.

### **The Economic Impact of Pennsylvania's Alternative Energy Portfolio Standard**

<http://heartland.org/policy-documents/economic-impact-pennsylvanias-alternative-energy-portfolio-standard>

Pennsylvania's current Alternative Energy Portfolio Standard law will raise the cost of electricity by \$2.55 billion for the state's electricity consumers in 2021, within a range of \$1.71 billion and \$3.24 billion, under the current AEPS law, according to this December 2012 joint report by the National Center for Policy Analysis and the Beacon Hill Institute.

[http://www.ems.psu.edu/sites/default/files/u5/Cost\\_of\\_PA\\_AEPS\\_Study.pdf](http://www.ems.psu.edu/sites/default/files/u5/Cost_of_PA_AEPS_Study.pdf)

The Cost of Alternative Energy Portfolio Standards in Pennsylvania

The tasks of the study are as follows:

1. We discuss the structure of the Pennsylvania AEPS and briefly compare it to similar mandates in surrounding states;

2. We provide an overview of technologies other than wind and photovoltaic energy that qualify as alternative energy sources under the AEPS;
3. We discuss the costs of expanding wind energy in Pennsylvania to meet AEPS goals;
4. We discuss the costs of photovoltaic energy in Pennsylvania to meet AEPS goals.

<http://aweajiles.cms-plus.com/FileDownloads/pdfs/Pennsylvania.pdf>

### **Wind Projects (2013)**

- Installed wind capacity: 1,340 MW
- State rank for installed wind capacity: 16th
- Number of wind turbines: 720
- State rank for number of wind turbines: 16th
- Wind projects online: 25
- Wind capacity under construction: 0 MW

### **Current Wind Generation**

In 2013, wind energy provided 1.5% of all in-state electricity production.

- Equivalent number of homes powered by wind: 308,000

<http://www.jdsupra.com/legalnews/pennsylvania-puc-to-amend-alternative-en-13882/>

### **Pennsylvania PUC to Amend Alternative Energy Portfolio Standards Regulations**

<http://www.governorswindenergycoalition.org/?p=5205>

Pennsylvania State Rep. Greg Vitali has introduced legislation that would increase the amount of electricity that the commonwealth's utilities must obtain from wind power and other renewable energy sources.

H.B. 100 would amend the Pennsylvania Alternative Energy Portfolio Standards (AEPS) Act by requiring Pennsylvania utilities to obtain 15% of their power from renewable sources by 2023, compared to the current AEPS requirements of 4% by 2013 and 8% by 2021.

## Wind farms in PA

Name	Turbines	Capacity (MW)	Power (MW-hr/yr)	Location (county)	Year Operational	Status
Allegheny Ridge Wind Farm	40	80	210,240{6}	Blair & Cambria	2007	Operational
Armenia Mountain Wind	67	101	unknown	Tioga & Bradford	2010[7]	Operational
Bear Creek Wind Pwr Project	12	24	70,000[8]	Luzerne	2006	Operational
Casselman Wind Power	23	34.5	90,666[6]	Somerset	2007	Operational
Chestnut Flats Wind Farm	19	38	unknown	Blair and Cambria	2011	Operational
South Chestnut Wind	23	46	unknown	Fayette	2011	Operational
Forward Wind Project	14	29.4	77,263[6]	Somerset	2008	Operational
Green Mountain Wind	8	10.4	27,331[6]	Somerset	2000	Operational
Highland Wind Project	25	62.5	unknown	Cambria	2009	Operational
Laurel Hill Wind Energy Project	35	70.5[9]	unknown	Lycoming	2012	Operational
Locust Ridge I	13	26	68,328[10]	Schuylkill	2004	Operational
Locust Ridge II	51	102	268,056[6]	Columbia & Schuylkill	2008	Operational
Lookout Wind Project	18	37.8	99,338[6]	Somerset	2008	Operational
Mehoopany Wind Farm	88[12]	140.8[12]	Unknown	Wyoming	2012	Operational
Meyersdale Wind Power Project	20	30	78,840[6]	Somerset	2003	Operational
Mill Run Wind Energy Center	10	15	39,420[6]	Fayette	2001	Operational
North Allegheny Wind	35	70[13]	unknown	Blair & Cambria	2009	Operational
Patton Wind Farm	15[14]	30	unknown	Cambria	2012	Operational
Rausch Creek Wind Farm	50-60[14]	100-120	unknown	Schuylkill		Planned
Sandy Ridge Wmd Farm	25	50[15]	unknown	Centre	2012	Operational
Stonycreek Wind Farm	35	52.5[16]	unknown	Somerset	2009	Operational
Somerset Wind Farm	6	9	23,652[6]	Somerset	2001	Operational
Twin Ridges Wind Farm	68[17]	140	Unknown	Somerset	2012	Operational
Waymart Wind Fann	43	64.5	169,506[6]	Wayne	2003	Operational

## Renewable Energy Projects

<http://www.kestonerenewable.com/projects.html>

### **Southern Alleghenies Landfill Methane Recovery Project**

Southern Alleghenies Landfill is located in Somerset County, Pennsylvania near the Town of Davidsville. The landfill is owned and operated by Waste Management, Inc. (Waste Management). The project was purchased by Leaf LFG US Investments, Inc. in November 2008.

This high-BTU project began commercial operation in September 2007. Compression and an Air Liquide-Medal Biogaz Membrane System deliver 970 BTU gas through a 2.8-mile pipeline to a local public utility's natural gas distribution system. This plant was designed to process over 2,000 scfm of raw LFG. While Keystone operated this plant, it produced about 650 MCF per day. Keystone operated this plant until September 30, 2009 at which time the new owner assumed operating control.

[http://apps2.eere.energy.gov/wind/windexchange/schools/project\\_detail.asp?id=149](http://apps2.eere.energy.gov/wind/windexchange/schools/project_detail.asp?id=149)

### **School Wind Project at Somerset County Technology Center**

Here you will find information about the school wind energy project at Somerset County Technology Center. You can locate other school wind projects for K-12, community colleges, universities, and more on our Google Map.

### **Somerset County Technology Center**

281 Technology Dr. Somerset, PA 15501-4309 United States (40.0027/-79.0333)

Size: 2.4 kW

Technology: Skystream 3.7

Type: Other Education

Status: Planned

[https://en.wikipedia.org/wiki/Sustainable\\_energy](https://en.wikipedia.org/wiki/Sustainable_energy)

The U.S. Environmental Protection Agency defines green power as electricity produced from solar, wind, geothermal, biogas, biomass and low-impact small hydroelectric sources. Sustainable energy can produce some pollution of the environment, as long as it is not sufficient to prohibit heavy use of the source for an indefinite amount of time .

“Sustainable Energy has two key components: renewable energy and energy efficiency.”

[https://en.wikipedia.org/wiki/Renewable\\_energy](https://en.wikipedia.org/wiki/Renewable_energy)

**Renewable energy** is generally defined as energy that comes from resources which are naturally replenished on a human timescale such as sunlight, wind, rain, tides, waves and geothermal heat.