

EARLY RETIREMENT OF OUR NUCLEAR PLANTS: WHAT'S AT STAKE FOR PENNSYLVANIA?

Pennsylvania's five nuclear plants are the state's largest source of electricity and power an industry that is critical to the Commonwealth's economy. In addition to keeping our air clean, the industry supports good-paying jobs and local businesses, keeps energy prices low and drives growth in all corners of the state. Throughout the Commonwealth, 16,000 Pennsylvanians rely on the nuclear industry for a family-sustaining job¹. It also supports companies working in Pennsylvania, including Westinghouse Electric Co. and GE Hitachi Nuclear Energy². Between 2014 and 2016, Pennsylvania's nuclear plants provided the building trades with nearly seven million man-hours of refueling and maintenance work. The closure of any of our state's nuclear plants will leave a hole in Pennsylvania's economy.³

As the largest source (93%) of our state's carbon-free energy, Pennsylvania's five nuclear power plants work every day to keep our air clean.⁴ But even with all that clean power, Pennsylvania is America's third largest producer of CO₂ emissions. Closing Pennsylvania's nuclear plants will increase CO₂ emissions by more than 37 million metric tons, along with increased emissions of SO₂, NO_x and small particulates harmful to air quality.⁵ Losing the state's nuclear fleet would soon mean a decline in air quality, harming Pennsylvania's children and families.

Pennsylvania is slated to lose a quarter of its nuclear power—with Three Mile Island and Beaver Valley prematurely closing in 2019 and 2021, respectively, and additional plants within the Commonwealth projected to follow – unless nuclear energy's environmental attributes are properly valued like the 16 other sources of energy recognized in AEPS. If Pennsylvania's leaders do not act immediately to properly value these plants, Pennsylvania's communities, economy and environment will face imminent and irreversible harm.

If State Lawmakers Do Nothing - Pennsylvanians Will Bear the Cost

Failure to enact HB 11 has real consequences. **Allowing Pennsylvania's nuclear power plants to succumb to failed policies will cost the average Pennsylvanian \$2.39 per month in residential electricity cost increases alone and, all told, cost Pennsylvanians \$4.6 billion annually⁶ from:**

- \$788 million annually in electricity cost increases
- \$2 billion annually in lost state GDP
- \$1.6 billion annually in costs associated with carbon emissions
- \$260 million annually in other pollution costs associated with SO₂, NO_x, and PM_{2.5} emissions

¹ <https://nuclearenergy.pasenategop.com/pennsylvanias-bipartisan-nuclear-energy-caucus-releases-report-detailing-impacts-of-losing-the-states-nuclear-industry-and-provides-options-for-taking-action-in-2019/>

² <https://www.nuclearpowerspennsylvania.com/issue/economy/>

³ Martin Williams, Business Manager – Boilermakers Local 13, Philadelphia, Testimony for the Pennsylvania Senate Nuclear Caucus Hearing, May 23, 2018, from data provided by Exelon, FirstEnergy, and Talen Energy.

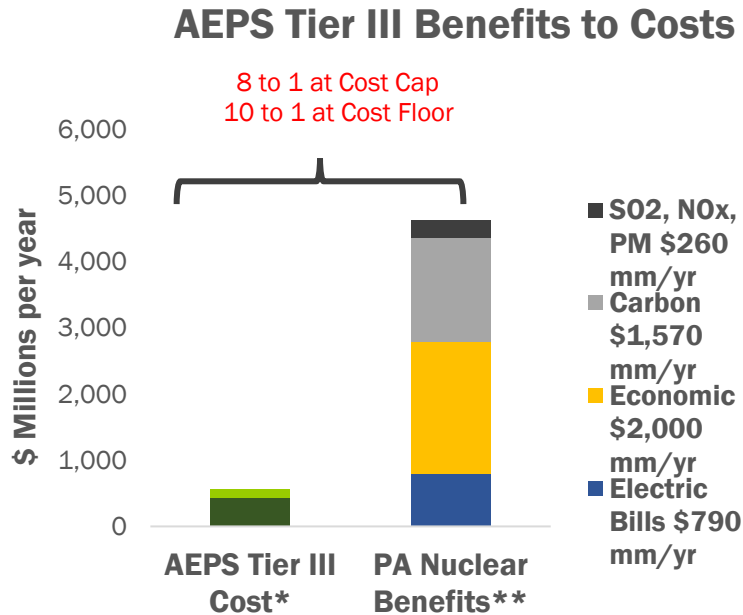
⁴ https://www.pennlive.com/opinion/2015/09/heres_why_nuclear_energy_is_es.html

⁵ PA Nuclear Energy Caucus Report

⁶ http://files.brattle.com/files/5732_pennsylvania_nuclear_power_plants_contribution_to_the_state_economy.pdf

Benefit-To-Cost Of House Bill 11 For Pennsylvanians

Initial estimates of the Tier 3 credits (which are not nuclear specific) total \$500 million. When you consider the total benefit and cost, \$4.6 billion annually of benefits versus \$500 million in cost annually, it is an overwhelming benefit to cost ratio of 8 to 1 for Pennsylvanians annually.⁷



For this Amount We Will Also Maintain:

- \$69 million in state tax revenue
- \$1.8 billion in local spending benefitting 4,150 companies
- 16,000 family-sustaining jobs
- Lower energy costs

⁷ Tier III price cap of \$7.90 and price floor of \$6.08, http://www.puc.pa.gov/Electric/pdf/AEPS/AEPS_Ann_Rpt_2017.pdf for Tier 1 reference price

Average Cost For Residential Customers By Utility

If legislation is enacted, the average Pennsylvania residential customer would see a **\$1.77 per month charge on their electricity bill – less than the increase if the plants close**, all while preserving the fleet’s valuable environmental benefits for all Pennsylvanians.

Utility	Typical Residential Bill Now ⁸ (\$/month); Cost of gas is \$3/mmBtu	Residential Bill with AEPS Tier III ⁹ (\$/month) Cost of gas is \$3/mmBtu	Residential Bill without PA Nuclear ¹⁰ (\$/month) Cost of gas is \$4.50/mmBtu	Residential Bill without PA Nuclear (\$/month) Cost of gas is \$6/mmBtu
Citizen’s Electric	\$59.95	\$61.72	\$62.34	\$63.18
Duquesne Light Co.	\$84.27	\$86.04	\$86.66	\$87.50
Metropolitan-Edison Co. (FE)	\$73.10	\$74.87	\$75.49	\$76.33
PECO Energy Co	\$76.33	\$78.10	\$78.72	\$79.56
Pennsylvania Elec Co (FE)	\$81.71	\$83.48	\$84.10	\$84.94
Pennsylvania Power (FE)	\$71.74	\$73.51	\$74.13	\$74.97
Pike County L&P	\$78.58	\$80.35	\$80.97	\$81.81
PPL Electric Utilities	\$76.25	\$78.02	\$78.64	\$79.48
UGI Utilities	\$60.16	\$61.93	\$62.55	\$63.39
Wellsboro Electric Co.	\$75.56	\$77.33	\$77.95	\$78.79
West Penn Power Co.	\$60.46	\$62.23	\$62.85	\$63.69
Average	\$72.56	\$74.33	\$74.95	\$75.79
Impact, typical residential bill (\$/month)		\$1.77	\$2.39	\$3.23

Maintaining a diverse fuel base also moderates price increases during severe weather. For example, during the cold snap of Jan. 5 – Jan. 7, 2018 (“Winter Storm Grayson”), natural gas fired fuel costs in Pennsylvania soared by 1,700% compared to history. These gas prices contributed to power price spikes as prices in PA during the three-day cold snap increased by 800% on average over historical levels. During the highest-priced hour, power prices cleared 2,100% higher compared to history and up to 2,500% higher for a 5-minute period. Without the round-the-clock production of the PA nuclear plants, these extreme price levels would have been experienced for much longer periods.¹¹

⁸ http://www.puc.state.pa.us/filing_resources/rate_comparison_report.aspx; assumes 500 kWh/month, non-electric heating customers

⁹ Calculated at 2017 PA retail sales of 142.7 TWh, Tier III price of \$7.08/credit, usage of 500 kWh/month, non-electric heating customers

¹⁰ http://files.brattle.com/files/5732_pennsylvania_nuclear_power_plants_contribution_to_the_state_economy.pdf

¹¹ Fuel cost for CCGT based on Tetco-M3 Gas and 7.2 MMBtu/MWh heat rate. 2017 average TETCO-M3 price was \$2.5/MMBtu and Jan 5-7 average TETCO-M3 price was \$45/MMBtu.