

The Clean Power Plan and Beyond: Impacts on Energy Bills of Pennsylvania Businesses

City skylines have long been a symbol of innovation and prosperity. What you can't see is that these same buildings are some of the largest energy consumers in Pennsylvania and are therefore responsible for significant amounts of the state's carbon pollution.

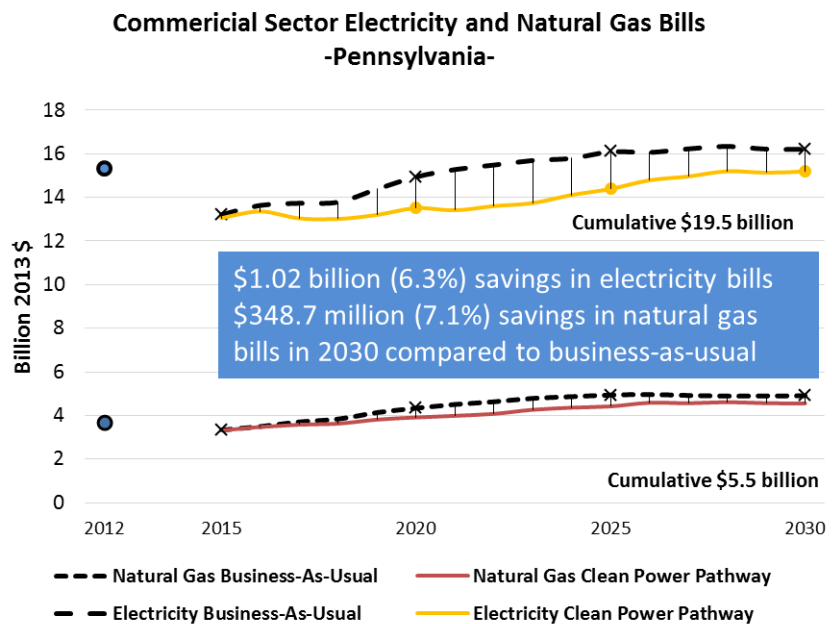
In August 2015, President Obama and the U.S. Environmental Protection Agency released the final Clean Power Plan, regulating carbon pollution from existing power plants for the first time. Since then, many cities have released Climate Action Plans, setting targets for carbon emissions. The success of these two initiatives are mutually dependent. EPA's Clean Power Plan requires strong local action, and the Climate Action Plans of cities, in turn, need national policies to ensure affordable, reliable, low-carbon electricity.

[Georgia Tech](#) has modeled low-cost pathways for compliance with the Clean Power Plan that accelerate the transition from coal plants to cleaner fuels such as natural gas. By emphasizing energy efficiency and renewable policies, these pathways temper the growth of new gas infrastructure. An analysis of the effects of such clean power pathways has just been released, describing their impacts on the energy bills and carbon pollution.

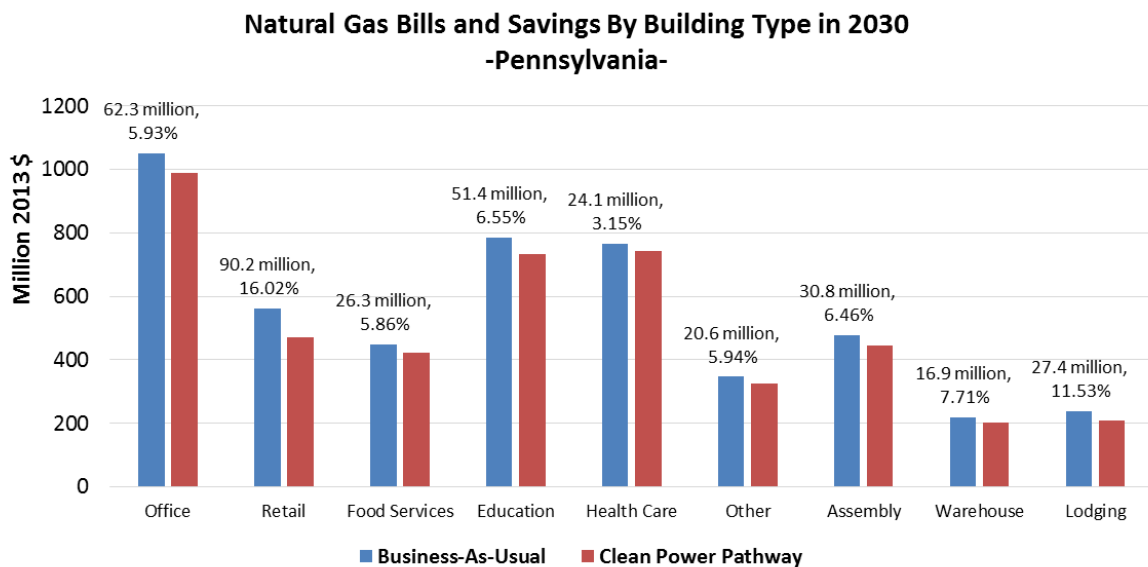
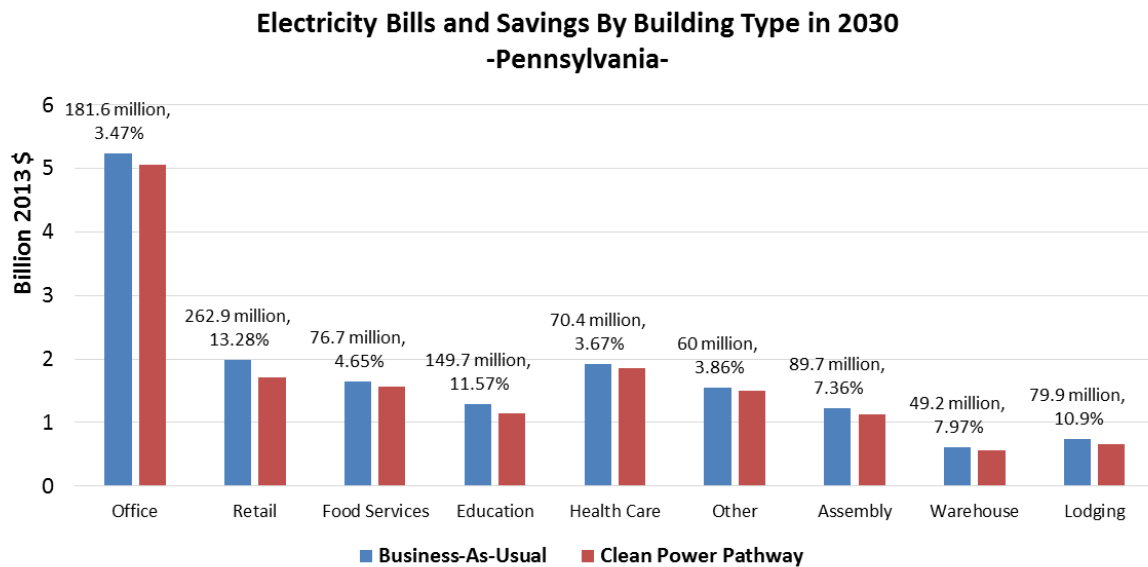
These results illustrate how commercial building owners and occupants can benefit from more efficient and more affordable air conditioning, lighting, electronics and other equipment, and from improved building shells as well as rooftop solar systems.

The Georgia Tech analysis found that:

- Commercial building owners and occupants in Pennsylvania could realize an average annual electricity savings of **\$1.02 billion** (6.3%) in 2030, compared to the business-as-usual case, if the state were to adopt the Clean Power Plan pathway described above. (See figure at right.)
- In addition, commercial owners and occupants would reduce their natural gas bills by an average of **\$348.7 million** (7.1%) in 2030.
- Under business-as-usual (without new regulations), the electricity bills of commercial building owners and occupants in Pennsylvania would rise by about **22.7%** over the next 15 years.
- If Pennsylvania's leaders adopt the least-cost clean power pathway, Pennsylvania's commercial electricity bills would increase very little, if at all, while its CO₂ emissions would be cut significantly.
- Energy bill savings are expected to be greatest for **retail** and **office** buildings. In Pennsylvania it is estimated that these building space owners would cut their electricity costs by **\$263 million** and **\$182 million** respectively in 2030.



- Occupants and owners of other building type ranging from **education** to **food** and **lodging** would also save significantly on their energy bills. (See figure below.)



(The numbers above the bars represent the potential savings in \$2013 dollars, calculated as the difference between projected business-as-usual bills and Clean Power Pathway bills.)

The natural gas savings result primarily from a shift to electric heating and cooling systems in commercial buildings, triggered by the accelerated deployment of innovative air source heat pumps. With a focus on energy efficiency, these novel systems will replace the less efficient units that are commonly used on the rooftops of office buildings, schools, restaurants and big-box stores, tackling one of the most rapidly growing energy uses in the United States – air conditioning. Other policies include stricter building codes and strengthened equipment standards. These would produce a significant reduction in energy bills and carbon emissions.

Analysis based on Marilyn Brown, Alexander Smith, and Gyungwon Kim, 2016. *The Clean Power Plan and Beyond*, Georgia Institute of Technology, School of Public Policy Working Paper #89 (June).