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Testimony on
"EPA's Regulatory Threat to Affordable Energy: The Perspective of Coal Communities"

House Committee on Energy and Commerce
Subcommittee on Oversight and Investigations
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Good afternoon Chairman Murphy, ranking member DeGette and the members of the Energy and Commerce Committee's Subcommittee on Oversight and Investigations. I am Daniel J. Weiss, a Senior Fellow at the Center for American Progress, a nonprofit organization dedicated to progressive values and ideas.

The topic of today's hearing is "EPA's Regulatory Threat to Affordable Energy: The Perspective of Coal Communities."

Coal is an important part of the story of Pennsylvania and this nation. It helped drive the industrial revolution, powering trains and steamships. Coal powered the iron blast furnaces used to make steel and weapons during World War II. The job opportunities associated with coal mining drew immigrants from around the world with the hope that their hard work in the mines would yield a better future for their families and the nation.

The Center has great respect for the sacrifices that coal miners and their families make for this nation. The challenges they face working underground, with the fear of cave-ins, explosions and fires, all while breathing in toxic materials that blackens lungs and skin. These individuals and families deserve real solutions to the economic challenges they face today.

These economic challenges are caused by the following factors.

- Increased mechanization and efficiency in coal production led to a significant decrease in the coal-based workforce.
- Coal's impact on public health has been widely recognized as hazardous and expensive.
- Coal competitiveness is declining with the advent of cleaner, less expensive natural gas, efficiency, and renewable energy.
- The evidence shows that there is a positive economic return on pollution regulations, and fewer job losses than predicted.

Advances in technology, market prices, and health factors have increased the risk and price of using coal. These trends are expected to continue, requiring Congress to assist coal communities' transition to cleaner jobs. Historically, these transition costs have been lower than predicted. We ask that the members here today encourage their colleagues to help coal communities adapt to

the changing energy market with increased retirement options, job training and educational opportunities.

Coal-based employment has been decreasing due to market forces that impact production and use of coal

Over the past 100 years coal mining coal became more mechanized, increasing the productivity of each miner, and enabling coal companies to reduce their workforce. Data from the National Mining Association[1] reflects this change.

- In 1923, there were 704,793 U.S. coal miners that produced 565 million short tons of coal, with average productivity of 801 short tons of coal per miner per year.
- By 1989, one year before the Clean Air Act Amendments of 1990, the number of coal miners had been reduced by 81% from 1923 to 131,497 miners. Meanwhile coal production increased by 74% to 981 million short tons, and productivity increased by 831% to 7,457 short tons per miner per year.
- By 2010, the total number of U.S. coal miners was just over 86,000, representing an 88% drop in coal mining employment since 1923, with total production increasing by 92% since 1923, reaching 1,094 million short tons. Productivity has increased by 1,470% since 1923 with average coal production per miner per year reaching 11,780 short tons.

These productivity advances were responsible for 95 percent of job losses in coal mining according to a 2001 U.S. Environmental Protection Agency (EPA) analysis.[2]

In addition to advances in productivity, market forces in the electric power sector are driving utilities away from coal and towards other fuels for electricity generation. America's recent expansion of low-cost natural gas is a major reason for coal's reduced domestic use. At the *Wall*

[1] National Mining Association, "Trends in U.S. Coal Mining: 1923 – 2011," http://www.nma.org/pdf/c_trends_mining.pdf
[2] U.S. EPA, "Impacts of the Acid Rain Program on Coal Industry Employment," EPA 430-R-01-002, March 2001. http://www.epa.gov/airmarkets/resource/docs/coalemployment.pdf

Street Journal's ECO:nomics conference in Santa Barbara earlier this year David Crane, CEO of NRG Energy noted that "Natural gas is in the process of wiping out the coal industry."[3]

The following are just a few of the advantages that natural gas-based electricity generation enjoys.

- The price of natural gas as a fuel source for electricity generation became less expensive and more stable. The Henry Hub natural gas spot was $8.86 per million BTUs in 2008. The expansion of shale gas supplies lowered this price to $2.75 per mmBTU last year – a two-thirds price decline.[4] (see figure 1)

- The Energy Information Administration projects that proportion of coal generated electricity will be 2 percent lower in 2020 compared to 2013 under existing policies.[5]

- The U.S. had a stockpile of underutilized gas-based electricity capacity that was quickly able to capitalize on changing commodity costs.

- Natural gas-fired power plants are generally more energy efficient, thus giving them a competitive edge even when gas prices increases. The coal power plants to be retired in Pennsylvania are inefficient and old – they were built an average of 56 years ago.

- New natural gas plants are easier to site and cheaper and faster to build.

- Gas-fired power plants have greater flexibility on start-up and shut down, enhancing their grid integration and reliability value.

[3] Wall Street Journal, "Natural Gas: Killing Coal and Nuclear, and Maybe the Grid", Cassandra Steel, March 21, 2013. http://blogs.wsj.com/corporate-intelligence/2013/03/21/natural-gas-killing-coal-and-nuclear-and-maybe-the-grid/

[4] Source: U.S. Energy Information Administration, "Henry Hub Gulf Coast Natural Gas Spot Price," available at http://www.eia.gov/dnav/ng/hist/rngwhhdA.htm (last accessed October 29, 2013).

[5] Source: U.S. Energy Information Administration, "Electricity Supply, Disposition, Prices, and Emissions, Reference case," available at http://www.eia.gov/oiaf/aeo/tablebrowser/#release=AEO2013ER&subject=6-AEO2013ER&table=8-AEO2013ER&region=0-0&cases=early2013-d102312a (last accessed October 2013).

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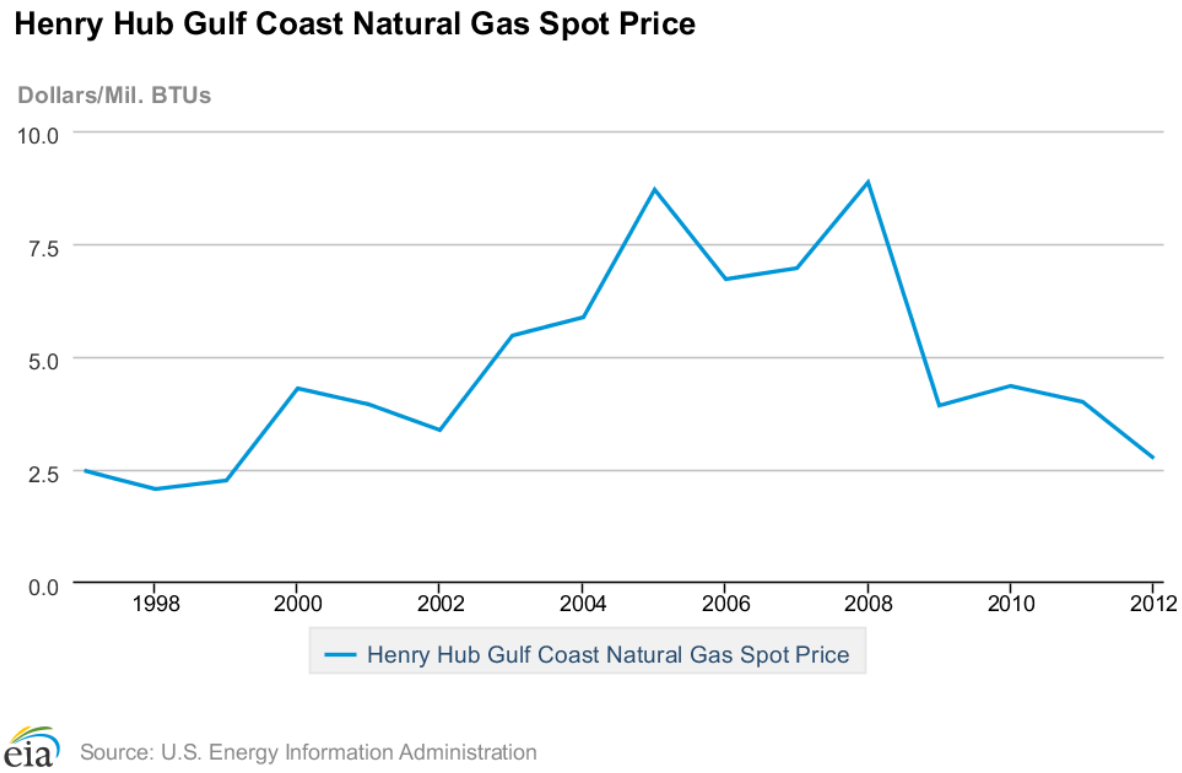
Figure 1



Coal is also getting outcompeted in the market because of its impact on public health

While the production and combustion of all fossil fuels have environmental impacts, the impact of coal use is most detrimental to the health of Pennsylvanians and other Americans. Compared to natural gas, on a pounds-per-billion BTU of energy input basis, the burning of coal releases:

- significantly greater amounts of toxic mercury pollution;
- 420% more carbon monoxide;
- 397% more nitrogen dioxides;
- almost 260,000% more sulfur dioxides,
- 39,000% more particulate matter, and

- 78% more carbon pollution.[6]

This is a staggering difference in air pollution, with real public health and economic costs.

A 2011 study published in the American Economic Review – a publication of the American Economic Association- found that the largest industrial contributor to environmental "externalities" – or side effects -- is coal-fired electricity. It is responsible for more than one-fourth of the gross external damages (GED) to the entire U.S. economy. According to the study,

> Increased mortality is by far the largest component of the GED from coal-fired facilities, explaining 94% of the damages. Most of the mortality impacts are caused by SO2 [sulfur dioxide] emissions with a smaller amount due to discharges of PM 2.5 [small particles or soot] and NOx. [nitrogen oxides][7]

A 2011 report from the American Lung Association estimated that soot pollution from power plans causes approximately 13,000 premature deaths annually.[8] A research team led by the late Harvard Medical School Professor Paul R. Epstein examined and quantified the full lifecycle costs of coal and found:

> Each stage in the life cycle of coal—extraction, transport, processing, and combustion—generates a waste stream and carries multiple hazards for health and the environment. These costs are external to the coal industry and are thus often considered "externalities."
>
> We estimate that the life cycle effects of coal and the waste stream generated are costing the U.S. public a third to over one-half of a trillion dollars annually. Many of these so-called externalities are, moreover, cumulative. Accounting for the damages conservatively doubles to triples the price of electricity from coal per kWh generated.[9]

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[6] U.S. Energy Information Agency. "Natural Gas 1998: Issues and Trends." DOE/EIA-0560(98), April 1999. http://www.eia.gov/pub/oil_gas/natural_gas/analysis_publications/natural_gas_1998_issues_trends/pdf/it98.pdf

[7] Muller, Nicholas Z., Robert Mendelsohn, and William Nordhaus. 2011. "Environmental Accounting for Pollution in the United States Economy." *American Economic Review*, 101(5): 1649-75. Quote on page 1669. http://pubs.aeaweb.org/doi/pdfplus/10.1257/aer.101.5.1649

[8] American Lung Association, "Toxic Air: Time to Clean Up Coal-Fired Power Plants." March 2011, http://www.lung.org/about-us/our-impact/top-stories/toxic-air-coal-fired-power-plants.html

[9] Paul R. Epstein, Jonathan J. Buonocore, Kevin Eckerle, Michael Hendryx, Benjamin M. Stout III, Richard Heinberg, Richard W. Clapp, Beverly May, Nancy L. Reinhart, Melissa M. Ahern, Samir K. Doshi, and Leslie Glustrom. 2011. Full cost accounting for the life cycle of coal in "Ecological Economics Reviews." Robert Costanza, Karin Limburg & Ida Kubiszewski, Eds. Ann. N.Y. Acad. Sci. 1219: 73–98. http://solar.gwu.edu/index_files/Resources_files/epstein_full%20cost%20of%20coal.pdf

Coal fired electricity is only cheap if one ignores the costs of damage to human health.

Pennsylvania suffers from coal-fired electricity related air pollution. The American Lung Association's "State of the Air Report 2013 found significant health threats there posed by it.

- Nationally, Pittsburgh is the 8th most soot polluted city, and 24th for ozone smog pollution.
- The Pittsburgh-New Castle PA metropolitan area has 2.5 million people who breathe this air, including nearly 49,000 children with asthma who can have asthma attacks triggered by breathing air pollution.
- Harrisburg ranked 19th national for its soot pollution.
- Harrisburg has more than 687,000 people, including more than 186,000 suffers from cardiovascular disease that risk heart attacks by breathing this pollution.
- Philadelphia was 10th most polluted with soot, and 20th with ozone smog.
- Allentown ranked 14th most polluted for year-round soot levels.[10]

These sobering facts illustrate a clear market failure – the cost of coal-fired power production does not reflect its true cost to our health or the economy. Economists would say that coal is currently underpriced.

In spite of subsidies, coal competitiveness is declining

The economic hardship that coal communities face is directly related to coal's inability to cleanly and economically compete with natural gas and other cleaner sources of electricity. This occurs despite ample federal and state subsidies for the coal industry. A 2013 report by the Environmental Law Institute found that the federal government provided over $25 billion in financial support for coal production, transportation, use and waste disposal between 2002-2010, with over $16 billion of these benefits due to preferential tax treatment of coal.[11]

[10] American Lung Association. "State of the Air 2013," 2013, http://www.lung.org/associations/states/california/assets/pdfs/sota-2013/sota-2013-full-report.pdf
[11] Environmental Law Institute, "Estimating U.S. Government Spending on Coal: 2002-2010", September 2013, http://www.elistore.org/reports_detail.asp?ID=11462

In Pennsylvania, the purchase and use of coal is exempted from state sales tax, a subsidy valued at almost $120 million during the 12 month, 2011-2012 fiscal year.[12] The purchase of equipment, machinery, parts, foundations and supplies used directly in mining are also exempt from Pennsylvania sales tax, at a cost unknown to the taxpayer.

Public health regulations are historically less costly than expected

In spite of this taxpayer support for the industry, coal is becoming less competitive in the markets and the public concerns about its harm to our health and the economy. EPA's efforts to reduce mercury, carcinogenic and carbon air pollution, hazardous wastes, and water contamination are critical to the health of Pennsylvanians and all Americans.

EPA's safeguards from mercury, toxics, and carbon pollution will internalize some costs for coal fired electricity, but the costs of these rules are far less than the value of the benefits to the public. For example, EPA estimates that for every dollar spent to reduce mercury and other toxic pollutants, Americans receive $3-9 in health benefits in return.[13]

The actual costs of EPA environmental rules have historically been much less than what industry or EPA projected. For instance, the Edison Electrical Institute estimated that EPA's acid rain reduction program to reduce sulfur and nitrogen pollution would cost ratepayers $7.1 billion annually. The Office of Management and Budget evaluated the program in 2003 and found that actual costs were between $1.1 and $1.3 billion per year, with the benefits of the program valued at $118 - $177 billion annually[14] – a return on investment that would make Warren Buffet proud.

In addition, net job loss in the coal sector from the acid rain program implementation ended up to be half of what was initially projected by EPA.[15] The 2001 study predicted that "by 2010, approximately 50,000 coal miner jobs are projected to remain."[16] The Mine Safety and Health

[12] Citizens for Pennsylvania's Future, "Pennsylvania Fossil Fuel Subsidies: An Overview," Christina Simeone, December 2011. http://www.pennfuture.org/UserFiles/File/FactSheets/Report_FossilFuelSubsidy_201112.pdf
[13] U.S. EPA, "EPA Fact Sheet: Mercury and Air Toxics Standards," December 2011, http://www.epa.gov/mats/pdfs/20111221MATSimpactsfs.pdf
[14] The Pew Environment Group, "Industry Opposition to Government Regulation", October 2010. http://www.pewenvironment.org/uploadedFiles/PEG/Publications/Fact_Sheet/Industry%20Clean%20Energy%20Factsheet.pdf
[15] U.S. EPA, "Impacts of the Acid Rain Program on Coal Industry Employment", EPA 430-R-01-002, March 2001. http://www.epa.gov/airmarkets/resource/docs/coalemployment.pdf
[16] Ibid

Administration reported that there were over 89,000 miners in 2010 – 68 percent more than the 50,000 EPA predicted in 2001.[17]

There is another huge cost of ignoring air pollution from coal-fired power plants. Along with additional death, illnesses, and lost productivity, the cost of climate-change related economic disruption continues to grow. For instance, a CAP analysis estimated that taxpayers spent $136 billion on the clean-up of the most severe climate related extreme weather events in FY 2011-13.[18] This was $400 per household per year.

The disaster relief for Superstorm Sandy, which hit New Jersey and New York one year ago today, cost more than $60 billion in taxpayer dollars alone. According to a peer reviewed paper authored by researchers from the National Oceanic and Atmospheric Administration (NOAA) and National Center for Atmospheric Research, there is increasing trends in both the annual frequency of billion-dollar weather and climate disaster events and in the annual aggregate loss from these events. Their study examined data from 1980 – 2011 found this trend amounts to a 5 percent per year increase in the frequency of billion-dollar disasters, and they further believe that this is likely an underestimation of average loss.[19]

Solutions

Any job loss has real impacts on families and communities. The federal government has an important role to play in working with the affected states to minimize the impacts of these changes. We would like to work with the chairman and other members of the subcommittee to develop strategies and programs to help miners and others displaced from their jobs as the result of changes in our energy use. We would respectfully suggest this subcommittee consider two specific actions to increase opportunities for coal communities.

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[17] U.S. Mine Safety and Health Administration. "Number of Operator Injuries, Injury-Incidence Rates, Average Number of Employees, Employee Hours, and Production by Type of Coal Mined and Work Location." U.S. Department of Labor. January-December 2010. http://www.msha.gov/STATS/PART50/WQ/2010/table1.pdf

[18] Daniel J. Weiss and Jackie Weidman, "Disastrous Spending: Federal Disaster-Relief Expenditures Rise amid More Extreme Weather," Center for American Progress, April 29, 2013, available at http://www.americanprogress.org/issues/green/report/2013/04/29/61633/disastrous-spending-federal-disaster-relief-expenditures-rise-amid-more-extreme-weather/

[19] Smith, A., and R. Katz, 2013: U.S. Billion-dollar Weather and Climate Disasters: Data Sources, Trends, Accuracy and Biases. *Natural Hazards*, DOI 10.1007/s11069-013-0566-5. http://www1.ncdc.noaa.gov/pub/data/papers/smith-and-katz-2013.pdf

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First, reduce investment uncertainty created by regulatory confusion. By allowing EPA to move forward with common sense rules to protect public health and the climate, companies will have the certainty they need to make pollution control investments, strategically plan for new business opportunities in cleaner energy technologies, and develop new employment opportunities for displaced workers.

Pennsylvania is the fourth largest coal producer in the nation and slightly less than half of the electricity Pennsylvania generates comes from coal-fired power plants. However, Pennsylvania employed only 8,665 people in direct coal mining jobs in 2011.[20] In contrast, clean energy provides more opportunities. For example, a 2010 report from the Pennsylvania Department of Labor and Industry found that there were:

- 65,000 jobs in the energy efficiency sector;
- 41,000 jobs in renewable energy and resource sustainability;
- over 30,000 jobs in pollution prevention;
- almost 24,000 jobs in environmental training and compliance;
- 11,600 jobs in environmental cleanup; and,
- 10,522 job in emissions reduction.[21]

All told, this is over 183,000 direct jobs in the clean energy and environmental sustainability sectors. Moreover, the clean energy and environmental sustainability sectors are growing. This is where job opportunities for coal communities could be found.

Second, develop a comprehensive strategy to assist affected communities to help them identify and pursue pathways to a prosperous future. One important change would allow early vesting in retirement and pension plans for coal workers near retirement age. For younger workers, education and job training should be offered. Tile XI, Section 1101 of the Clean Air Act Amendments of 1990 amended the Job Training Partnership Act to create the "Clean Air

[20] U.S. EIA, Table 21. Coal Productivity by State and Mine Type, 2011, 2010. http://www.eia.gov/coal/annual/pdf/table21.pdf

[21] PA Department of Labor and Industry, "The Pennsylvania Green Jobs Survey Report," December 2010 http://www.portal.state.pa.us/portal/server.pt?open=space&name=Dir&psname=SearchResult&psid=7&cached=true&in_hi_userid=2&control=OpenSubFolder&subfolderID=134700&DirMode=1

Employment Transition Assistance Program" (CAETAP). From 1992-1996, the program invested $83 million to provide training and readjustment aid to 6,366 workers dislocated as a result of their employer's compliance with the Act.[22] This included investing $1.4 million to aid 543 workers in Pennsylvania.[23] As part of a broader strategy, this committee could consider providing greater resources to this program in order to help impacted coal communities.

In Pennsylvania, we have seen communities revitalized through cleaner energy opportunities. Towns like Ebensburg, Pennsylvania – which at was hard-hit by the decline of the U.S. steel industry - saw a resurgence after the Pennsylvania legislature passed a law to promote renewable energy, attracting foreign investors to develop a wind turbine manufacturing plant there.

There are also new job opportunities in Pennsylvania in the natural gas development sector. Rather than importing workers from other states to develop Pennsylvania's shale gas resource, as was done in the early stages of Marcellus Shale development, gas companies are trying to train and develop more local talent[24] in areas such as drilling, heavy equipment operators, general laborers, and commercial truck drivers.

Across the country in Washington State, environmentalists and the owners of the Centralia coal power plant worked together to develop a staged shut-down plan where the coal plants would be taken off line over time, allowing the plant's 250 employees time to transition to other employment. TransAlta, the coal plant owner, also contributed $55 million to help the region diversify its job base and create new opportunities for its workers, with $30 million for a community investment fund for energy efficiency and $25 million to support innovative energy technologies.[25] Coal workers are hardworking, and with the right training and education, they can take advantage of job opportunities in other energy sectors in Pennsylvania.

Many American industries have developed, grown and contracted, with significant consequences for individuals, communities and the economy. Examples range from steel production and auto manufacturing, to video rental stores, photofinishing, newspaper publishing, and more. Thankfully, the ingenuity and entrepreneurial spirit of America always finds new opportunities

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[22] U.S. EPA, "Impacts of the Acid Rain Program on Coal Industry Employment", EPA 430-R-01-002, March 2001 http://www.epa.gov/airmarkets/resource/docs/coalemployment.pdf

[23] Ibid.

[24] American Natural Gas Alliance. "Workforce Development in the Natural Gas Industry." http://www.anga.us/media/content/F7D1441A-09A5-D06A-9EC93BBE46772E12/files/workforce%20development%20in%20the%20natural%20gas%20industry.pdf

[25] Sierra Club, "Kick Coal, Save Jobs Right Now", http://www.sierraclub.org/sierra/201201/kick-coal-save-jobs.aspx

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to transform, prosper and profit. We believe coal communities should receive federal assistance that will empower them to take advantage of growth opportunities that will enable long-term job security. From our perspective, this means understanding the limitations of what the coal sector will offer in the future and providing resource to help these communities explore more attractive opportunities.

Thank you for the opportunity to testify today. I will be happy to answer any questions you may have.