



## NATIONAL COAL ADVISORY – JANUARY 2014

### ELECTRICITY

#### THE 2<sup>ND</sup> GREATEST INVENTION SINCE THE WHEEL

The Atlantic magazine's November 2013 issue featured a James Fallows article on "The 50 Greatest Breakthroughs Since the Wheel" in which a panel of scientists, historians and technologists ranked the top innovations since the wheel. Electricity ranked second.

Fallows included electricity among the category of innovations "that are integral to the physical and operating infrastructure of the modern world." Yet the benefits of electricity extend beyond our physical infrastructure, beyond providing an ability for us to air condition our homes (#44).

Electricity is also a major contributor to many of Fallows' other categories of innovations such as:

- Innovations that expand the human intellect
- Innovations that enabled the Industrial Revolution
- Innovations that allow real-time communications
- Innovations extending life

The necessity and utility of electricity for innovations within each of these categories is self-evident. No personal computers (#16), the Internet (#9) or semiconductor electronics (#4) without electricity. No industrial steelmaking (#19) or refining of oil (#35) without electricity. No Internet (#9), telephone (#24) or television (#45) without electricity. No life-extending refrigeration (#13) without electricity.

In fact, in ranking electricity as the second greatest breakthrough since the wheel, Fallows noted ~ "And then there was light – and Nos. 4, 9, 16, 24, 44, 45 and most of the rest of modern life."



An underlying factor in all the innovations addressed in *The Atlantic* article is the contributions made toward the quality of life ~ their ability to elevate the human condition. Here, again, the benefits of electricity cannot be understated.

Coal's role in providing affordable, reliable and abundant electric power has been well documented by the National Coal Council in its many reports to the Secretary of Energy. The beneficial electricification of coal opens the door to utilizing America's most valuable resource to enhance the life of our citizens as well as our global neighbors.

The International Energy Agency (IEA) recently documented the

expanding role of coal in meeting the energy needs of 600 million people in ASEAN in which 7 of the 10 nations represented have a Human Development Index of less than 0.7 compared to .94 in the U.S. and .92 in Germany. In ASEAN, 134

million people have no electricity and 184 million do not have improved sanitation.

For these folks, the post-wheel breakthroughs afforded by electricity and its many follow-on benefits are just beginning to be realized. Given that the Asia Pacific region is home to 31% of the world's coal, and just 3% of its oil and 8% of its natural gas, it seems apparent that innovations will stem from electricification of coal.

You can continue to read all about those developments in *The Atlantic* and elsewhere, compliments of the #1 innovation ~ the printing press. If you want to read about it at night, you'll need that #2 innovation.

### NCC LEADERSHIP

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#### Jeff Wallace, NCC Vice Chair

Vice President, Southern Co

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Senior VP, Peabody Energy

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Pam Martin, Executive Assistant

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**National Coal Council**

[NationalCoalCouncil.org](http://NationalCoalCouncil.org)

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Washington, DC 20036

(202) 223-1191

## CTx (Coal to x)

### The Value of Coal Conversion

Join us for a one-day forum highlighting existing and prospective technologies and the economic opportunities available through coal conversion.

**February 26<sup>th</sup>, 2014**  
**United States Energy Association**  
**Executive Conference Room**  
**1300 Pennsylvania Avenue NW**  
**Ste. 550 ~ Washington, DC**

*Coal produces 40% of electricity in the U.S. Its value, however, extends beyond power generation. Coal is a versatile resource that can be gasified and converted into a vast array of valuable products such as:*

*Transportation Fuels*  
*Urea & Other Fertilizers*  
*Chemicals*  
*Industrial Gases*  
*Hydrogen*  
*Pipeline Synthetic Natural Gas*

8-9 am	Registration & Breakfast
9-9:45 am	Keynote Address
10-11:30 am	Economics & Policy
11:45 am-1 pm	Luncheon Keynote Address
1:15-2:45 pm	University R&D Initiatives
3-4:30 pm	Industry Initiatives
4:30 pm	Adjourn

*For further information*  
**Janet Gellici**

[jgellici@NCC1.org](mailto:jgellici@NCC1.org) ~ 202-223-1191

**\*Widely Attended Event\***



**The National Coal Council**  
*Power for America from America*

In Association With



**THE CATHOLIC UNIVERSITY OF AMERICA**  
*Institute for Policy Research*  
*& Catholic Studies*

### Confirmed Speakers

#### LUNCHEON KEYNOTE

Dr. Holly Krutka, Executive Editor  
 Cornerstone Magazine  
 World Coal Association & Shenhua  
**"The Successful Evolution of  
 CTX Technology in China"**

Dr. Robert Freerks  
 Emerging Fuels Technology

Mark J. Riedy  
 Kilpatrick Townsend & Stockton

Dick Bajura  
 West Virginia University

Scott Montgomery  
 Catholic University of America

Andrew Tong  
 The Ohio State University

Rodney Andrews  
 University of Kentucky

Maohong Fan  
 University of Wyoming

Robert Kelly  
 DKRW Energy LLC

David Piejak  
 LP Amina

Randall Harris  
 Adams Fork Energy Project

Sasha Mackler  
 Texas Clean Energy Project

Carrie Lalou  
 Synthesis Energy Systems

### CTx Forum Agenda

**There is no charge to attend.**  
**Pre-registration is required.**

**[CTx Forum Registration](#)**

## WHO KNEW?\*

### UK Does Energy Research in a Big Way

In the Welsh language, "caer" means fortress, fort, citadel or castle. At the University of Kentucky's Center for Applied Energy Research, CAER is indeed a stronghold and refuge for energy research.

CAER was established in 1972, even before the U.S. Department of Energy was created (1977). The variety and depth of initiatives underway at UK is impressive to say the least. What's even more impressive is CAER's stated mission, which reads in part:

*The world employs a mix of energy resources - oil and gas, coal, sun, wind, hydro, geothermal, biomass, and nuclear. We harness, burn, produce heat and electricity, liquid fuels, chemicals and gases from these energy resources. In turn, they contribute to our quality of life, health, nutrition, comfort, convenience, leisure, transportation, communication and productivity.*

*Among our most important aims is to assure that the benefits of investigations, research and study are applied, made available to the public and brought into the widest possible use.*

*The Center, through its technology innovation and service to the community, contributes to improving the lives of Kentuckians by creating jobs and economic opportunities; by sustaining vital industries and public services; and by improving energy efficiency and protecting the environment.*



<http://www.caer.uky.edu/>

Among the many coal-associated efforts underway at CAER are those related to coal conversion, including coal-to-liquids and coal-to-chemicals via the Fischer-Tropsch process. We're delighted that NCC Member Rodney Andrews, Director of CAER will be presenting at our February 26<sup>th</sup> Coal-to-X: Coal Conversion Forum. I can't even begin to describe or cover the mind-boggling number of coal research projects underway at CAER. Fortunately, I know that Dr. Andrews can.



\*A regularly featured column on industry & university initiatives in support of clean coal technology development & commercialization.

## 2014 Membership Contributions & Chair's Advisory Committee

### Your Support is Appreciated & Valued

It's that time of year again ~ time to show your support for the good work of the National Coal Council through your membership contributions. As is the case with many other organizations in the coal industry these days, NCC has struggled financially and experienced a significant shortfall in 2013. We're working hard to curtail expenses and to identify opportunities outside of our "dues" revenue to raise funds.

Membership contributions for 2014 are due this month. Invoices went out in November; if you haven't received yours, please let me know ([jgellici@NCC1.org](mailto:jgellici@NCC1.org)). Thank you to all who've already submitted their contributions this year. There are a number of other ways you can also support the NCC.

**Join a Committee** ~ We welcome your active participation in our Committees. Consider joining the Coal Policy Committee, the Communications Committee, the Membership Nominating Committee or the NCC Program Development Committee which is tasked with identifying and securing speakers for our biannual events.

**Sponsor an Event** ~ We'll be celebrating our 30<sup>th</sup> Anniversary at our May 2014 meeting. The traditional 30<sup>th</sup> Anniversary symbol is a pearl ~ we've designed a variety of pearl sponsorships for those wishing to contribute to our celebration, ranging from \$1,000 to \$10,000.

**Join the Chair's Advisory Committee** ~ Membership in the Chair's Advisory Committee (CAC) is open to all levels of NCC members who elect to double their baseline dues support for the Council. CAC members are invited to participate in special events and activities, including NCC, Inc.-hosted Executive Roundtable Sessions in which CAC members meet in small group discussions with key energy industry stakeholders. These invitation-only Roundtables are hosted in conjunction with each biannual meeting of the NCC, Inc. in Washington, DC. CAC members also receive special recognition at NCC events and in NCC publications/website. We invite you to join the following companies in their CAC support for NCC.

**THANK YOU 2014 CHAIR'S ADVISORY COMMITTEE MEMBERS!  
ADA-ES, Peabody Energy, PPL EnergyPlus & Southern Company**

## NCC REPORT FOCUS

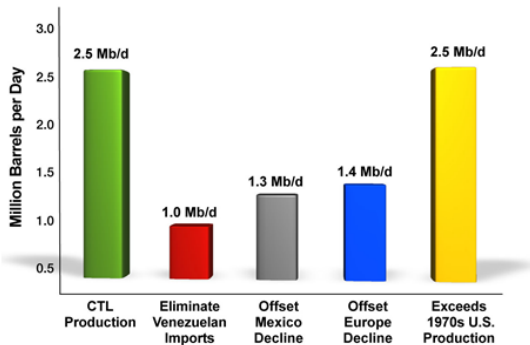
Throughout its 30 year history, the NCC has prepared more than 30 studies for the U.S. Secretary of Energy. This section of the National Coal Advisory features highlights from NCC studies of relevance to current industry and public policy

### The Value of Coal Conversion

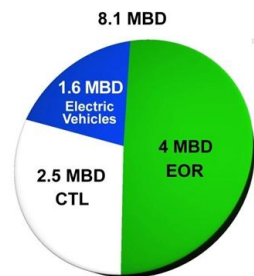
#### COAL: America's Energy Future

In March 2006, at the request of Energy Secretary Samuel Bodman, the NCC published a report identifying the challenges and opportunities of more fully exploring our domestic coal resources to meet the nation's future energy needs. The report included findings and recommendations that would use technology to leverage our country's extensive coal assets and reduce dependence on imported energy. As our nation moves toward assuming a greater role in supplying the energy needs of the world, it remains important for us to ensure our economic, energy and national security needs through the use of our abundant and affordable domestic resources.

The diversity of coal offers an opportunity for the U.S. to secure its needs for electricity, industrial gas, urea/fertilizers, chemicals, transportation fuels, hydrogen and pipeline synthetic natural gas. Among the key findings of the 2006 report: "Application of coal-to-liquids technologies would move the U.S. toward greater energy security and relieve cost and supply pressures on transportation fuels by producing 2.6 MMbbl/d of liquids. These steps would enhance U.S. oil supply by 10% and utilize an additional 475 million tons of coal per year."



The report identified additional benefits associated with using captured CO2 for Enhanced Oil Recovery (EOR) applications noting that "One promising carbon management opportunity is enhanced oil recovery, which could potentially led to production of an additional 2 to 3 million barrels of oil per day, assuming a technically recoverable reserve base of up to 89 billion barrels in 10 basins."



What Coal Conversion can Do

The diversity of our nation's coal resources continue to provide our nation with coveted options for energy, economic and national security.

## COAL RESOURCES

Department of Energy  
[www.doe.gov](http://www.doe.gov)  
 Office of Fossil Energy

National Energy Technology Laboratory  
[www.netl.doe.gov](http://www.netl.doe.gov)  
[Coal & Power Systems](#)

Final Advanced Fossil Energy Projects Solicitation \$8 Billion  
[DOE Loan Programs Office](#)

EIA Annual Energy Outlook  
[AEO 2014 Early Release December 2013](#)

EPA Final GHG Reg for New Fossil Power Plants  
[Federal Register Notice GHG Standards](#)

Europe's Most Efficient Coal Plant Comes on Line  
[Power Magazine Dec 2013](#)

U.S. Utilities Burn More Coal  
[Reuters December 2013](#)

Murkowski Energy Exports White Paper  
[Renovating the Architecture of U.S. Energy Exports](#)

World Coal Association  
[New Series Coal Fact Sheets](#)

Bipartisan Policy Center Webcast December 2013  
[GHG Regulation of Existing Power Plants](#)

Whitfield & Manchin on GHG Standards  
[Electricity Security & Affordability Act](#)

M.J. Bradley White Paper  
[Structuring Power Plant Emissions Standards Under Section 111\(d\)](#)

Cornerstone Magazine Winter 2013 ~ CCS Advancement  
[www.cornerstonemag.net](http://www.cornerstonemag.net)

"Coal's New Best Friends: An Environmentalist & Obama's EPA"  
[Forbes January 9, 2014](#)

**Gellici Speaking Engagement**  
 Gasification Technologies Council Board Meeting  
 February 2014  
<http://www.gasification.org/>

National Coal Council  
[NationalCoalCouncil.org](http://NationalCoalCouncil.org)

## NCC Member Focus

This month NCC's Member Focus features Greg Workman who for several years now has done yeoman's work for the NCC as Chair of the Finance Committee ~ a thankless task indeed ... but we'll try. Thank you Greg for your steadfast and dedicated services in crunching our numbers, monitoring the bottom line and somehow remaining gracious and in good humor throughout the process!

Gregory A. Workman is Director of Fuels for Dominion Generation and is responsible for fuel procurement for Virginia Electric and Power Company, which operates in North Carolina as Dominion North Carolina Power.

The Fuels Group handles the procurement, scheduling, transportation and inventory management for the coal, natural gas, biomass and oil consumed at the Company's power stations. Additionally, the group procures and schedules the delivery of lime, limestone, ammonia and urea used as emission reduction products at the power stations. Greg's team also has overall responsibility for Dominion's emission allowance trading and renewable energy credit programs.

Workman joined Virginia Power in 2001 and held various positions in Business Development, Power Generation Operations and Technical Services. He assumed his current role in October 2007.

Prior to joining Dominion, Greg held positions in Finance, Operations, Coal Marketing and Strategic Planning for Norfolk Southern from 1990 to 2001.

Greg has served as a member of the National Coal Council since 2007. He has testified numerous times before the Federal Energy Regulatory Commission (FERC), Virginia State Corporation Commission, North Carolina Public Utility Commission and the State of Ohio Legislature.

Greg has served as Vice President of the Philadelphia Coal Club, on the Board of Directors for the Roanoke Valley Consumers Credit Counseling Services and as a leader of the Roanoke Valley United Way Campaign. He has a degree in Business Administration from Fairmont State University and a master's degree from West Virginia University.

As is evident from the sidebar article, Greg has a significant variety and breadth of experience in both the utility and coal transportation industries ~ all of which contribute greatly to the National Coal Council's membership.



**GREGORY A.  
WORKMAN**  
DIRECTOR OF FUELS  
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**POSITIONS AT  
DOMINION GENERATION**

**DIRECTOR FUELS  
VIRGINIA POWER ENERGY  
MARKETING**

**DIRECTOR  
FUEL & ENVIRONMENTAL  
EXCELLENCE**

**ASSET MANAGER  
MERCHANT OPERATIONS**

**SR. BUSINESS DEVELOPMENT  
MGR.**

**POSITIONS AT  
NORFOLK SOUTHERN**

**MANAGER  
DOMESTIC METALLURGICAL  
COAL MARKETING**

**MANAGER  
POWER GENERATION  
STRATEGIES**

**MANAGER  
UTILITY COAL MARKETING**

**PRODUCT MANAGER**

**COST CONTROL ENGINEER**

**COST DEVELOPMENT ANALYST**

## COAL CURRENTS

Todd H. Cunningham, Contributing Editor

A brief survey of leading coal industry stories of the past month. Highlighted underlined text links to the cited articles. Right click on highlighted text and select the "Open Hyperlink" option to view the cited article.

### CLIMATE CHANGE

#### Debate Over Climate Change Expected to Intensify in 2014

The debate over climate change policy is expected to "heat up" in the coming year as major aspects of the President's climate plan come to fruition, according to the Capitol Hill newspaper *The Hill*. The Environmental Protection Agency (EPA) is expected to announce landmark final standards intended to cut carbon emissions from coal-fired power plants, the publication noted, after lawmakers and industry groups "give their two cents on the issue." Republicans will continue to denounce the Administration's "war on coal," *The Hill* said, with the Senate Environment and Public Works Committee to begin hearings on the President's climate agenda in mid-January. Separately, the newspaper rated climate change as the top energy story of 2013, beginning with its prominent mention in the President's second inaugural address.

#### Podesta's Return to White House May Elevate Climate Issue

The return of former Clinton White House chief of staff John Podesta to the Executive Mansion, where he will serve for a year as senior counselor to President Obama, is expected to further elevate the climate change issue, several publications suggested. According to a column in *The New York Times*, Podesta's main task "will be to give the Environmental Protection Agency the support it needs to devise new rules controlling greenhouse gases" from power plants, "a complex and politically fraught task." Meanwhile, *The Hill* quoted White House press secretary Jay Carney as saying Podesta will help implement "executive actions where necessary when we can't get cooperation out of Congress." While this would raise the stakes in Washington, provoking a clash with Republicans, *Bloomberg* indicated, Podesta "may find a receptive audience in the White House."

### Science Advisors

#### Question EPA's Stance on CCS Issue

The Environmental Protection Agency's (EPA) Science Advisory Board has raised questions about whether EPA appropriately reviewed the carbon capture and sequestration (CCS) issue before deciding it is commercially available for new power plants. According to *Politico*, the board has decided to send the issue back to a smaller workgroup, which will conduct informal discussions with EPA staff and report back. While EPA has said it did not rely on new science for proposals that would require CCS to cut emissions at new coal-fired power plants, *Politico* reported, some advisory board members are not sure, "and believe that the technical basis for the rule could use an independent look." Panel members were unsure of the legal boundaries of EPA's decision, the publication said, "especially whether it was proper for EPA to be forcing new technology or picking technology that was already readily available."

### ENVIRONMENTAL REGULATION

#### White House Delayed Key Rules Before 2012 Election, Newspaper Asserts

The White House "systematically delayed" enacting a series of rules on the environment and other key issues before the 2012 election to prevent them from becoming points of contention, according to an article in *The Washington Post*. Affected EPA rules included carbon dioxide limits for existing power plants and coal ash disposal, *The Post* specified. The item, based on documents and interviews with current and former Administration officials, asserted that some agency staffers were told to delay submitting proposals to the White House for up to a year to ensure they would not be issued before the election. While the Administration has contended that any delays were coincidental and made without regard to politics, the article's sources said they were in fact clearly political.

Todd H. Cunningham, who writes the "Coal Currents" column for the Council's monthly National Coal Advisory, is available for additional writing projects involving coal and other energy policy issues. For information on Todd's background and experience, see his LinkedIn profile at [www.linkedin.com](http://www.linkedin.com). To discuss your editorial needs, contact Todd via email at [tcunningham03@comcast.net](mailto:tcunningham03@comcast.net).

**Coal Currents** *(continued)***ENVIRONMENTAL REGULATION (continued)****Report Says Administration Tried to Edit Report on Regs' Job Impacts**

[The Obama Administration attempted to edit a report on stream protection regulations to lower job loss estimates](#), according to an official investigation, *The Washington Times* reported. The article cited 2011 press reports that a company had claimed the Office of Surface Mining Reclamation and Enforcement (OSM) asked it to change variables in a calculation that indicated new environmental regulations requiring 100-foot buffers around streams for mountaintop mining spoil would lead to large losses in employment – an estimated 7,000 jobs. The Interior Department inspector general's investigation confirmed OSM personnel requested a change, *The Times* said. The company refused to comply and its contract was terminated shortly thereafter, although the newspaper reported the inspector general was unable to confirm this was in direct retaliation for its refusal, nor whether the job loss estimate was accurate.

**Court Hears Arguments on EPA's Cross-State Air Pollution Rule (CSAPR)**

[The U.S. Supreme Court has heard oral arguments on the Environmental Protection Agency's Cross-State Air Pollution Rule](#), which would limit emissions of sulfur dioxide and nitrogen oxides in 28 states that blow into neighboring jurisdictions. All of the affected states are in the eastern two-thirds of the U.S. The cross-state rule was stuck down by a lower court, *Bloomberg* noted, and has never gone into effect; EPA is continuing to enforce a 2005 measure, the Clean Air Interstate Rule (CAIR), until the cross-state rule can be replaced. Fourteen states are challenging the rule, arguing that EPA did not give them a chance to put their own plans in place before imposing a nationwide standard. According to *Bloomberg*, questions and comments from the court's four Democratic appointees, at times joined by two Republicans, "hinted they might revive" one of the President's biggest air-quality efforts.

**BY THE NUMBERS****EIA Offers Range of Coal, Natural Gas Figures**

[The share of U.S. electricity generated by coal is expected to end 2013 at 39.3%, an increase from 2012's 37.4%](#) but a drop from the five-year high of 44.8% in 2010, according to the Energy Information Administration's (EIA) final *Short Term Energy Outlook* of the year. Meanwhile, the share of the nation's electricity generated by natural gas is projected to end 2013 at 27.5%, down from its all-time high of 30.3% in 2012. The nominal average coal price to the electric power industry will drop to \$2.35/MMBtu in 2013, down from \$2.40/MMBtu in 2012, while natural gas prices are expected to finish the year averaging \$3.69/MMBtu, up 34.2% from an annual average of \$2.75/MMBtu in 2012.

**States Offer Carbon-Cutting Policies for EPA Adoption**

Fifteen states have urged the EPA to adopt their policies for cutting power plants' carbon emissions as a template for future federal rules. According to a Reuters report, states such as Colorado, Illinois and Minnesota said their states had cut plants' emissions by one-fifth in the past seven years. The recommended approach? "Reducing demand for fossil generation or providing alternative, cleaner sources of supply, achieves emissions reductions far beyond the level that can be achieved by improving the operations of individual fossil plants." [They urged EPA to recognize that states start from different positions on cutting carbon, but to set equally tough final targets for all.](#) Coal-reliant states such as West Virginia differed, however, and lawmakers from states dependent on fossil fuels have accused EPA of shutting them out of public meetings to discuss the future regulations, Reuters reported.

**Federal Regulators OK BNSF Railway's Coal Loading Rules**

[BNSF Railway can require coal shippers to use certain methods to reduce the amount of coal dust lost from rail cars leaving coal mines in Montana and Wyoming](#), the federal Surface Transportation Board (STB) has decided. According to *Bloomberg Businessweek*, the regulators ruled that shippers challenging BNSF's July 2012 coal-loading rules had not shown they were unreasonable. A railway representative said the coal loading rules were based on extensive field testing and effectively address coal dust issues. However, the AP item noted, environmental groups have taken BNSF and several top coal producers to federal court, alleging violations of the Clean Water Act. The greens assert that coal trains discharge coal and other pollutants into waterways in Washington State, although a railway representative dismissed the suit as "a publicity stunt" to stop coal exports from the Northwest.

**COAL CURRENTS** (CONTINUED)**ENERGY ISSUES****Closure of Coal-Fired Plants Will Threaten Midwest's Power Supply**

The closure of coal-fired power plants due to new environmental rules and conversion to cheaper natural gas fuel "appears likely" to result in [a shortage of electricity generation](#) in the Midwest by 2016, a House Energy and Commerce Subcommittee was told. According to the BNA *Daily Report for Executives*, the oversight session coincided with a meeting of a Midwest regional grid operator working group, which found a "high probability" of a 7.5-gigawatt shortfall by the summer of that year. Acting Chairman Cheryl LaFleur of the Federal Energy Regulatory Commission (FERC) told lawmakers that the finding represents "an early warning signal ... that needs close vigilance." Subcommittee Chairman Ed Whitfield (R-KY) laid the blame for the threat on "the President's policies directly aimed at trying to bankrupt the coal industry."

**New Study Looks at Price Impact of Coal Plant Retirements**

[The retirement of coal-fired power plants could increase electricity prices](#) by \$3-4 per megawatt-hour for on-peak hours and \$1-2/MWh for off-peak hours, The Brattle Group reported. However, it added, if natural gas prices also rise, energy prices could increase by as much as \$9-11/MWh for on-peak hours and \$5-6/MWh for off-peak hours. The report, "Coal Plant Retirements -- Feedback Effects on Wholesale Electricity Prices," looked at the likely causes and magnitudes of feedback effects of coal plant retirements on short- and long-term wholesale power prices, using the PJM region as a case study. The Brattle Group expects the effects of retirements and high gas prices to reduce in force after 5 or 10 years a result of markets adding new resources.

**ON CAPITOL HILL****Battle Over EPA Carbon Emissions Reg Slows Hill Budget Talks**

"A bruising partisan battle" over the new EPA regulation intended to sharply reduce carbon dioxide emissions at new coal-fired power plants has slowed the pace of Congressional negotiations on a \$1 trillion annual spending bill, *The Fiscal Times* reported. The bill is essential to averting another government shutdown in mid-January, the publication said. It noted that House Republicans are pressing for an amendment to block or impede implementation of the EPA regulation, which would require new coal-burning plants to capture at least 40% of their carbon dioxide emissions. ["The battle over the EPA rule and its impact on the crucial spending talks underscores the continued political potency of the coal industry and its allies,"](#) *The Times* said.

**Older Coal Plants Can Be Part of Cleaner Network, Study Says**

A report by the Department of Energy's National Renewable Energy Laboratory (NREL) and Intertek has concluded that if coal-fired power plants could become more flexible, by cycling on and off and running at lower outputs, [they could be used with variable energy sources such as solar and wind and become part of a cleaner energy network.](#) According to the website *Blue and Green Tomorrow*, the report, for the 21st Century Power Partnership, acknowledged that cycling damages coal plants and impacts their life expectancy. However, it added, this impact could be minimized through the use of strategic modifications and proactive inspections. A case study in the report confirms that older coal units can be adapted to meet today's needs, one of its lead authors, NREL's Jaquelin Cochran, said.

**INTERNATIONAL INTEREST****Export-Import Bank to Restrict Financing of Coal-Fired Power Plants**

The U.S. Export-Import Bank has announced adoption of [new guidelines that restrict financing for the overseas construction of coal-fired power plants](#) unless they utilize carbon capture and storage (CCS) technology. The policy makes an exception for coal plant projects in the poorest nations, if no other economically feasible alternative exists and if the plant will use the most efficient technology available. According to *The Hill*, Ex-Im's policy change follows the Treasury Department's adoption of the President's climate plan in its work with multilateral development banks on cutting financing for coal-fired power plants overseas. Meanwhile, the European Bank for Reconstruction and Development adopted similar guidelines, saying that [it will fund coal-burning power plants only in "rare and exceptional circumstances,"](#) *Bloomberg Businessweek* reported.