NATIONAL COAL COUNCIL ~ DECEMBER 2014

NCC STUDY NEARS COMPLETION

Bridging the CCS Chasm: An Assessment of Opportunities to Advance CCS/CCUS Deployment

We're in the home stretch for completing our next study for Secretary Moniz. In late Spring 2014, the Secretary requested that the NCC "conduct a study that assesses the value of DOE's Carbon Sequestration Program … The assessment should answer the question – what is the industry's assessment of the progress made by the DOE and others regarding cost, safety and techical operation of CCS/CCUS? In other words, how does industry see and accept major technical findings from the CCS/CCUS community and how do these relate to DOE programs and investments … an assessment based on techical soundness and results to date would provide a welcome perspective from leading companies with experience in CCS/CCUS technology."

The study, "Bridging the CCS Chasm," is being chaired by **Amy Ericson, U.S. Country President, ALSTOM**; Technical Chair and principal author/editor is **Carl Bozzuto (ALSTOM Power).** Work began in earnest on the study over the summer of 2014 by lead authors **Holly Krutka (Shenhua Group), Pam Tomski (Global CCS Institute), Shannon Angielski (CURC)** and **Jeff Phillips (EPRI)** with assistance from many industry and academic experts in the field. A reivew team of nearly 50 NCC members and stakeholders was provided an opportunity to review and comment on the study earlier this month. Their comments are currently being incorporated into a penultimate document that will be submitted to the NCC Coal Policy Committee (CPC) for its review. The CPC will meet on January 14th for discussion of the study and proposed recommendations.

Following the CPC review, members of the NCC and the public will be invited to participate in a webcast meeting on January 29th. **Ericson** will present an overview of the study findings and recommendations after which NCC members will vote on whether to approve the study. Details on the January 29th webcast will be published in the Federal Register in compliance with FACA regulations. NCC members will receive details on participating in the webcast early in the New Year. As always, if you have questions, please contact **Janet Gellici at** jgellici@NCC1.org.

IMPORTANT DATES

January 14th, 2015
Coal Policy Committee

January 29th, 2015
NCC Full Council
Webcast Meeting
11 am-Noon Eastern

NCC LEADERSHIP

Jeff Wallace, NCC Chair
Vice President Fuel Procurement
Southern Company Services

Mike Durham, NCC Vice Chair
President & CEO
Advanced Emissions Solutions

Fred Palmer, Coal Policy Chair
Senior VP, Peabody Energy

Bill Brownell, Esquire
Vice Chair Coal Policy
Chair, Hunton & Williams

Executive Committee

Joe Hopf
Senior VP Fossil & Hydro
PPL Energy Plus

Clark Harrison, Sr. Mgr. Bus. Dev.
CH2M Hill

Chris Jenkins, VP Coal & Auto
CSX Transportation

Holly Krutka, Executive Editor
Shenhua Science & Technology Research Institute

John Long, COO,
Connemara Ltd.

Rich Lopriore, President
PSEG Fossil LLC

Mike Sorensen, Sr. Mgr. Fuel
Tri-State G&T

Kathy Walker, President
Elm Street Resources

Ex Officio

Joe Craft, III, President
Alliance Coal

John Eaves, NCC Chair
President & CEO, Arch Coal

Mike Mueller
VP Energy Mgt. & Trading
Ameren Missouri

Georgia Nelson, CEO
PTI Resources LLC

Finance

CHAIR ~ Gregory Workman
Director Fuels
Dominion Resources

Robert Bibb, PE
Bibb Engineers, Architects

Paul Gatzemeier, CBCC

Kathy Walton, Principal
The Basic Industries Group

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WHITE HOUSE CHRISTMAS ORNAMENT FEATURES COAL

I look forward each year around this time to buying the official White House Christmas Ornament ~ anticipating opening the box to be surprised and delighted by the latest treat from the White House Historical Association. I was especially delighted this year to see that the 2014 ornament featured a coal-powered train!

The 2014 White House Christmas ornament honors the administration of Warren G. Harding, who served as the 29th President of the U.S. from 1921 to 1923. As a young boy, Harding dreamed of being a locomotive engineer – a wish that was to come true for 51 minutes when as president, he took over the controls on the Alaskan railroad during the "Voyage of Understanding," his famous transcontinental speaking and sightseeing tour. The Presidential Special, the train that carried President Harding west at the outset of his ambitious voyage and that would tragically carry his casket back east following his sudden death, just two months later, is the inspiration for the 2014 ornament.

The locomotive is a detailed miniature replica of one of several steam-powered locomotives that pulled the Presidential Special; it is attached to the coal car that held its fuel. The last known photograph of President Harding is an image of him on the Superb shortly before his death in a San Francisco hotel on August 2, 1923. On August 3, President Harding's casket was placed on board the Superb and began a return trip to Washington, D.C., during which an estimated 3 million people paid their last respects.

For information on purchasing the ornament go to ~
http://www.whitehousehistory.org/whha_ornament/ornament.html

Happy Holidays One & All!

COAL RESOURCES

Department of Energy
www.doe.gov
Office of Fossil Energy

National Energy Technology Laboratory
www.netl.doe.gov
Coal & Power Systems

EIA Coal Data Browser
www.eia.gov/coal/data/browser

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"Professor Tribe Takes Obama to School" on EPA's Climate Rule
Wall Street Journal 12-5-14

NERC Urges EPA to Delay Clean Power Plan Deadline
Bloomberg News 11-05-14

EPA Regulation Price Tag = $680/year
PACE 11-25-14

U.S.-China Joint Climate Agreement
White House 11-11-14

NCC Member Thomas Lorenzen Comments on U.S.-China Climate Accord
C-SPAN Video 11-15-14

House Policy Paper on Coal Ash
House Energy & Commerce Committee December 2014

Cornerstone Magazine Focuses on Synergies Between Coal & Renewables
December 2014 Issue

Gellici Speaking Engagements

National Association of State Energy Officials
Washington, DC – February 5

Global CCS Institute
Washington, DC – February 5

American Coal Ash Association
Savannah - February 10

Institute for Clean Air Companies
Hilton Head – April 24

ASME Power Energy Conference
San Diego -June 30

National Coal Council
NationalCoalCouncil.org
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NCC MEMBER FOCUS

While Amy Ericson may be among the newest members of the National Coal Council (appointed May 2014), she's certainly not wasted any time diving in to support the organization with her depth of experience, knowledge and organizational skills. When she learned about the topic for the latest NCC study (CCS/CCUS RD&D), Amy said "this is important, I want to chair it."

It's been a true pleasure working with Amy on our current NCC study. Thanks for stepping up to the plate and leading by example Amy!

Amy Ericson is U.S. President of Alstom, a global leader in electric power and rail transportation technology. Amy oversees Alstom's engagement with U.S. policy stakeholders while directly supporting its pursuit of new business opportunities in the areas of thermal and renewable power generation, rail transit and electricity transmission and distribution. She is based in the company's Washington, DC U.S. country headquarters.

Most recently, Amy was responsible for Product & Platform Development for Alstom's gas turbine and plant portfolio. She has also served as Vice President for various Alstom business sectors, including Power Sector Market Communications, Product Marketing & Strategy, Strategic Operations and Strategy, Planning & Mergers/Acquisitions.

Amy has over 20 years of experience in the international energy industry, having held a variety of positions with DuPont, Exxon-Mobil, ABB and Alstom in the areas of product and business development, energy trading, production network optimization, long range planning, industrial M&A, and marketing and communications.

Amy holds a degree in Chemical Engineering (cum laude) from Pennsylvania State University and an MBA from Harvard University. Amy resides in Connecticut with her husband and six children.

AMY ERICSON
U.S. COUNTRY PRESIDENT
ALSTOM

Since the founding of its U.S. presence as Combustion Engineering in 1912, Alstom has evolved into a leading supplier of innovative and environmentally friendly technologies for power generation, transmission and rail transportation.

Whether it's helping move 10 million daily commuters in New York City or installing one of the nation's first offshore wind farms, Alstom is committed to taking on the challenges of today while developing the technologies that will benefit us in years to come.

Key Data:

- **Over 100 years of presence in the U.S.**
- **About 6,500 permanent employees**
- **Alstom equipment can be found in 1 of every 2 U.S. power plants**
- **7,000 of the country's subway and rail transit vehicles rolled off an Alstom production line**
- **Alstom technology and equipment manages 40% of all power flowing across the country's electrical grids**

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THANK YOU
CHAIR'S ADVISORY COMMITTEE MEMBERS 2014

The NCC is a self-sustaining organization that receives no funding from the federal government. To finance the activities of the Council, NCC relies on annual voluntary contributions from our members and the generosity of our sponsors. We'd like to take this opportunity to thank the 2014 members of the Chair's Advisory Committee who provided financial support above and beyond. Thank you!

Nick Akins **Mike Durham**

John Eaves **Rob Gabbard**

Joe Hopf **Rich Lopriore**

Mike Mueller **Fred Palmer**

Jeff Wallace **Kemal Williamson**

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JOIN THE CHAIR'S ADVISORY COMMITTEE 2015

The Chair's Advisory Committee is comprised of knowledgeable, committed NCC members who serve in an advisory capacity to the Council. The NCC leadership relies on CAC members for guidance and insights into opportunities for NCC to strengthen its programs, improve its management and evaluate its mission and services.

CAC members are consulted individually throughout the year and invited to participate in Executive Roundtable Sessions ~ small-group discussions with key energy industry stakeholders. CAC members receive special recognition at NCC events and in NCC communications (newsletter/website).

If you are interested in joining the NCC Chair's Advisory Committee in 2015, please contact Janet Gellici at jgellici@NCC1.org.

HOLD THE DATES 2015 SPRING COUNCIL MEETING

Please plan to join us for cherry blossom season in Washington, DC the week of April 6. We're finalizing our hotel selection and dates for the 2015 Spring Full Council Meeting (either April 7-8 or 8-9); we'll confirm with you early in the New Year. It's a lovely time to be in DC; hope you'll be able to join us!

CONTRIBUTE AN ARTICLE FOR THE NCC NEWSLETER

We invite NCC members to consider contributing a short article to the NCC newsletter. We'd welcome articles on important coal technology developments, energy economics or international coal initiatives. If you're interested in contributing, please contact Janet Gellici at jgellici@NCC1.org.

CONGRATS TO CLARK MOSELEY

NCC member Clark Moseley has been appointed as CEO of the Navajo Transitional Energy Company, a wholly-owned limited liability company of the Navajo Nation that operates the Navajo Mine located on the Navajo Nation south of Farmington, New Mexico. http://www.navajo-tec.com/
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NCC STUDY DETAIL
Reliable & Resilient: The Value of Our Existing Coal Fleet

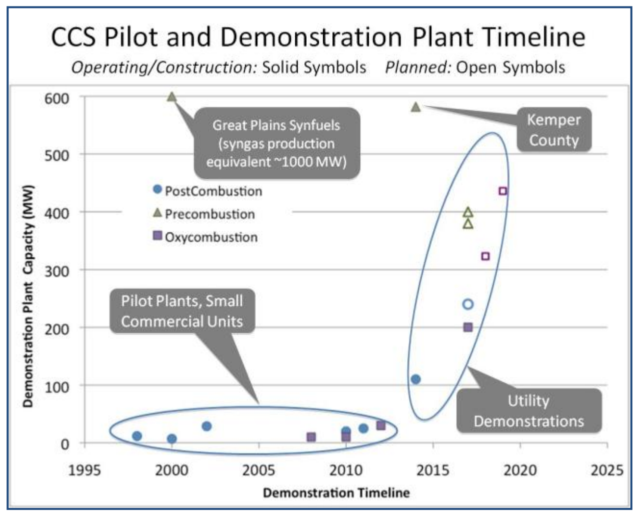
FINAL INSTALLMENT

In May 2014, NCC members approved a study the Council conducted for Secretary of Energy Moniz assessing various opportunities for enhancing the capacity, efficiency and emissions profile of the existing U.S. coal fleet. This 7-part series of articles details primary findings and recommendations from key sections of the report.

Reducing Conventional & CO_2 Emissions from the Existing Coal Fleet

The existing coal fleet is generally well equipped with systems designed to control emissions of PM, NOx and SO_2. Recently proposed or adopted regulations will lead to more stringent emission requirements aimed at reducing hazardous air pollutants (HAPs), enhancing wastewater emissions, managing solid waste management and reducing greenhouse gas (GHG) emissions.

Numerous Issues Must Be Addressed to Enhance Regulatory Compliance



- Some of the new proposed environmental regulations require compliance in a very short time frame. There is insufficient time to launch an R&D program to address these compliance issues.
- At the same time, some of the challenges posed by emerging regulations for conventional pollutants are the result of other emission control systems. New emission streams are being generated by systems employed to capture traditional HAPs.
- Proposed standards for wastewater effluents from existing coal units are not achievable under all operating conditions using existing technologies.
- Trace contaminants in solid waste streams can interfere with the ability to recycle collected materials for beneficial use.
- Commercial scale carbon capture and storage (CCS) has yet to be demonstrated due to a number of significant technical, financial, legal and regulatory challenges. The timeline for commercial-scale projects could be at least a decade from project concept to assessment of operational data.
- Retrofitting CCS to existing power plants creates challenges far beyond those that apply to greenfield CCS applications.
- DOE's RD&D program has no financial resources to move viable CCS concepts through commercial scale demonstration.

"Retrofitting existing units (or repowering them) with CCS systems poses an additional problem in that there is a limited time window for development of needed technologies."

NCC Recommendations –

DOE should lead collaborative efforts with industry to develop technologies to meet additional requirements associated with managing wastewater effluents and secondary emissions from existing coal units. The need for accelerated solutions to managing conventional pollutants requires greater emphasis on hands-on test facilities that emulate the National Carbon Capture Center design concept.

DOE should lead collaborative efforts with industry to demonstrate at commercial scale lower cost post-combustion CCS systems with less parasitic power consumption for bituminous and subbituminous coals.

A series of 7 fact sheets and a PowerPoint graphics deck (complete with explanatory notes) from the NCC study is available on the NCC website at www.NationalCoalCouncil.org under the "Information/Reports" tab.

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

U.S. Pledges $3B to Global Climate Fund, But Faces Hill Hurdle

The United States has pledged up to $3 billion to a United Nations fund intended to assist efforts to curb greenhouse gas emissions and build climate resilience worldwide. According to the White House, the Green Climate Fund (GCF) has an essential role in mobilizing private sector financing to scale up low-emission and climate-resilient investment in developing countries. It specified that this commitment to the GCF is subject to domestic procedures and strong contributions from other donors, and will not exceed 30% of total confirmed pledges. However, *National Journal* suggested, obtaining the funds from Congress in the face of Republican opposition in both chambers "might take some doing." It pointed out that incoming Senate Environment and Public Works Committee Chairman James Inhofe (R-Okla.) has vowed to fight the pledge, blasting the Administration's climate change agenda as a siphoning of taxpayer dollars away from the "real problems" facing the nation.

Negotiators Optimistic as UN Climate Summit Approaches

Diplomats gathering in Lima, Peru, for a UN meeting to negotiate the first draft of an agreement to stop the global rise of greenhouse gases "are expressing a new optimism that they may finally achieve the elusive goal," *The New York Times* reported. The optimism is based in part on the recent commitments of the U.S. and China, the world's largest greenhouse gas emitters, to cut these emissions, with UN officials believing the action "could end a longstanding impasse in the climate talks," *The Times* said. However, according to *The Guardian*, the U.S. and the European Union (EU) continue to disagree on legally binding emissions targets, with the EU supporting adoption of such targets, while the U.S. wants individual countries to be able to adjust the scale and pace of reductions. The publication indicated that the head of the EU delegation "hinted" that this could stall the negotiating process leading up to next year's meeting in Paris, where a final accord is to be signed.

World Bank Announces Restrictive Policy on Coal Projects

The World Bank, traditionally one of the world's largest funders of fossil fuel projects, has announced that in the future it will invest heavily in clean energy, funding coal projects only in "circumstances of extreme need." *The Guardian* reported that Jim Yong Kim, the bank's president, voiced alarm over research conducted for the institution which concluded that past greenhouse gas (GHG) emissions have set the stage for "unprecedented weather events." Emphasizing that unchecked emissions could not continue, Kim said that the cost of inaction would only rise. Accordingly, the bank's new lending strategy "includes everything from all sizes of hydro through to wind, to solar, to concentrated solar, to geothermal," he specified. The only exception to the lending shift will be coal projects in energy-poor countries, which Kim said could not be asked to wait until base load power needs could be met with solar and wind power, the publication specified.

China Plans to Cap Coal Consumption, Limit Role, in 2020

China plans to place a 4.2 billion ton cap on coal consumption in 2020, and to limit coal to no more than 62% of its primary energy mix by that year, as part of its effort to meet recently announced climate goals, *World Coal* reported. Energy from sources other than fossil fuels will make up 20% of the energy mix by 2030, according to *The New York Times*. *World Coal* noted that China is the world's largest consumer of coal, using as much each year as the rest of the world combined, and is the largest emitter of greenhouse gases. It cited a Reuters report that the country is expected to announce the coal cap in its next five-year plan, for 2016-2020, but has not decided whether it will be binding. China's announcement on coal use followed its recently set goal of having carbon dioxide emissions peak around 2030, and a joint pledge with the U.S. on cutting or limiting the countries' emissions of the greenhouse gas.

Coal Currents (continued)

ENVIRONMENTAL REGULATION

White House May Miss Deadline for Completing Key EPA Air Rule

The Administration may miss the deadline for completing a key component of its climate agenda, the Environmental Protection Agency's final rule governing carbon dioxide emissions from future power plants, *Politico Morning Energy* reported. While that deadline is Jan. 8, 2015, the agency hasn't yet submitted it to the White House Office of Management and Budget for review, a process that normally takes 30 to 90 days. Meanwhile, according to the recently released Unified Agenda, which lists regulations now in process, the release of EPA's final rule governing emissions from existing power plants *(see next item)* is still listed as July 2015, *Morning Energy* said. Elsewhere, the Interior Department has pushed back its proposed rule on stream buffer zones, which would put new restrictions on mountaintop removal mining, from this month until April 2015. *Politico* pointed out that "the new GOP-controlled Senate may be an obstacle" in this area; the House passed a bill last March essentially reinstating a Bush-era stream buffer rule that had been vacated by a federal judge, it noted, and unlike its predecessor, the incoming Senate may follow suit.

Study Spotlights Skyrocketing Energy Costs Under EPA Carbon Plan

The Clean Power Plan, EPA's proposed regulations for reducing carbon dioxide emissions from existing coal-fired power plants, will contribute to a nearly $300 billion increase in the cost of electricity and natural gas in 2020 compared with 2012, a new study concluded. The study, conducted by Energy Ventures Analysis for Peabody Energy, specified that electricity costs would rise by $177 billion and natural gas costs by $107 billion, with a shift in generation from coal to natural gas putting upward pressure on gas demand and prices in U.S. power markets, FierceEnergy reported. The 600-plus page proposal, which calls for emissions cuts of up to 30%, compared with 2005 levels, by 2030, and is slated to be finalized by June 2015. It drew more than 1.6 million comments by the Dec. 1 deadline, EPA reported. Janet McCabe, acting assistant administrator of EPA's Office of Air and Radiation, said that engagement with stakeholders and the public had been EPA's top priority, and this would continue following the end of the comment period.

U.S. Supreme Court to Consider Challenge to EPA Mercury Rule

The U.S. Supreme Court has agreed to consider a challenge to EPA's Mercury and Air Toxics Standard (MATS) rule, which is intended to limit emissions of mercury and other pollutants from coal-fired power plants and other facilities. The challenge was lodged by industry groups and 21 states in response to an April federal appeals court ruling upholding the rule, Reuters said; the high court will decide whether the Agency should have considered the costs of compliance, estimated at more than $9 billion annually, when deciding whether to regulate the pollutants. According to *Utility Dive*, the regulations could force utilities to close many coal-fired power plants due to these costs; it cited a Bloomberg report that MATS could apply to 1,400 generators at more than 600 large power plants. Bloomberg characterized the Supreme Court's decision as "a new setback" for environmentalists after they had prevailed in court decisions upholding EPA's authority to regulate greenhouse gas emissions and cross-state air pollution. The high court will issue its ruling by the end of June 2015.

ENERGY ISSUES

Calls for Coal Divestment Ignore Role in Meeting Energy Demands

Calls for divestment from coal fail to recognize its continuing role in meeting growing energy demand, the World Coal Association (WCA) asserted in a paper, "Divestment and the Future of Coal." The group noted that coal has accounted for nearly half the increase in global energy use during the past decade. Meanwhile, "coal's global contribution this century is comparable to the contribution of nuclear plus renewables plus oil plus natural gas combined," the WCA said. It pointed out that a BP report placed coal's share of global primary energy consumption at 30.1%, its highest since 1970. Looking ahead, the WCA noted that even under the International Energy Agency (IEA) scenario that assumes all government promises on renewables and nuclear power are implemented, coal consumption increases by about 17% through 2035 and there is little change in the global energy mix. "Coal remains about 25% or higher of primary energy demand – as it was in 1980, and as it has been for most of the past 30 years," it said.

Coal Currents (continued)

MINING & TRANSPORTATION

Rail Delivery Problems Contribute to Low Coal Supplies at Some Plants

Relatively flat rail shipments of coal in 2014, following severe depletion of supplies at power plants last winter, have resulted in below-average supplies at many plants, *oilprice.com* reported. It indicated that about 63% of coal-fired power plants have less than a 60-day supply on hand this year, up from 42% in 2013, while 23% of plants have less than a 30-day supply, up from 13% last year. "And utilities are sounding the alarm," *oilprice.com* noted. The concern is shared on Capitol Hill, where several lawmakers wrote the Surface Transportation Board (STB) to warn that low coal stockpiles are creating a dangerous situation in the event of severe winter weather, *ect.coop* reported. If problems persist, the members suggested, the STB should require all Class I carriers to submit publicly available recovery plans and monitor progress through public reporting. According to *oilprice.com*, the Energy Information Administration (EIA) said that the rail congestion is real, but should not be overstated. "Rail shipments have been relatively flat for the year, but significantly increased in the month of October," EIA reported.

Greens' Suit Seeks Environmental Review of BLM Coal Leasing Program

Two environmental groups, bankrolled by Microsoft co-founder Paul Allen, are suing the Bureau of Land Management (BLM) to compel it to review the federal coal leasing program to determine its impact on the environment and global warming.

The review should consider alternative policies that would address the full environmental effects of the federal coal-leasing program, Allen wrote in the *Huffington Post*. "This is a necessary step to wean us off fossil fuels to cleaner energy sources over the next several decades," he added. The green groups, the Western Organization of Resource Councils and Friends of the Earth, filed the suit in federal district court in Washington, D.C. According to *Bloomberg Businessweek*, coal mined under the federal program has doubled since 1990, accounting for about 40% of extraction last year, as well as about 14% of annual carbon dioxide (CO_2) emissions and 11% of GHG emissions, the complaint specified. It asserted that BLM has "unlawfully failed" to consider these environmental effects, Bloomberg added.

Gulf Ports' Coal Export Prospects Benefit From Pacific NW's Woes

While opposition from environmentalists has obstructed plans to build coal export terminals on the West Coast, in California and the Pacific Northwest, a regional expansion is occurring on the Gulf Coast, Bloomberg indicated. It pointed to a new $300 million export facility in the Mississippi River town of Darrow, La., part of an effort that will increase capacity by 66%, to 119 million metric tons, by 2017. This represents more than half the national total, Bloomberg specified. The news service noted that at least $898 million – 64% of the total that companies were planning to invest on the West Coast – is being spent on terminals on the Gulf. And while U.S. coal exports have fallen by 23% since 2012, it said, "producers are betting that foreign sales will rebound because a supply glut means their prices are now below competing cargoes from Australia and South Africa."

ON CAPITOL HILL

EPA Clean Power Plan Remains in Congressional Crosshairs

EPA's Clean Power Plan for reducing CO_2 emissions from existing coal-fired power plants remains under fire on Capitol Hill. Three senior House and Senate lawmakers wrote Federal Energy Regulatory Commission (FERC) Chairman Cheryl LaFleur to raise concerns about its implications for the reliability and adequacy of the bulk power system; they requested that FERC convene a technical conference on the reliability challenges posed by the proposal "and other pending and forthcoming federal environmental regulations." Meanwhile, Sen. James Inhofe (R-Okla.), incoming chairman of the Senate Environment and Public Works Committee, wrote EPA Administrator Gina McCarthy to warn that the prospective forced retirement of as much as 134 gigawatts of generating capacity could cripple reliability, and called for the plan's withdrawal from further consideration. Separately, Chairman Lamar Smith of the House Science Committee wrote McCarthy to warn that the plan would impact the reliability and diversity of U.S. electricity supply while doing "next to nothing to impact changes in the global climate," and demanded its abandonment.