



## NATIONAL COAL COUNCIL ~ SEPTEMBER 2015

### REGISTRATION NOW OPEN FOR NCC FALL 2015 MEETING ~ NOVEMBER 4-5 Hosted at NETL Pittsburgh

National Coal Council members and guests are invited to register for the NCC's 2015 Annual Fall Meeting program November 4-5 in Pittsburgh at <https://www.etches.com/137597>. As always, there is no charge to attend the event but registration is required.

The opening reception on November 4<sup>th</sup> (6-8 pm) will be hosted at the Crowne Plaza Pittsburgh South hotel at 164 Fort Couch Road, Pittsburgh. A block of rooms has been reserved for NCC meeting attendees at the special rate of \$119/night (rates available Nov. 4 and 5). Reservations must be made by Friday, October 16<sup>th</sup> by calling 412-833-5300. Online reservations can be made via [NCC Crowne Plaza Hotel Reservations](#).



The Full Council Meeting (8:45 am-12: 15 pm) will be hosted on November 5<sup>th</sup> at the National Energy Technology Laboratory (NETL). Transportation to NETL from the Crowne Plaza will be provided with buses departing at 7:30 am and 7:55 am; return transportation to be provided immediately following lunch (1:15 pm) and after the optional NETL tour (3:15 pm).

The program starts with a keynote presentation by [Dr. Grace M. Bochenek](#), Director of NETL, followed by a presentation by Dr. Sean Plasynski, Director of [NETL's Strategic Center for Coal](#) providing in update on NETL coal RD&D initiatives.

We'll round out our program with two additional presentations: Dr. Jared Moore, Meridian Energy will discuss "The Increasing Competitiveness of CCUS Generation Under Deep Decarbonization" and Dr. Robert Williams will address the topic of "CO<sub>2</sub> Capture Technology Cost Buydown in EOR Applications with Alternative Financing Mechanisms."

Following a networking lunch, an optional afternoon tour (1-3 pm) of the NETL facility will provide an opportunity for interaction with NETL staff working on key coal-related programs.

We have a number of sponsorship opportunities available for this special meeting. Please contact NCC Meetings Manager, Hiranthie Stanford at 202-756-4524 or [hstanford@NCC1.org](mailto:hstanford@NCC1.org) for more information.

**We look forward to seeing you in Pittsburgh in November!**  
**REGISTER TODAY!** <https://www.etches.com/137597>

#### NCC LEADERSHIP

##### Jeff Wallace, NCC Chair

VP Fuel Services (retired)  
Southern Company Services

##### Mike Durham, NCC Vice Chair

Principal, Soap Creek Energy

##### Fred Palmer, Coal Policy Chair

Exec. Advisor, Peabody Energy

##### Bill Brownell, Esquire

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Hiranthie Stanford  
Member & Meetings Manager

Hunton & Williams  
Legal Counsel

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

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## NCC LEADERSHIP MEETS WITH DEPUTY ASST. SECRETARY MOHLER

Earlier this month, NCC Chair Jeff Wallace (Southern Company), NCC Vice Chair Mike Durham (Soap Creek Energy) and NCC COO Janet Gellici met with Deputy Assistant Secretary for Clean Coal & Carbon Management David Mohler. We discussed DOE Office of Fossil Energy priorities and addressed a number of issues related to the National Coal Council.



Highlights from our discussions:

DOE is continuing to consider a number of topic ideas for future NCC white papers/studies. Topic proposals are winding their way through the DOE approval process. Stay tuned for an announcement "soon."

The NCC Charter for 2016-2017 has been submitted to DOE and is also under review. We anticipate having approval before the November expiration of our 2014-2015 charter.

Membership renewals, along with a slate of new members for the 2016-2017 term, have also been submitted to DOE and are being vetted through the appointment process.

A new DOE-NCC liaison will shortly be appointed to take over for the soon-to-be retiring Bob Wright.

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### NCC Social Media ~ A Little Help Please

We need your help with

[www.facebook.com/NationalCoalCouncil](http://www.facebook.com/NationalCoalCouncil)

- On Facebook, please "Like" the NCC page.
- Share important coal industry events and articles to the NCC page.
- Comment on NCC posts.

We appreciate your help in sharing the good work of the NCC through Facebook.



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### Thank You Chair's Advisory Council Members!

The support of the following companies as members of the Chair's Advisory Council contribute significantly to the ability of the National Coal Council to perform its work for the Secretary of Energy.

We couldn't do what we do without them ~ thank you one and all!

**Advanced Emissions Solutions**  
**Ameren Missouri**  
**Arch Coal**  
**BNSF Railway**  
**Clean Coal Solutions**

**Dominion Energy**  
**Jupiter Oxygen**  
**Peabody Energy**  
**PSEG**  
**Southern Company**  
**Tri-State G&T**

#### COAL RESOURCES

U.S. 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](#)

EIA Coal Data Browser  
[www.eia.gov/coal/data/browser](http://www.eia.gov/coal/data/browser)

ACC's Betsy Monseu on Coal's Place in the Energy & Electricity Space  
[Guest Editorial - The Electricity Journal July 2015](#)

A Simple Tale About Switching to Renewable Power: Requirements & Consequences  
[Watts Up With That Blog - August 2015](#)

The Costs of CCS and Other Low-Carbon Technologies: 2015 Update  
[Global CCS Institute July 2015](#)

The Obama-Clinton One-Two Blackout  
[Alex Epstein Forbes Blog August 2015](#)

Michigan v. EPA: Costs & Benefits Matter  
[RPC Senate July 2015](#)

Federal District Court Blocks Water Rule  
[RPC Senate August 2015](#)

U.S. Energy Secretary Ernest Moniz: A Cabinet star is born  
[Boston Globe July 2015](#)

**Gellici Speaking Engagements**  
[MIT Carbon Sequestration Forum](#)

Cambridge, MA – Oct. 21-22  
[Carbon Management Technology Conference](#)  
 Houston – Nov. 17-19

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

## NCC Member Focus

Chris Curfman was appointed to the National Coal Council in 2005 and has been a dedicated supporter of NCC representing the vital global mining equipment sector of our business. Thank you, Chris, for your continued service!

Christopher C. Curfman serves as President of Sales & Support for Caterpillar's Global Mining Division and as Caterpillar's Vice President for the Mining Sales & Support Division in Oak Creek, Wisconsin. He oversees a team of general managers with broad, regional commercial responsibility.

Chris began his career as a sales coordinator for Wallace Machinery, then a Cat dealer in Oxnard, California. He went on to a 15-year career at Deere & Company beginning in 1979, starting as a machine sales representative in Texas. He later became the president/general manager of Equipment Remarketing Services based in Moline, Illinois.

Chris joined Caterpillar in 1994, serving as the rental and used equipment/attachment manager for North America. In 1999, Chris became the managing director of Caterpillar of Australia Ltd., based in Melbourne. In 2001, he became managing director of Marketing for Caterpillar's Asia Pacific Division at its headquarters in Singapore. In 2004, Chris became VP of the Global Mining Division.

Chris graduated from Northwestern University with a Bachelor of Science degree in Education in 1975. He completed certificate programs in accounting and finance from the Wharton School of the University of Pennsylvania in 1987 and a three-year Executive Program from Louisiana State University in 1991. In 2002, Chris completed the Stanford Graduate School of Business Executive Program.



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# >> FOSSIL FORWARD

## Revitalizing CCS: Bringing Scale & Speed to CCS Deployment

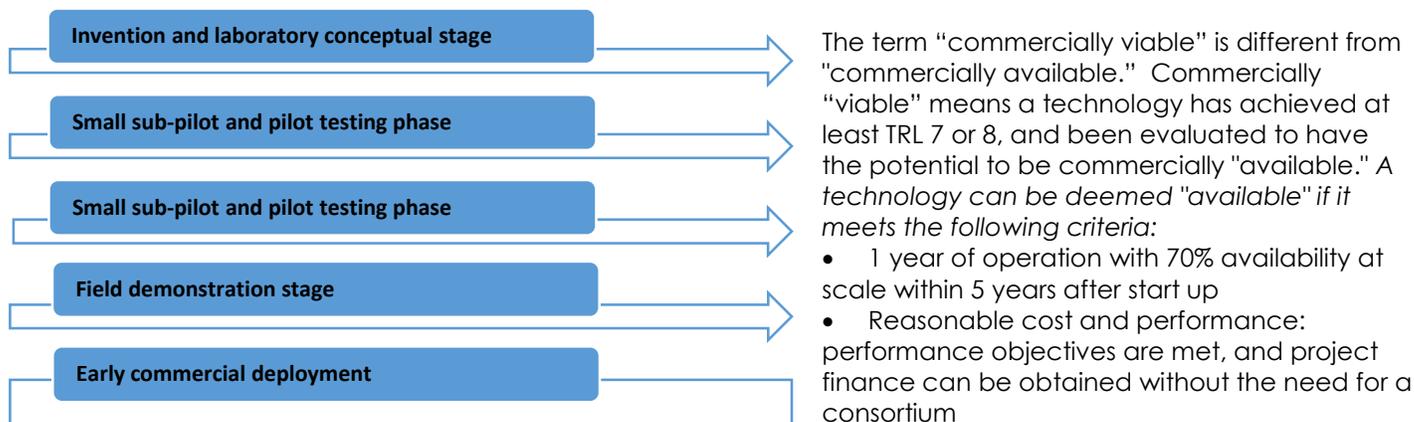
In January 2015, NCC members approved a study the Council conducted for the Secretary of Energy assessing the value of the Department of Energy's Carbon Sequestration Program. This series of newsletter articles details primary findings/recommendations from the report.

### CCS/CCUS Deployment Challenges

**Scale of CO<sub>2</sub> Capture and Utilization.** The capture, storage and/or utilization of CO<sub>2</sub> on a global basis will entail enormous challenges at the scale at which technologies need to be deployed to mitigate these emissions.

- Global CO<sub>2</sub> emissions in 2013 were 36 billion tons and are projected to grow to 2,062 billion tons in 2050. IEA estimates only 884 billion could be safely emitted in 2050 to meet CO<sub>2</sub> reduction goals.
- By comparison, the highly successful Title IV SO<sub>2</sub> cap and trade program in the U.S. was targeted to reduce SO<sub>2</sub> emissions from 10 million tons/year down to 5 mt/year.
- The global amount of CO<sub>2</sub> to be captured for CCS/CCUS exceeds the largest production industries of the world, e.g. coal (world production 7.8 billion tons in 2013) and oil (world production 4.2 bt in 2013).

**Commercialization Requires Adequate Time & Effort.** The typical development and commercialization of a new technology in the power industry generally progresses through the following stages:



**Survey Results.** NCC conducted a survey of individuals in the coal and power industries, academia and other stakeholders to assess their perspective on when CCS/CCUS might become commercially available. The survey was sent to 250 people; 48 responded for a response rate of 19%.

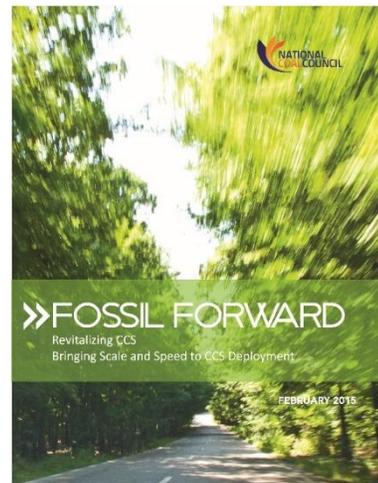
	<u>By 2020</u>	<u>By 2025</u>	<u>By 2030</u>	<u>By 2035</u>	<u>By 2040</u>	<u>Longer</u>
CCS	5%	39%	32%	0%	7%	17%
CCUS	29%	44%	0%	18%	0%	9%

### Survey Results – Respondents' Projections on When CCS/CCUS Could Become Commercially Available

**Key Findings.** Among the challenges to development, deployment, and commercialization of CCS/CCUS:

- **Lack of infrastructure** for transport and storage of captured CO<sub>2</sub> in massive quantities
- **Financing** power plants with CCS/CCUS is a major issue
- **Legal and regulatory issues** still remain unresolved
- **Public acceptance** is still an issue
- First generation technologies are costly; second generation technologies are in early development stages.
- Economics of CO<sub>2</sub> utilization, which must be considered as a storage option
- General equilibrium models should be used with caution
- Policy mismatch of DOE energy programs for CCS/CCUS funding. **Policy parity** would provide more energy options for the US.

Access the Full Report Here ~ [NCC Fossil Forward-Revitalizing CCS Study](#)





## WHO KNEW?\*

### Duke Energy-University of Kentucky East Bend Power Plant ~ Union, KY East Bend Algae Demonstration Project



Duke Energy is hosting a project at its East Bend Power Plant in Kentucky to demonstrate an algae-based system for CO<sub>2</sub> mitigation from coal power plants. Project participants include the University of Kentucky Center for Applied Energy Research and the University of Kentucky Department of Biosystems and Agriculture Engineering. The primary focus of the project is to demonstrate how to use algae to reduce CO<sub>2</sub> emissions produced by coal power plants. Additionally, the project focuses on studying the production of biofuels and other bio-products from the algae to demonstrate the economic feasibility of using algae to capture CO<sub>2</sub>.



A demonstration scale photobioreactor (PBR) is currently being operated at the East Bend Station using coal flue gas as the CO<sub>2</sub> source. The PBR converts the CO<sub>2</sub> in flue gas to algal biomass via photosynthesis. The biomass is then periodically harvested to supply feedstock for upgrading into value-added products. The low energy harvesting system recycles water and unused nutrients.

View two video clips on Algae CO<sub>2</sub> Capture:  
<https://www.duke-energy.com/environment/carbon-capture-and-storage.asp>

#### **A Microalgae-Based Platform for the Beneficial Reuse of CO<sub>2</sub> Emissions from Power Plants**

In related news, in mid-August 2015, the U.S. Department of Energy's National Energy Technology

Laboratory (NETL) announced it has selected 16 projects to receive funding through its Carbon Capture Program, including two focused on algae. The program funds development and testing of transformational CO<sub>2</sub> capture systems for new and existing coal power plants.

<http://energy.gov/fe/articles/doe-selects-16-transformational-carbon-capture-technologies-projects-funding>

One of the two algae-based project awards was granted to the research team at the University of Kentucky Research Foundation, along with the University of Delaware College of Earth, Ocean, and Environment and ALGIX, LLC (Meridian, MS). The team will study microalgae-based CO<sub>2</sub> capture with conversion of the resulting algal biomass to fuels and bioplastics. *Scenedesmus acutus* algae will be cultured in an innovative cyclic-flow photobioreactor; the algae will be harvested and dewatered using a University of Kentucky technology based on flocculation (a process where fine particles clump together)/sedimentation/filtration. The project is expected to yield a conceptual design for an algae-based CO<sub>2</sub> capture system suitable for integration with a coal power plant. The project will last 24 months. DOE is contributing \$990,480 to the \$1.26 million project. BTW ~ this project is just down the road from Southern Company's Kemper County IGCC plant.

For more information on algae-related projects, please see the Algae Biomass Organization's website at <http://www.algaebiomass.org/>.

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

## 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.

### LEADING NEWS

#### States Ask Federal Court for Stay of Clean Power Plan Deadlines

Fifteen (15) states have filed a petition in federal appeals court seeking [an emergency stay of the deadlines set out in the Environmental Protection Agency's Clean Power Plan until litigation of the rule's legality is complete](#).

The petition, filed with the U.S. Court of Appeals for the D.C. Circuit, cites the *environmental* [emphasis in original] regulator's use of "an obscure and rarely used provision of the Clean Air Act" to transform the domestic energy industry -- while systematically disfavoring coal -- and added that EPA had chosen to immediately start a 13-month clock on submission of state plans, even though it could be months before states are permitted by statute to challenge the rule.

With the Plan's firm deadlines, the petition went on, states are required to spend significant resources now to begin preparing their plans, and, absent an immediate stay, would be irreparably harmed by the steps they must take to begin reordering their energy sectors before they can challenge the rule on its merits.

If the Agency is not required to bear the risk of delay by tying compliance deadlines to the date of *Federal Register* publication, the states' petition contended, "EPA could use the uncertain gap between finalization and publication to squeeze practical compliance from regulated parties before judicial review can begin." The Agency had "touted" this tactic after its recent Supreme Court loss in *Michigan v. EPA*, the petition pointed out.

### CLIMATE CHANGE

#### Capitol Hill Staff Engaging Embassies on Climate Issues

Although December's climate conference in Paris is still months away, Capitol Hill staffers from both parties are contacting embassies in Washington, D.C., "[making the case that the United States either can or cannot deliver what the White House has promised](#)" toward a global climate deal, *Greenwire* reported. The publication quoted Republican staffers as saying they're "trying to manage expectations," noting specifically that the legislative and judicial branches have not yet signed off on President Obama's Clean Power Plan. Meanwhile, *Greenwire* said, Democratic offices are doing their own outreach; it quoted a Senate minority staff member as disparaging "the GOP's record of empty threats" on countering legislation and regulations it opposes. However, the article specified, the GOP points to another front: "conservatives say it's only a matter of time before the Clean Power Plan will be invalidated by the courts," and believe that embassy staffers should hear more than a pro-climate-regulation message. *Greenwire* noted, however, that some of the strongest international proponents of a stringent climate deal say they haven't heard from either side. One European official suggested that the Republicans "probably -- and rightly -- see us as a lost cause."

### ENVIRONMENTAL REGULATION

#### EPA Says Will Revise MATS Rule by April 2016 to Meet Court's Order

The Environmental Protection Agency (EPA) has told a federal appeals court that it will seek to keep its Mercury and Air Toxics Standards (MATS) rule for power plants, overturned by the Supreme Court, in place until it can issue an update that meets the high court's directive that it take costs of power plant regulation into consideration. EPA refused to consider costs in its MATS rule, but estimated them at \$9.6 billion per year, while finding that quantifiable benefits from reduced emissions would be only \$4-6 million annually. But in *Michigan v. EPA*, [the Supreme Court found that "It is not rational, never mind 'appropriate,' to impose billions of dollars in economic costs in return for a few dollars of health or environmental benefits."](#) While asserting that EPA must consider costs, including those for compliance, before deciding whether regulation is appropriate and necessary, the high court left it up to the Agency to decide how to account for them. According to *Politico Morning Energy*, EPA told the D.C. Circuit that because the Agency had already performed an "exhaustive consideration of costs" during its rulemaking process, it could issue a new "appropriate and necessary" finding by April 15, 2016.

## Coal Currents *(continued)*

### IN THE INDUSTRY

#### **Kemper County Plant Seen "Paying a Price" for Pioneering Status**

[Mississippi Power's Kemper County integrated gasification combined cycle \(IGCC\) clean coal power plant is paying a price for its first-of-a-kind status](#), an *EnergyWire* article reported. The publication quoted a former Energy Department official as saying that bringing the 582 MW facility, which is to convert lignite into a cleaner-burning gas while capturing and storing CO<sub>2</sub> emissions, from prototype to full scale was "an incredible ramp-up" compared to what's ever been built before. "You're going to have a lot of uncertainty," the official told *EnergyWire*. According to the article, construction is largely complete, with operation slated for early 2016. The project is going through key startup tests, and Mississippi Power is touting its long-term benefits to customers and the state's economy. Supporters say Kemper's true value will be established in the long run, because the first project utilizing an industrial technology is always the priciest. According to an EPRI official, the next plant of this type will cost 10% to 15% less, and subsequent ones even less. "That has always been the vision for how ... it's going to become competitive," he specified.

#### **Forbes Sees Resurgence for Coal Under a GOP President**

The next president, if Republican, will lead a resurgence in coal, Steve Forbes, chairman and CEO of Forbes Media, has predicted. The former presidential candidate told MetroNews "Talkline" that with a new president in coming years, "the economy is going to start to revive again," with the global economy following suit. "The extremists don't like to hear it," Forbes told TalkLine, "but [coal is a critical source of energy, so the consumption of coal is going to be moving up again](#)." Forbes denounced the Administration's initiatives on the energy and environmental front, including the Clean Power Plan and EPA's just-announced standards to reduce methane emissions from oil and natural gas production. "They destroyed the coal industry and they're determined to destroy gas and oil as well," he said. "This government, particularly the White House, has the idea that all things like natural gas, coal are bad and so they're determined to drive them out of existence," Forbes added. "Their alternatives are not going to do the job. In fact, in many ways, they are even worse."

### INTERNATIONAL INTEREST

#### **Chinese Lawmakers Approve Changes to Air Pollution Law**

Chinese legislators have approved amendments to the country's 15-year old air pollution law, granting the state new powers to punish local authorities that fail to meet standards and a legal framework to cap coal consumption, Reuters reported. It also bans firms from turning off pollution equipment during inspections and bans other behavior designed to distort emissions readings, the news service said. However, it added, [the National People's Congress turned down proposals to include specific coal consumption targets in the law](#). The service indicated the amendments are expected to make local governments directly responsible for meeting environmental targets, and quoted a lawmaker as saying it would improve the way local authorities were assessed and permit them to draw up their own plans to meet these targets. However, researchers said the changes do not go far enough, Reuters said; one, an environmental researcher with a government think tank, said, "It is filled with many slogan-like clauses and is more like a policy document than legislation." But a lawmaker rejected the criticism as "very normal."

#### **Researchers Say China's Carbon Emissions Below Estimates**

[China's carbon dioxide emissions are lower than previously estimated, probably by about 14% in 2013](#), according to researchers at Harvard's Kennedy School of Government. According to their calculations, published in the journal *Nature* and reported by Bloomberg, for the period 2000-2013, China emitted 2.9 gigatons less carbon than previously estimated – an amount greater than the country's annual emissions. Bloomberg indicated that the researchers analyzed the coal used in China, which accounts for about 80% of its emissions, and found that it contains 40% less carbon than the "emissions factor" usually used to calculate greenhouse gas (GHG) production. They found that the emissions factor for gas used by the Chinese was 13% higher, and that energy consumption was 10% higher than indicated by national statistics. Looking toward December's climate conference in Paris, the researchers emphasized that, "Evaluating progress towards national commitments to reduce CO<sub>2</sub> depends upon improving the accuracy of annual emissions estimates and reducing related uncertainties."

**Coal Currents** *(continued)***MINING & TRANSPORTATION****Labor Dept. Reports 99% Compliance Rate With Coal Dust Rule**

The Labor Department has announced that almost 62,000 coal dust samples collected from surface and underground mines since its landmark respirable dust rule went into effect show a 98.9% compliance rate. The results show the yearly average concentration of respirable dust for the dustiest mining occupations dropped to an historic low of 0.65 milligrams per cubic meter of air (mg/m<sup>3</sup>), DOL added. "At long last, [we have a rule that fulfills the intent of Congress when it passed the Federal Coal Mine Health and Safety Act of 1969 -- to eradicate black lung](#)," said Joseph A. Main, Assistant Secretary of Labor for Mine Safety and Health. Under Phase I of the rule, compliance can be determined based on a single, full shift sample of coal dust, rather than on an average of multiple samples, the Mine Safety and Health Administration (MSHA) reported. In Phase II, continuous personal dust monitors must be used to monitor underground coal miners exposed to the highest dust concentrations, among other changes. Phase III, which goes into effect next August, will lower the dust concentration limit for the dirtiest areas in coal mines from 2.0 to 1.5 mg/m<sup>3</sup>.

**BLM Advised Not to Raise Royalties on Coal From Federal Lands**

Speaking at the Bureau of Land Management's (BLM) Denver listening session on the federal coal program, [industry supporters advised federal officials not to increase royalties charged for coal mined from federal land, cautioning that such hikes would be counterproductive](#). "Lower production means lower royalties, zero production means zero royalties," underscored Colorado Mining Association President Stuart Sanderson, the *Durango Herald* reported. At the session, one of a series on the federal coal program, Sanderson pointed out that the coal industry has contributed more than \$2.8 billion to Colorado's gross domestic product; overall, the Herald reported, BLM has garnered \$7.9 billion in royalties over the past decade, and nearly \$4 billion in revenue from rent, bonuses and payments. However, the paper added, critics say the agency leases most federal coal for less than \$1 per ton, while companies sell it for at least \$10. BLM manages 310 active coal leases, covering some 475,000 acres in 10 states; it convened the listening sessions to seek public input on how it can best carry out its responsibilities to ensure taxpayers receive a fair return on federally managed coal resources.

**Federal Judge Rejects Greens' Call for EIS on Coal Leasing Program**

A federal judge has rejected green groups' claim that BLM must perform a comprehensive environmental review of the federal coal leasing process to assess its effects on climate change. SNL reported that the groups contended a 1979 environmental impact assessment (EIS) of the program had barely mentioned the "then-nascent" science of greenhouse gases' effects on the environment. However, the organization noted, U.S. District Judge Reggie Walton granted the motion to dismiss filed by the Interior Department and BLM, specifying [they have no duty to supplement the EIS because they are proposing no major changes in the federal coal leasing program](#). "There is no remaining or ongoing federal action that confers upon them a duty to do so," he specified. The judge's memorandum opinion was filed with the U.S. District Court for the District of Columbia. Coal from federal lands accounts for 40% of U.S. production; SNL reported that a Wyoming Coal Association filing had warned that the greens' lawsuit threatened "monumental disruption" of the leasing program.

**ENERGY ISSUES****Report Calls CCS "Game Changer" for Coal, But Questions Timeline**

An updated report from Citi Global Perspectives and Solutions characterized the coal industry's future as "challenging." The banking giant's original report, "Energy Darwinism," forecast that coal would be the biggest loser from the shift occurring in the global energy mix. Its update, "Energy Darwinism II," suggested that while coal is likely to remain an important part of the mix, "cyclically and structurally we think global markets will remain in oversupply, capping coal prices and placing significant pressure on the coal mining industry." The document described the industry's response to date as optimistic that demand will pick up, and hopeful that "clean coal technology will become available and save the day." [Citi acknowledged that the "game changer" for coal rests in carbon capture and storage \(CCS\)](#), although it added that the timeframe for commercial success "may be beyond the survival window for a lot of the coal mining companies." Despite technical progress, the report said, the industry believes there is a need for government policy to support the business case for broad scale implementation. However, the Citi unit indicated, given the current political backdrop regarding CO<sub>2</sub> emissions, such policy "doesn't appear likely."

**Coal Currents** (continued)**BY THE NUMBERS****U.S. Electric Power Sector Carbon Emissions Hit 27-Year Low**

The U.S. electric power sector's carbon dioxide emissions in April, 128 million metric tons, were the lowest for any month in 27 years, the Energy Information Administration (EIA) reported. Coal use accounted for 89.4 million metric tons (MMmt), while natural gas accounted for 36.4 MMmt. EIA's *Monthly Energy Review* also contrasted changes in the electric power sector's fuel mix since April 1988, the beginning of the 27-year period previously noted. It specified that natural gas consumption more than tripled, renewable energy consumption more than doubled, nuclear energy consumption rose by 47%, and coal consumption decreased by 17%. EIA added that electricity generation has become less energy- and carbon-intensive over time. Compared to April 1988, the Energy Department unit said, generation in the electric power sector increased by 44%, but the associated primary energy use and CO<sub>2</sub> emissions rose by only 33% and 4%, respectively.

**Coal's Share of U.S. Power Generation Falls to 1980s Levels**

Coal's contribution to U.S. electricity generation fell by more than 14% in the first half of 2015 due to competition from natural gas capacity and unit retirements, EIA reported. According to SNL, the decrease dropped coal burn to levels not seen since the early 1980s on an annualized basis. However, it added, coal still contributed the largest single share of generation for electric utilities -- 46% -- although down from January through June 2014. Natural gas's share of electric utility generation rose to 23%, from 18% a year earlier. According to SNL, total coal consumption for electric generation declined to 372.5 million tons in the first six months of 2015, down 15% from the prior year period. Meanwhile, inventories including bituminous coal stood at 167.8 million tons, up from 132.9 million tons at the end of June 2014, SNL reported.

**Todd H. Cunningham, who writes the "Coal Currents" column for the Council's monthly newsletter, 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).**