



## NATIONAL COAL COUNCIL ~ JANUARY 2016

### NCC MEETS WITH SECRETARY MONIZ

Representatives of the National Coal Council (NCC) met with Energy Secretary Ernest Moniz on January 5<sup>th</sup>, 2016 to discuss the Council's latest report ~ [Leveling the Playing Field: Policy Parity for CCS Technologies](#) (Nov. 2015).

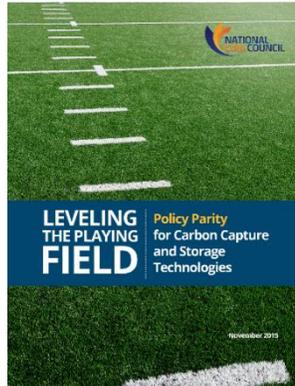
Principal NCC representatives included Glenn Kellow, President & CEO, Peabody Energy ~ who chaired the recent NCC report ~ and Janet Gellici, NCC CEO. In addition to Secretary Moniz, DOE was represented by Franklin Orr, Under Secretary for Science & Energy, Chris Smith, Assistant Secretary Fossil Energy, Julio Friedmann, Principal Assistant Secretary Fossil Energy, and David Mohler, Deputy Assistant Secretary for Clean Coal & Carbon Management.

The Secretary expressed his thanks to the NCC for undertaking the white paper and completing it in advance of COP21. He was supportive of the need to advance the commercial deployment of CCS technologies.

NCC looks forward to continuing to work with the Secretary and his staff to implement approaches recommended in the NCC report that would accelerate deployment of CCS technologies in the 2025-2030 timeframe.

Secretary Moniz encouraged NCC to begin working on additional reports that would provide guidance on achieving these objectives. NCC leadership is working with DOE staff to identify appropriate topics for future reports.

Thank you to the following individuals for their support in preparing for the meeting with Secretary Moniz: Fred Eames, Hunton & Williams and the Peabody team of Cartan Sumner, Michael Flannigan and Ray Shepherd.



### NCC LEADERSHIP

#### Mike Durham, NCC Chair

Principal, Soap Creek Energy  
**Greg Workman, Vice Chair**  
Director Fuels  
Dominion Resources

**Deck Slone, Coal Policy Chair**  
Sr. VP Strategy & Public Policy  
Arch Coal

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

#### Executive Committee

**Ted Doheny**, President & CEO  
Joy Global

**Amy Ericson**  
GE Power

**Michael Jones**, VP R&D  
Lignite Energy Council

**David Lawson**, VP Coal  
Norfolk Southern Corporation

**Dawn Santoianni**  
Lead Comms. Consultant  
Duke Energy

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

**Scott Teel**, VP Fuel Services  
Southern Company

**Kemal Williamson**  
President Americas  
Peabody Energy

#### Ex Officio

**Joe Craft, III**, President  
Alliance Coal

**John Eaves**, President & CEO  
Arch Coal

**Joe Hopf**, Senior VP & CCO  
Talen Energy

**Jeff Wallace**  
Southern Co. Services (retired)

#### Finance Committee

Chair ~ **Gregory Workman**

#### Communications Committee

Chair ~ **Dawn Santoianni**

#### NCC Staff/Support

**Janet Gellici**, NCC CEO

**Hiranthie Stanford**  
NCC Member & Meetings Mgr.

**Karen Bennett**  
**Hunton & Williams**  
NCC Legal Counsel

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Washington, DC 20004  
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### NCC 2016 SPRING MEETING APRIL 19-20, 2016 HAMILTON CROWNE PLAZA WASHINGTON, DC

Registration is open for the NCC's 2016 Annual Spring meeting.

NCC Members and Guests may register on line at <https://www.etchouches.com/157761>

#### Schedule at a Glance

Tuesday, April 19<sup>th</sup>

1:30-2:30 pm NCC Communications Committee  
5:30-6 pm New & Prospective Members Reception  
6-8 pm Welcoming Reception

Wednesday, April 20<sup>th</sup>

8:45 am-12:15 pm NCC Full Council Meeting  
12:15-1 pm Networking Luncheon



**A new feature in the NCC newsletter!**  
**We'd like to keep our NCC community**  
**informed of good news from our**  
**members.**

**NCC members are invited to submit good**  
**news items regarding their companies**  
**and organizations to**  
**Janet Gellici at [info@NCC1.org](mailto:info@NCC1.org).**

**Lisa Bradley, PhD, Haley Aldrich, Inc.**

<http://www.haleyaldrich.com/> ~ [lbradley@haleyaldrich.com](mailto:lbradley@haleyaldrich.com)

**Lisa Bradley**, Vice President & Senior Toxicologist at **Haley Aldrich** was named one of the "[100 Global Inspirational Women in Mining](#)" by Women in Mining (UK). The organization sponsors the recognition program as part of its drive to promote and highlight the contribution women make to the industry and the vast array of opportunities available. Congratulations Lisa! And congrats to two other women affiliated with NCC members' companies: Joy Global ~ Julie Beck, CFO, Joy Mining Machinery ~ and Peabody Energy ~ Jeane Hull, Retired Executive Vice President & Chief Technical Officer. NCC's Janet Gellici was acknowledged among the 100 Global Inspirational Women in Mining in last year's inaugural program.

### **Janet Gellici ~ Certified Association Executive**

**Janet Gellici**, NCC CEO, was recently renewed as a Certified Association Executive (CAE) with the American Society of Association Executives (ASAE). To become certified, applicants must meet eligibility requirements, including employment, professional development, and educational degree and must successfully complete a comprehensive examination which tests fundamental knowledge of all areas of the association management profession. To maintain certification, CAEs must accumulate professional credits over three-year periods to demonstrate their involvement in association management, continuing education and the profession. More than 4,000 association executives have earned and maintained the CAE designation.

### **Welcome NCC 2016 Executive Leadership**

On January 1, 2016, NCC welcomed the following individuals to serve as members of the 2016 Executive Committee.

**Mike Durham, NCC Chair**, Principal, Soap Creek Energy

**Greg Workman, NCC Vice Chair**, Director Fuels, Dominion Resources

**Deck Slone, NCC Coal Policy Chair**, Sr. VP Strategy & Public Policy, Arch Coal

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

**Ted Doheny**, President & CEO, Joy Global

**Amy Ericson**, GE Power

**Michael Jones**, VP R&D, Lignite Energy Council

**David Lawson**, VP Coal, Norfolk Southern Corporation

**Dawn Santoianni, NCC Communications Committee Chair**

Lead Communications Consultant, Duke Energy

**Mike Sorensen**, Sr. Mgr. Fuel, Tri-State Generation & Transmission

**Scott Teel**, VP Fuel Services, Southern Company

**Kemal Williamson**, President Americas, Peabody Energy

**Ex Officio**

**Joe Craft, III**, President, Alliance Coal

**John Eaves**, President & CEO, Arch Coal

**Joe Hopf**, Senior VP & CCO, Talen Energy

**Jeff Wallace**, Southern Co. Services (retired)

### **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/b](http://www.eia.gov/coal/data/browser)

[rowser](#)

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 EPA's Clean Power Plan:

An Economic Impact  
 Analysis

[National Mining](#)

[Association January 2016](#)

Gellici Interview on Policy  
 Parity for CCS

[Carbon Management](#)

[Technology Conference](#)

[Nov. 2015](#)

The Truth About Apple's  
 100% Renewable Energy  
 Usage

[Alex Epstein Forbes Jan.](#)

[2016](#)

Navajo Transitional Energy  
 Moves Forward with Power  
 Plant Ownership Options

[Indian Country Today](#)

[Media Network Dec. 2015](#)

This Power Plant Set Out to  
 Prove Coal Can be Clean

[National Geographic](#)

[Oct. 2015](#)

Clean Coal Technologies,  
 Inc. Announces Successful  
 Drying of Coal

[Coal News](#)

[Announcement Jan. 2016](#)

Carbon Capture 101

[U.S. Dept. of Energy](#)

Closing the Gap on  
 Climate – Why CCS is a  
 vital part of the solution

[ENGO Network Dec. 2015](#)

### **Gellici Speaking Engagements**

Leveling the Playing Field

American Coal Council

Webcast Feb. 10<sup>th</sup>, 2016

**National Coal Council**

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

## NCC Member Focus

An NCC member since 2001, Clark Harrison has been an active participant in NCC studies and a member of the NCC Executive Committee (2014-2015). Thank you, Clark, for always being ready with a new idea, a different approach and good humor.

As Senior Manager, Business Development at CH2M, Clark and the CH2M team provide affordable compliance solutions for new CCR Rules and Effluent Limitation Guidelines to clients in the Northeast and Midwest. Clark helps his clients define and quantify their compliance issues and identifies the right CH2M resources to help.

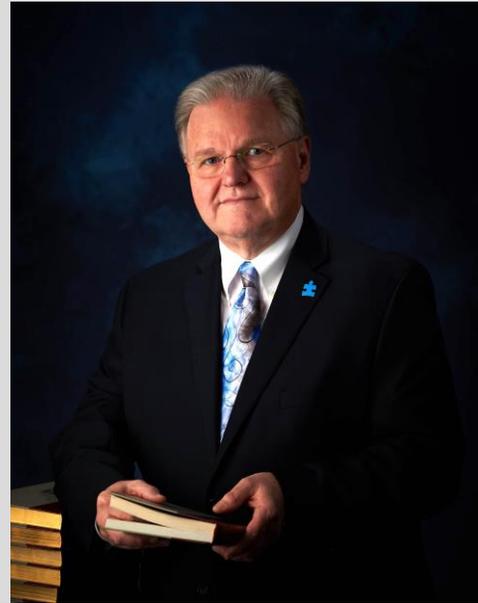
Clark has served coal-fueled power plants since he started as a co-op student for West Penn Power Company almost 47 years ago. After graduation from Penn State University, he joined the environmental management department at Pennsylvania Power & Light Company (PPL) where he negotiated the company's first NPDES permits for coal mines, power plants and division offices. He later joined PPL's Fuels Department where he developed the fuel supply strategy for a new bituminous coal-fueled unit and planned and launched PPL's CCR marketing program.

After PPL, Clark was a Sr. Marketing Representative at the Alliance Research Center for Babcock & Wilcox Contract Research. He was later hired by one of his clients, EPRI, to manage the newly-constructed Coal Cleaning Test Facility (CCTF) for almost 10 years. The CCTF was the largest demonstration facility ever constructed to demonstrate emerging technologies to improve power plant performance and reduce emissions by removing impurities from coal of all ranks. Work at the CCTF led to the formation of CQ Inc., EPRI's first for-profit subsidiary and a \$24 million clean coal technology to validate EPRI's Coal Quality Impact Model, now known as VISTA.

Clark served as President and CEO of CQ Inc. for 20 years, during which time the company diversified its business into biomass-fired power generation, residential wood pellets, biodiesel fuel, and coal-biomass composite fuels. Clark concluded the CQ Inc. business in 2010 and soon after was recruited as a consultant to join CH2M.

Clark also recently led a team of engineers from Development and Diligence LLC serving as Independent Engineer to the lenders and owners of Longview Power, a state-of-the-art 700 MW coal-fired power plant in Madsville, WV that was recently rehabilitated to become one of the top-performing power plants in North America.

Clark serves as Chairman of the Board for The Village, a charity he founded in California, PA to provide the highest quality preschool and day care to the region with fully-paid scholarships for single parents who are enrolled as fulltime students in college, trade school, nursing school, or high school to get a degree that will improve the lives of their families and demonstrate the value of education to their children. Clarks has also served on Boards of Directors of CQ Inc., Pens Rock Inc., National Ash Association and Holiday Park Preschool.



**CLARK D. HARRISON**  
**SENIOR MANAGER BUSINESS DEVELOPMENT**  
**CH2M**

CH2M is an American engineering company that provides consulting, design, construction and operations services for corporations, and federal, state and local governments. Starting in 1946, the firm is named for its founders (WWII Veterans) Cornell, Howland, Hayes, and Merryfield and is owned by its employees. CH2M operates five main market-oriented divisions: Environment and Nuclear, Water, Transportation, Energy, and Industrial and Urban Environments. CH2M Hill's top client is the U.S. Government, which contributes more than one-fifth of the company's annual revenue.

The firm's headquarters are near Englewood, Colorado. CH2M has approximately 25,000 employees and annual revenues of over \$6 billion. The firm announced a global rebrand in April 2015, adopting the nickname CH2M while retaining CH2M HILL Companies Ltd. as the firm's legal name.

**Clark Harrison**  
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**412-916-9300**

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[www.ch2m.com](http://www.ch2m.com)





### COMMUNICATIONS COMMITTEE REQUESTS TO MEMBERS

Education about the importance of coal as an energy source, and dissemination of the information prepared by the National Coal Council (NCC) is vital to its mission. Leveraging our revised website and newly-launched presence on social media, the ability of the NCC to enhance the public discussion on energy issues is better than ever. However, to gain recognition and develop an online presence, the NCC needs the support of its members and their organizations to the greatest extent possible. Thus, the NCC Communications Committee requests the following help from our members (for large organizations, please share this with your communications staff):

- **Twitter**
  - Have your organization follow NCC: @CoalCouncil
  - Follow @CoalCouncil with your own Twitter account
  - Ask your member organizations to tweet to @CoalCouncil (and use popular hashtags such as #coal #CO2 #CCS #carboncapture #HELE #efficiency #climate) to engage in online discussions.
- **LinkedIn**
  - Have your organization follow NCC: [https://www.linkedin.com/company/4240233?trk=tyah&trkInfo=clickedVertical%3Acompany%2CentityType%3AentityHistoryName%2CclickedEntityId%3Acompany\\_4240233%2Cidx%3A0](https://www.linkedin.com/company/4240233?trk=tyah&trkInfo=clickedVertical%3Acompany%2CentityType%3AentityHistoryName%2CclickedEntityId%3Acompany_4240233%2Cidx%3A0)
  - Personally follow NCC at the link above.
- **NCC website**
  - If your organization has a "Resources" (or similar) section, please add the National Coal Council website: [www.nationalcoalcouncil.org/](http://www.nationalcoalcouncil.org/)
- **Media outreach:**
  - Share your organization's media list with NCC (email directly to Janet Gellici at [jgellici@ncc1.org](mailto:jgellici@ncc1.org))
  - If you use any information from NCC studies in your press releases or media outreach, please give credit to NCC.
- **Volunteer**
  - Support young professionals: If there are young professionals at your organization who could spend a few hours assisting the NCC, and you'd be willing to support their time, we could use help with preparing slide decks, preparing fact sheets, gathering information for tweets, etc. These worthwhile activities aid in professional development by giving young professionals experience with developing media collateral, learning more about NCC, and working directly with NCC leadership. If you can support young professionals in your organization, please email the NCC Communications Committee leadership (contact information below).
  - Share your ideas on worthwhile information for NCC to share on social media by emailing the NCC Communications Committee leadership (contact information below).

Contact information for the NCC Communications Committee leadership:

- Holly Krutka (2015 Chair): [hkrutka@gmail.com](mailto:hkrutka@gmail.com)
- Dawn Santoianni (2016 Chair): [dawn.santoianni@duke-energy.com](mailto:dawn.santoianni@duke-energy.com)
- Lisa Bradley (2016 Vice Chair): [LBradley@haleyaldrich.com](mailto:LBradley@haleyaldrich.com)

**If you are interested in joining the NCC Communications Committee, please contact Janet Gellici at [jgellici@NCC1.org](mailto:jgellici@NCC1.org).**

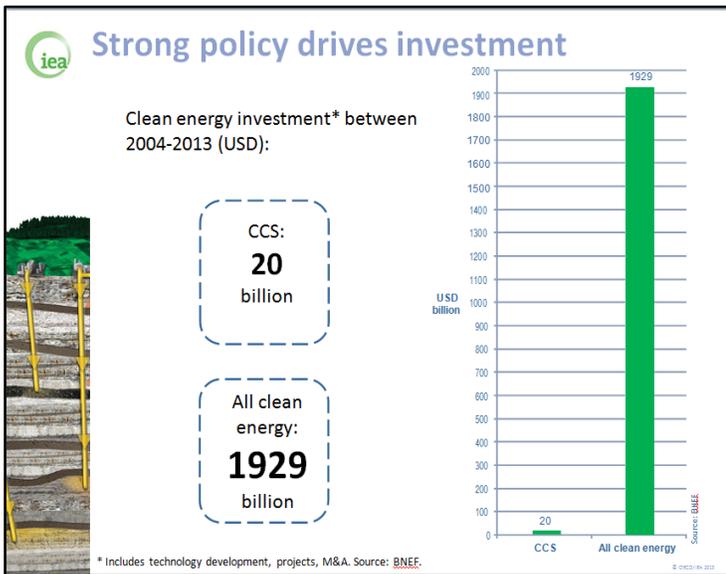
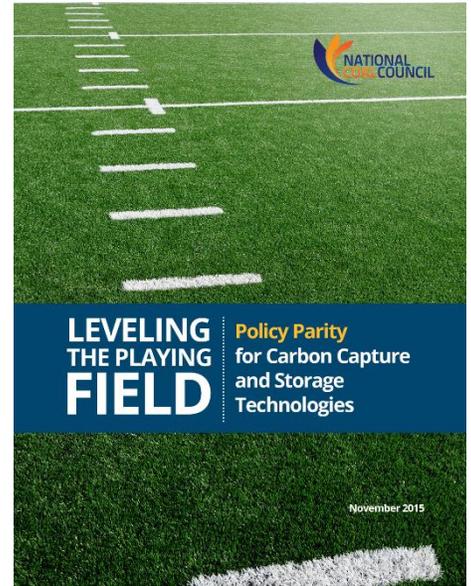
In November 2015, NCC members approved a white paper the Council prepared for the Secretary of Energy detailing policy parity measures that could be undertaken to level the playing field for CCS technologies.

This series of newsletter articles details primary findings/recommendations.

### The Power of Incentives & Policies

Policy parity for CCS must be measured against other low-carbon energy resources. In 2015, EIA published an assessment of energy subsidies and incentives that indicated renewable energy is, by far, the single largest recipient of Federal energy subsidies. In 2013, renewables received more than 12 times the subsidies received by coal - \$13.227 billion for renewables vs. \$1.085 billion for coal.

The Congressional Research Services (CRS) also released a report in 2015 in which it noted that in 2013 the value of Federal tax-related support for the energy sector was approximately \$23.3 billion ~ \$13.4 billion (57.4%) for renewables and \$4.8 billion for fossil fuels. Financial support outside typical funding mechanisms for energy has also favored renewables over other fuels sources. Funds for renewable projects under the American Recovery and Reinvestment Act (ARRA) were \$20 billion versus \$3.4 billion for coal.



In addition to financial support, renewables have benefitted significantly from regulatory mandates creating a guaranteed market for wind, solar, biomass and other alternatives to fossil and nuclear power. Renewable Energy Standards (RES) obligate utilities to produce a specified percentage of their electricity from renewable energy sources. Federal and State RESs have successfully and quickly spurred the growth of renewable energy in the U.S.

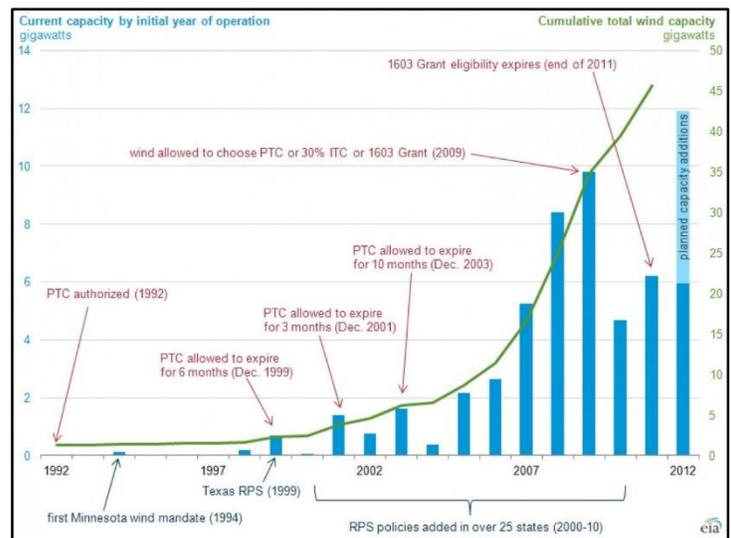
As demonstrated by the rapid and expansive growth realized by the U.S. wind industry over a two-decade period, the combination of policy and financial incentives are effective tools that can drive scale and speed in energy technology deployment.

#### Source: Carbon Capture & Storage: Perspective from the IEA

In addition to the tax incentives provided to renewables, the current policy landscape discourages the construction of CCS-equipped projects by failing to address the investment costs required of deploying the technologies at power and industrial facilities. EIA's Annual Energy Outlook pegs the Levelized Cost of Electricity (LCOE) for wind capacity coming on line in 2020 between \$65.6 and \$81.6/MWh. While this compares favorably with a Natural Gas Combined Cycle (NGCC) plant, the former is a non-dispatchable technology with just a 36% capacity factor. Almost three times more capacity is need when building wind as opposed to either conventional coal, advanced coal equipped with CCS, NGCC or NGCC with CCS.

#### Access the White Paper

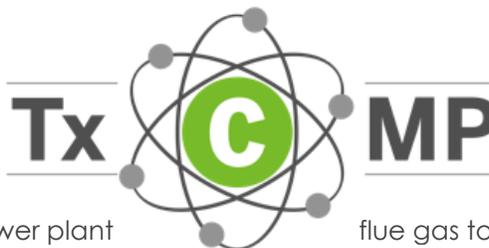
[Leveling the Playing Field: Policy Parity for CCS Technologies](#)



Janet Gellici will be presenting a webcast on the NCC Leveling the Playing Field report on February 10, 2016, 2-3 pm Eastern. To participate in the American Coal Council event contact Jason Hayes at [jhayes@americancoalcouncil.org](mailto:jhayes@americancoalcouncil.org).

## WHO KNEW?\*

### TEXAS CARBON MANAGEMENT PROGRAM



The Texas Carbon Management Program carbon capture from coal and natural gas power plant anthropogenic greenhouse gas emissions. The program amine scrubbing, which is a flexible, tail-end technology that can be retrofitted onto existing power plants or be included as part of a greenfield installation.

focuses on flue gas to help mitigate investigates post-combustion

The program's goal is to understand and improve all aspects of amine scrubbing. There are currently sixteen graduate students working on collecting thermodynamic and rate measurements, testing amine degradation, mitigating nitrosamines, quantifying aerosol formation, creating process models, improving process design and efficiency, and understanding pilot plant results. These efforts have resulted in establishing the use of concentrated, aqueous piperazine (PZ) with an advanced flash stripper as the most efficient, open-literature amine scrubbing system.

### Laboratory Studies

The lab has a wide variety of analytical equipment used to study all aspects of a solvent. Amine solvents are heated to high temperatures and sampled over the period of weeks to check for thermal stability. Degradation products are analyzed using in-house cation and anion chromatographs. This has shown that PZ is more stable than monoethanolamine (MEA), the previous solvent of choice.

Other studies include: using NMR to determine the amount of free amine and products in loaded solvents, using FTIR to determine amine volatility, and using the wetted-wall column with NO<sub>2</sub> to study nitrosamine formation kinetics.

### Modeling Studies

The experimental data collected in the group is regressed into a rigorous Aspen Plus® process model that can predict plant performance, design new process configurations, and understand the inner workings at a more detailed level than possible through experiments alone.

Rigorous models have been created for MEA, PZ, PZ/monodiethanolamine (MDEA), and PZ/2-amino-2-methyl-1-propanol (AMP). Using these models, it has been proven that a higher heat of absorption results in a lower cost of capture, an idea that is counterintuitive to minimizing energy performance.

While most of the modeling work focuses on steady state design and optimization, the group has also developed a dynamic model of the amine scrubbing process. Dynamic models are necessary to understand the effects of disturbances on process operation and for controller design.

### Pilot Plant Studies

Located at the Pickle Research Center, the group's 0.1 MWe pilot plant provides data to validate models and explore other phenomena, such as aerosol emissions and corrosion. The pilot plant started with a simple stripper and absorber running MEA, and has changed solvents multiple times.

**The Rochelle Lab**  
**The University of Texas at Austin**

**CO<sub>2</sub> Capture**

If you are interested in participating in the program, further details can be found [here](#).

Texas Carbon Management Program ~ Gary T. Rochelle, Director ~ [gtr@che.utexas.edu](mailto:gtr@che.utexas.edu) ~ (512) 471-7230

The University of Texas at Austin ~ McKetta Dept. of Chemical Engineering

200 E Dean Keeton St. Stop C0400 ~ Austin, TX 78712-1589

**\*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

#### Parties to Paris Climate Agreement Facing Follow-On Tasks

While the climate agreement recently concluded by the U.S. and almost 200 other countries in Paris has been hailed as "historic," there is more ambiguous news, *The Washington Post* noted: "This document, by its very nature, depends on key sectors of society to respond to help make sure its goals are realized."

"Countries, companies and individuals all across the planet will have to do the right things -- and very hard things, at that," *The Post* said. "[And it's too soon to tell exactly how they will do so.](#)" Added to that, it commented, even if everyone cooperates, the Paris pact "may not be enough to prevent the catastrophic effects of climate change," because its goal -- limiting the temperature increase to 1.5 degrees Celsius above pre-industrial levels -- likely won't be possible without a large-scale method of removing carbon dioxide (CO<sub>2</sub>) from the air.

This raises another key question, *The Post* noted: what the agreement will do to spur more research into a suite of so-called "negative emissions" technologies able to remove CO<sub>2</sub> from the air. A scholar quoted in the article says negative emissions are at present "basically science fiction," with progress requiring R&D on a massive scale. Post-Paris, the article concludes, "Even as we monitor ongoing changes in the climate, our attention must now shift to the business and technology trends that just may save it."

Another *Post* article addressed the same subject, underscoring that President Obama knows that "[even if all the commitments are met, they will still fall short of what's needed to stem climate damage to the planet.](#)" It said the Chief Executive is "firmly in two distinct climate action camps: one that believes enough action can be taken now using available technology to meet the target temperature and one that believes that only technological innovation will prevent climate disaster."

According to *The Post*, Obama acknowledged that, "We don't yet know exactly what's going to work best. But we know that if we put our best minds behind it and we have the dollars behind it, we'll discover what works. We always have in the past, and we will this time as well."

An article in the *National Law Review*, "Perspectives on COP21 and Future Coal Production," was markedly less optimistic. Author Stephen C. Smith pointed to recent reports that China, the world's largest greenhouse gas (GHG) emitter, had significantly underreported its use of coal in recent years, and that the world's second-most populated country, India, plans to double its coal output by 2020. In light of these developments, Smith asked, "[Does the COP21 climate deal still make sense?](#)"

### ENERGY ISSUES

#### Gas May Eclipse Coal as 2015's Lead Generating Fuel

Natural gas, which ranked as the leading U.S. generating fuel during 2015's summertime peak electricity output period, could for the first time displace coal at the top of the power supply mix for the entire year, *Argus Media* reported. According to *Argus*, from January through October, natural gas accounted for 32% of U.S. generation, up from 28% in the same time period last year. Meanwhile, coal's share declined to 34% from last year's 39%. The news service specified that coal plants generated 12% less electricity in January through October 2015 than in the year-earlier period, while gas-fired generation increased by 18% in absolute terms. "[The trend likely will intensify in November-December.](#)" *Argus* said, pointing out that coal-fired power plants in the Midcontinent Independent System Operator (MISO) territory, the nation's second-largest, produced 22% less electricity during this period than a year earlier. *The Dallas Morning News* noted that the shift in power sector fuel use "comes as gas prices fall to historic lows" due to hydraulic fracturing and horizontal drilling. However, the Energy Information Administration's (EIA) December 2015 *Short-Term Energy Outlook* said it expected coal-fired generation to rebound in 2016 because of a forecasted rise in natural gas prices.

**Coal Currents** (continued)**CLIMATE CHANGE****Economist Advises Curbing Post-Paris Enthusiasm**

Economist Robert Samuelson has called for a curbing of enthusiasm on climate change. Writing in *The Washington Post*, Samuelson acknowledged that the recent COP21 conference in Paris took significant steps to check global warming. However, he added, "The trouble is that what's being attempted is so fundamentally difficult that even these measures may be wildly unequal to the task." This task is "[the wholesale replacement of the world economy's reliance on fossil fuels \(coal, oil, natural gas\) for four-fifths of its energy.](#)" But while "renewable energy -- mainly wind and solar power -- is supposed to rescue us ... quite likely, it won't." The problems include the "tiny base" (*The Economist* magazine puts renewables' share of world energy production at 1%) from which these energy sources are growing, and physics: solar and wind generate electricity only when the sun shines or the wind blows. Consequently, "The potential isn't large enough." While technological breakthroughs could change this, Samuelson acknowledged, "We have been searching for decades with only modest success." And without meaningful advances, he underscored, "regulating the world's temperature is mission impossible."

**Study Stresses Need to Preserve, Protect Carbon Sinks**

Unless currently protected areas of the globe, such as rainforests -- which draw heat-trapping CO<sub>2</sub> from the atmosphere and have a net cooling effect on the planet, slowing the rate of climate change -- are preserved and expanded, their capacity to sequester will decline, a recent study concluded. According to *MIT News*, [researchers projected the annual carbon sequestration rate in protected areas would decline by about 40% between now and 2100.](#) "Moreover," the publication said, "if about one-third of protected land is converted to other uses by that time ... carbon sequestration in the remaining protected areas will become negligible." Accordingly, one of the study's coauthors, MIT's John Reilly, underscored "the need for sufficient resources dedicated to actually preventing encroachment of human activity into protected areas." Keys to success include "Maintaining existing protected areas, enlarging them and adding new ones over this century," added lead author Jerry Melillo of the Woods Hole Marine Biological Laboratory.

**ENVIRONMENTAL REGULATION****President's Final-Year Goal: Preserve Work Already Done**

As President Obama enters his final year in the White House, "[much of his focus on environmental issues will be on implementing and preserving the work he's already done.](#)" *The Hill* reported. As a leading example, the article cited the Clean Power Plan (CPP), an Environmental Protection Agency (EPA) regulation designed to cut emissions from existing power plants by 32% from 2005 levels by 2030. *The Hill* noted that dozens of opponents had brought suit against it the October day it was published in the *Federal Register*. While these foes argued that the Agency went beyond its legal authority in assigning states carbon reduction targets, the publication said that EPA had defended the rule's "strong scientific and legal foundations"; it reported separately that EPA Administrator Gina McCarthy has commented that the CPP "falls squarely within the four corners of the Clean Air Act," and expressed confidence that it will endure. Legal filings on the matter were due in late December, *The Hill* indicated, with "the first judicial skirmish over the rule set for early 2016."

**In New Year, No Regulatory Respite for Coal Industry**

"[The brunt of regulatory pressure on the US coal industry is unlikely to ease in 2016,](#)" *Argus Media* forecast, with the sector "gearing up for the possibility that pending rules could make it even more difficult for coal-fired power plants to operate." EPA's mercury and air toxics rule and the Clean Power Plan for reducing CO<sub>2</sub> emissions in the power sector are affecting coal plants on the demand side, *Argus* specified, while the federal stream protection rule expected to be finalized this year could have a considerable effect on the supply side. Based on the *Argus* coal retirement database, coal-fueled capacity retirements in 2016 are expected to total 12,644 MW at 67 power plants, in addition to 21,532 MW of capacity at 127 plants removed from service in 2015. Meanwhile, EPA's efforts to reduce CO<sub>2</sub> emissions in the power sector will trigger additional retirements, the article said, with as much as 38 GW of coal-fueled generation becoming uneconomic to run by 2030. According to *Argus*, while the final shape of the CPP depends on the courts, other regulations facing coal will be hard to reverse even with a different administration arriving in January 2017.

**Coal Currents** *(continued)***INTERNATIONAL INTEREST****IEA Reports a Halt to Growth in Global Coal Demand**

The growth in global coal demand halted in 2014, the International Energy Agency (IEA) reported. The development resulted from "a combination of some structural and temporal factors, mostly in China, where half of global coal is used," the IEA said in its *Medium-Term Coal Market Report 2015*. The factors included a near-halving of the one-to-one relationship between China's GDP and electricity demand, diversification of that country's power sector away from coal, and plummeting of the average double-digit growth in coal-intensive industries such as steel and cement. Moreover, "preliminary data ... suggest the acceleration of these trends in 2015," the Agency reported. [The IEA forecast a "long sunset" for coal in advanced economies](#). In the U.S., it anticipated an "inevitable" decline in coal demand, with its share of power generation dipping below 35% by 2020, the lowest since the Agency was created. In Europe, it forecast a decline in coal power generation averaging more than 1.5% annually through 2020. However, the report indicated, given persistently low coal prices, "The current 1900 GW of installed coal capacity globally will be expanded as capacity under development in Asia exceeds the likely retirements in Europe and the United States."

**China Taking Three-Year Break from New Coal Mine OKs**

China, the world's largest energy consumer, [will stop approving new coal mines for the next three years and continue to trim production capacity as it attempts to shift away from the fuel](#), Bloomberg News reported. The Asian behemoth will cut coal's share of energy consumption to 62.6% from today's 64.4%, according to Xinhua News Agency. It will also close more than 1,000 coal mines in 2016, removing 60 million tons of unneeded capacity, Xinhua said. The country shuttered a similar number of mines in 2015, with 70 million tons of production, according to a separate statement from the National Energy Administration. Bloomberg noted that as part of pollution-cutting efforts, China has pledged to peak carbon emissions around 2030, by which time it is aiming at obtaining 20% of its energy from clean sources. It reported that China's total coal production capacity, including mines under construction, is estimated at more than 5 billion tons, while its coal output for 2016 will probably reach 3.7 billion tons, leaving more than 20% of capacity idle.

**India Poised to Pass U.S. as Second-Largest Coal Consumer**

India will account for more than half of the annual increase in global coal demand in the next five years, the International Energy Agency (IEA) reported. The forecast, contained in the organization's medium-term coal market report, attributed the development to China's ongoing economic rebalancing and structural decline in OECD countries. According to the *Economic Times*, [India is the only major country with strong growth in coal consumption, and soon will bypass the U.S. to become the world's second-largest coal consumer](#). "India's dependence on coal-based energy is high as it seeks to promote the manufacturing sector and provide electricity to 240 million people who are still without power," it noted. Coal will provide a significant share -- as much as 60% through 2020 -- of the country's additional power requirements, the IEA said. It will also overtake China as the largest importer of thermal coal, with imports in the last fiscal year of more than 212 million tonnes.

**IN THE INDUSTRY****Navajo Nation Seeking Ownership Stake in Coal Plant**

[The Navajo Nation is negotiating for an ownership stake in the Four Corners Power Plant in New Mexico](#). A Navajo Transitional Energy Authority spokesman said its interest in the 7%, 107 MW stake is as "a short window to gain as much strength as we can to diversify our company's energy portfolio" and to garner experience in energy production. The company is seeking the interest held by El Paso Electric Co., which has agreed with Arizona Public Service Co. to sell its stake and divest from coal generation. The Navajo company would negotiate directly with APS for a portion of the unit that generates the 107 MW; if it is successful, the tribal enterprise would have to find a buyer for the power. The enterprise owns the coal mine that supplies the power plant's fuel. According to a spokesman, "We're coming into a realm where we're going to be partners with the companies that own the power plant, and this opens up possibilities."

**Coal Currents** *(continued)***MINING & TRANSPORTATION****Coal Mine Fatalities Fall to Record Low, MSHA Reports**

Eleven (11) coal miners died in work-related accidents during 2015, the lowest total on record, according to preliminary data from the Mine Safety and Health Administration (MSHA). The leading causes were powered haulage and machinery accidents, which accounted for six (6) deaths, the Labor Department unit reported. Joseph Main, Assistant Secretary for Mine Safety and Health, said that while coal mine closures had some effect on the historic low number, "[actions by MSHA and the mining industry to improve mine safety have been a major factor.](#)" Main credited the Agency's use of strategic enforcement tools, including special impact inspections that quickly address problem mines and the modified Patterns of Violation (POV) procedure that focuses on mines with chronic violations, together with compliance assistance, training and outreach efforts to the mining industry. Meanwhile, a National Mining Association (NMA) spokesman said the industry has had a heightened focus on safety, with a goal of zero fatalities, the Associated Press (AP) reported. The Association representative added that the reduction in mine employment in recent years may also be a factor in the record low deaths.

**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.**

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**Happy New Year 2016**