

NATIONAL COAL COUNCIL ~ DECEMBER 2016

NCC LOOKS FORWARD TO WORKING WITH THE NEW ADMINISTRATION



The National Coal Council looks forward to working with President-elect Trump's Administration in its stated efforts to achieve American energy independence. As it has for the past 32 years, the Council will be responsive to requests for advice and guidance to the new Secretary of Energy on policy matters related to coal and the coal industry. The diversity and depth of experience represented by NCC appointees will serve the in-coming Administration well as it

addresses a variety of issues related to our nation's

energy security needs.

President-elect Trump's Energy Independence website emphasizes an intent to advance energy policies that "will make full use of our domestic energy sources, including traditional and renewable energy sources." Among other priorities noted:

- Transformation of the U.S. into a net energy exporter.
- The creation of millions of new jobs.
- Protecting the country's most valuable resources our clean air, clean water and natural habitats.

The new Administration highlights America's vast energy resources of coal, oil and natural gas, noting that these resources "represent trillions of dollars in economic output and countless American jobs, particularly for the poorest Americans." The Administration has signaled its intent to encourage the production of these resources, streamlining the permitting process and mitigating regulatory barriers for energy projects.

In lifting restrictions on various American energy projects, the Trump Administration seeks to provide "more jobs, more revenues, more wealth, higher wages, and lower energy prices."

https://www.greatagain.gov/policy/energy-independence.html

Currently heading up President-elect Trump's Energy Department transition

team is Thomas Pyle, President of the <u>American</u> <u>Energy Alliance</u>, a not-for-profit organization that engages in grassroots public policy advocacy and debate concerning energy and environmental policies. AEA is the advocacy arm of the <u>Institute for</u> <u>Energy Research (IER)</u>, a not-for-profit organization founded in 1989 that conducts intensive research and analysis on the functions, operations and government regulation of global energy markets.

NCC stands ready to continue its legacy of providing informed guidance to the U.S. Secretary of Energy on coal issues.



NCC LEADERSHIP

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

Mike Durham, NCC Chair Principal, Soap Creek Energy

Lisa J.N. Bradley, PhD, DABT Vice President/Sr. Toxicologist Haley & Aldrich

Ted Doheny, President & CEO Joy Global

George Duggan, VP Coal BNSF Railway

Michael Jones, VP R&D Lignite Energy Council David Lawson, VP Coal

Norfolk Southern Corporation 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

Finance Committee Chair ~ Gregory Workman

Communications Committee Chair ~ Lisa J.N. Bradley

NCC Staff/Support Janet Gellici, NCC CEO Hiranthie Stanford Director Membership & Meetings Fred Eames/Julia d'Hemecourt NCC Legal Counsel Hunton & Williams

NationalCoalCouncil.org

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NCC Community News

NCC members are invited to submit news items regarding their companies and organizations to Janet Gellici at <u>info@NCC1.org</u>.

Holly Krutka, Tri-State G&T Carbon XPrize Judge



Holly Krutka was busy this summer poring over 47 entries submitted from around the world to determine which teams

world to determine which teams had the best shot at achieving the

audacious goal of turning CO₂ from a power plant into products with the highest net value. Thanks to Holly's efforts, 27 teams were indentified to move on to Round 2 of the competition. <u>http://carbon.xprize.org/</u>

Maohong Fan, University of Wyoming

Low-Energy Consumption CO₂ Capture & Conversion

One of the XPrize teams that qualified for Round 2 is lead by NCC member **Maohong Fan**, at the University of Wyoming's School of Energy Resources. Congratulations, Maohong, and best of luck in the competition going forward. <u>http://carbon.xprize.org/teams</u>

Benjamin Sporton, World Coal Association Bloomberg Interview on Trump Presidency

Benjamin Sporton, Executive Director of the World Coal Association was featured on Bloomberg discussing the positive impact on coal from President-elect Trump. <u>http://www.bloomberg.com/news/videos/2016-12-</u> 01/the-positive-impact-on-coal-from-president-elect-trump

Ken Nemeth, Southern States Energy Board Vello Kuuskraa, Advanced Resources International Featured Speakers: CO₂ Conference Week

Ken Nemeth, Secretary and Executive Director of SSEB and Vello Kuuskraa, President of Advanced Resources International will "Be Part of the Conversation" during CO₂ Conference Week in Midland, Texas, December 6-8. Ken and Vello will each be deliverying presentations at the 14th Annual EOR Carbon Management Workshop. http://www.co2conference.net/

Jeff Erikson, Global CCS Institute The Global Status of CCS: 2016

The Global CCS Institute recently released The Global Status of CCS: 2016 report, now in its seventh year. The report highlights a number of significant operational milestones reached in 2016 and key projects that have either entered operation in 2016 or are very close to commencing operation. Global Status of CCS 2016 Summary Report

COAL RESOURCES & NEWS

U.S. Department of Energy www.energy.gov Office of Fossil Energy

National Energy Technology Laboratory <u>www.netl.doe.gov</u> <u>Coal & Power Systems</u>

China Announces Massive 20% Increase in Coal 2020 Watts Up With That? 11-7-16

China Aims for Major Emissions Reduction 2020 Exchange Monitor 11-8-16

Starved of coal, China steel mills opt for output cuts <u>Reuters 11-7-16</u>

CCUS About to Turn the Corner – DOE David Mohler Exchange Monitor 10-7-16

Is replacing coal with natural gas actually good for the climate? Phys.org 11-7-16

Coal may surpass natural gas as most common electricity generation fuel this winter <u>EIA 11-18-16</u>

Money for nothing: Rethinking CO2 <u>The Hill 10-14-16</u>

Innovation-based Climate Plan Better than Carbon Price – Sask Premier Exchange Monitor 10-19-16

To Fight Climate Change, Institute a Four-day Workweek <u>Government Exec 10-11-16</u>

Why Carbon Capture is Just as Important as Renewable Energy

<u>Globe and Mail 10-9-16</u> Abu Dhabi starts up world's

first commercial steel carbon capture project <u>The National 11-26-16</u>

> National Coal Council NationalCoalCouncil.org



MORE NCC COMMUNITY NEWS ...

Betsy Monseu, American Coal Council

2017 Tomorrow's Leadership Council Forming

The American Coal Council's Tomorrow's Leadership Council (TLC) is designed to

advance and vest executive talent in the coal industry. The Council provides a meaningful opportunity for up-and-coming executives to enhance their industry knowledge and networks through projects and activities that advance industry-wide objectives as well as professional development goals. Registration is now open for those interested in participating: <u>https://americancoalcouncil.site-ym.com/?tlc</u>

Paul Feldman, Midcontinent ISO (MISO)

Featured Presenter: NCAC-USAEE

Paul Feldman, Board member and past Chairman of the Midcontient ISO (MISO) delivered a presentation at the National Capital Area Chapter of the U.S. Association for Energy Economics in November 2016. Paul's presentation, which focused on Cybersecurity and the Grid, can be accessed at the NCAC website at: <u>http://www.ncac-usaee.org/pdfs/2016_11Feldman.pdf</u>

Bill Raney, West Virginia Coal Association

Fox Business Interview on Trump Administration

Bill Raney, President of the West Virginia Coal Association discussed how President-elect Trump can help the coal industry during an interview on Fox Business.

http://video.foxbusiness.com/v/5222225364001/?#sp=show-clips

Greg Workman, Dominion Energy

Featured Speaker: Lexington Coal Exchange

Greg Workman, Director/Fuels with Dominion Energy and NCC Vice Chair 2016 will be the featured speaker at the Lexington Coal Exchange's December 9th luncheon. <u>http://www.lexcoalexchange.org/home.html</u>

Kipp Coddington, Univ. of Wyoming, Carbon Management Institute

Thank You!

NCC would like to thank Kipp Coddington for being the first to pay his 2017 membership dues! Invoices for 2017 dues were emailed and mailed to all NCC members in mid-November. If you've not received your dues invoice for 2017, please contact the NCC office at <u>info@NCC1.org</u>. Kipp we appreciate your leading the way!



NCC Report Cited in NEORI Transition Team Letters

Prior to the November Presidential election, the National Enhanced Oil Recovery Initiative (NEORI) submitted memos identifying policy priorities to both the Democratic Presidential Transition Team and the Republican Presidential Transition Team. NEORI, which represents industry, organized labor and the environmental community, supports accelerated commercial deployment of CCUS as an energy, economic and environmental priority for the U.S.

In the memos, NEORI identifies as priorities many of the measures detailed in the NCC's <u>Leveling the Playing</u> <u>Field: Policy Parity for CCS Technologies</u> report (Nov. 2015), including support for reform of the Section 45Q Tax Credit for CO₂ Sequestration, Private Activity Bonds (PAB), Master Limited Partnerships (MLP), price stabilization mechanisms (contracts for differences), and increased appropriations for carbon capture RD&D.

The NEORI memos reference findings from the NCC's most recent report for Secretary Moniz, <u>CO₂ Building</u> <u>Blocks: Assessing CO₂ Utilization Options</u>, noting that "estimates suggest that the oil and gas industry could technically produce between 56-106 billions of barrels of additional American oil from existing conventional oil fields using CO₂-EOR technology. This would involve the use and storage of 22.3-33.1 billion metric tons of CO₂."

NCC Member Focus

Massood Ramezan was appointed to serve on the National Coal Council in 2009 and has been an active member of the Coal Policy and the Nominating Committees. Massood has been engaged in numerous NCC reports, helping to develop report outlines, and draft and review text. He is a volunteer coordinator's paragon – he promises to do something and gets it done! Thank you for your service, Massood!

Massood Ramezan has 30 years of diverse experience in energy research & engineering, technical project management, strategic planning, energy technology assessment, process evaluation/due diligence analysis, and technical consulting in the areas of advanced energy systems and environmental control technologies.

Massood earned his B.S., M.S. and Ph.D. all in Mechanical Engineering from West Virginia University, Morgantown, WV. He is a registered Professional Engineer.

After earning his Ph.D., and a short period of university teaching and post-doctoral position, he joined Burns & Roe (now POWER Engineers) as a Project Engineer. He then worked for SAIC (now Leidos), as Assistant Vice President/Senior Program Manager; he was also elected as a SAIC Technical Fellow. He then joined Leonardo Technologies, Inc., as a Division Director/Senior Technical Advisor. Massood currently serves as Senior Technical Advisor with KeyLogic Systems, Inc.

Massood is experienced in program planning and technical/economic evaluation and assessment of advanced energy and environmental technologies, as well as energy and environment project coordination. His specific areas of expertise include conventional and advanced energy conversion systems, energy system analysis/engineering, global climate change, and environmental systems involving coal power generation, alternative energy, carbon management and innovative environmental control processes.

Massood chairs the advisory board of the International Pittsburgh Coal Conference, and is a member of the Conference Committee for the Clearwater Clean Energy Conference and of the Program Committee for the PowerGen Conference.

He has over 100 technical energy related publications. He is also listed in: American Men and Women of Science, Who's Who in Environmental Registry, Who's Who in Technology Today (Mechanical), Marquis Who's Who in Science and Engineering - 5000 Personalities of the World and Marquis Who's Who in the World.



MASSOOD RAMEZAN SENIOR TECHNICAL ADVISOR KEYLOGIC SYSTEMS, INC.

KeyLogic Systems, Inc. is a leading professional services and engineering firm that provides technical, business intelligence, information technology, and program and project management solutions to government and commercial customers. The company currently supports the National Energy Technology Laboratory (NETL) under the Mission Execution and Strategic Analysis contract with expertise in operations management, solicitation support, carbon capture and sequestration, power plant process technology, life cycle analysis, energy system modeling and in other areas that contribute to the mission of NETL and the U.S. Department of Energy.

KeyLogic Systems is known for providing timely, innovative solutions to challenging problems as well as for an extraordinary commitment to customer service, which resulted in the company being named the U.S. Department of Energy's Small Business of the Year for 2014 and the Small Business Administration's National Prime Contractor of the Year for 2015.

www.keylogic.com



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NATIONALCOALCOUNCIL **NCC ACTIVITIES & NEWS**

NCC 2017 SPRING MEETING CONFIRMED MARCH 14-15 - OLD TOWN ALEXANDRIA, VA



The 2017 Annual Spring Meeting of the National Coal Council will be hosted March 14-15 at the Sheraton Suites Old Town in Alexandria, Virginia. Located on the banks of the Potomac River within eyesight of Washington, DC, Alexandria, VA is nationally recognized for its rich history and beautifully preserved 18th and 19th century architecture. The city boasts acclaimed restaurants and a vibrant arts and cultural community. http://www.visitalexandriava.com/

The Sheraton Suites is an all-suites hotel located iust minutes from all that Old Town Alexandria has to offer. The hotel offers complimentary shuttle service to the Alexandria Metro Station which makes getting into Washington, DC quick and easy. Complimentary shuttle service to

BECOME A

Reagan National Airport and to the Old Town Alexandria dining and shopping district is also provided. http://www.sheratonsuitesalexandria.com/

Work on program development is underway by NCC volunteers. The Spring 2017 Program Development Committee includes: David Denton (RTI International), Ellen Ewart (Wood Mackenzie), Jerry Oliver (Global Tech Management) and Connie Senior (ADA-ES). Thanks to these folks for their help. If you have speaker or topic suggestions, please let us know asap (info@NCC1.org).

Please consider sponsoring the 2017 Spring Meeting

The 2017 Spring Annual Meeting will provide us with an opportunity to welcome new appointees to the U.S. Department of Energy and to acquaint them with our members and the activities/objectives of the NCC. We've already extended an invitation for new DOE appointees to join us and address the Council.

We'd like to host a GREAT event ~ you can help. Please consider a sponsorship for the NCC Spring 2017 meeting; we welcome sponsorship support from \$500-\$5,000 and we'll work with you to design something that provides the greatest visibility and benefit for your company. For information on sponsorships, contact NCC Meetings Director Hiranthie Stanford at hstanford@NCC1.org.

Schedule at a Glance:

Tuesday, March 14th

Noon-1:15 pm	NCC Carbon Management Subcommittee (tentative)
1:30-2:30 pm	NCC Communications Committee
5:30-6:00 pm	New & Prospective Members Reception with NCC Leadership
6:00-7:30 pm	Welcoming Reception

Wednesday, March 15th

SPONSO 7:30-8:30 am Continental Networking Breakfast 8:30 am-12:15 pm NCC Full Council Meeting 12:15-1:15 pm Networking Lunch (option/pre-registration and payment required)

Check the NCC website Events Page for registration details and updates on the 2017 Spring Annual Meeting program. http://www.nationalcoalcouncil.org/page-NCC-Events.html

NATIONALCOALCOUNCIL

NCC ACTIVITIES & NEWS (continued) NCC SPEAKING ENGAGEMENTS

NCC's CEO, Janet Gellici, was pleased to deliver a briefing for the U.S. Energy Association (USEA) in Washington, DC on November 30th regarding the NCC's most recent report - <u>CO₂ Building Blocks:</u> <u>Assessing CO₂ Utilization Options</u>. Thank you **Vello Kuuskraa (Advanced Resources International)** who attended the briefing and helped address numerous questions on CO₂-EOR following the presentation.

On December 19th, Gellici and CO₂ Building Blocks Report Chair, **Kipp Coddington (University of Wyoming, Carbon Management Institute)** will be briefing senior staff from the U.S. Department of Energy on the findings and recommendations from the recent report. These briefings have become standard protocol for the NCC and help amplify the work of the Council and enhance opportunities to implement recommendations in NCC reports.

Upcoming presentations by Gellici:

~ Carbon Management Technology Conference - July 2017, Houston



NCC CHAIR'S LEADERSHIP COUNCIL

The NCC's Chair's Advisory Council (CAC) has been restructured to enhance the value and opportunity for coal industry leaders to help NCC advance a positive agenda for Council stakeholders. The **CHAIR'S LEADERSHIP COUNCIL (CLC)** is a coalition of coal industry leaders from varied disciplines drawn from the NCC membership. The CLC provides a forum for

industry savvy, committed NCC members to provide strategic guidance to the Council and develop plans and programs in pursuit of NCC objectives.

The NCC has an increasingly important role to play this coming year in advising the incoming Trump Administration and the new Secretary of Energy on the objectives and work of the NCC. The reports NCC has prepared under Secretary Moniz's tenure include findings and recommendations of particular relevance to the incoming Administration's stated objectives to reinvigorate the U.S. coal industry.

CLC members will be called upon this year to help acquaint the incoming Administration with the activities and objectives of the Council and to set priorities for the Council's future reports for the new Secretary of Energy. Please join us in the important undertaking.

We are now welcoming memberships for the 2017 Chair's Leadership Council. If you are interested in participating or would like additional information, please contact Janet Gellici at jgellici@NCC1.org. Thank you to the following organization for their CLC 2017 membership!











HEADS UP ACCOUNTS PAYABLE: NCC NEW OFFICE ADDRESS & FAX

NCC membership dues invoices for 2017 were mailed and emailed to all NCC members in mid-November. Please ensure that your Accounts Payable folks have our new address:

1101 Pennsylvania Ave., NW, Suite 300, Washington, DC 20004 - Phone ~ 202-756-4524, Fax ~ 202-688-2201

News Worthy from the Department of Energy



DOE Announces \$80 Million Investment to Build Supercritical CO₂ Pilot Test Facility

DOE is awarding up to \$80 million for a six-year project to design, build and operate a 10-Mwe supercritical carbon dioxide (CO₂) pilot plant test facility in San Antonio, TX. The project will be managed by a team led by the Gas Technology Institute (GTI), Southwest Research Institute® (SwRI®) and General Electric Global Research.

The new facility will support the future commercialization of sCO₂ Brayton cycle energy conversion systems by testing and demonstrating the potential energy

efficiency and cost benefits of this technology. Today, the average efficiency of the U.S. fleet of steam Rankine cycle power plants is in the lower 30% range. This new facility has the potential to demonstrate greater than 50% cycle efficiency. If successfully developed, the supercritical CO₂ power cycles could provide significant efficiency gains in geothermal, coal, nuclear and solar thermal power production. http://energy.gov/under-secretary-science-and-energy/articles/doe-announces-80-million-investmentbuild-supercritical

DOE Announces More than \$44 Million for CO₂ Storage Projects

http://energy.gov/under-secretary-science-and-energy/articles/energy-department-announces-more-44-million-co2-storage

On November 30th, the U.S. Department of Energy's Office of Fossil Energy announced the selection of 16 carbon storage projects to receive more than \$44 million for cost-shared R&D as part of DOE's Carbon Storage Assurance Facility Enterprise (CarbonSAFE) initiative. Projects selected as part of this initiative will address key research gaps in the path toward the deployment of CCS technologies, including the development of commercial-scale (50+ mmt of CO₂) geologic storage sites for CO₂ from industrial sources, such as cement and iron and steel production. Among NCC member organizations selected:

Carbon Management Institute at the University of Wyoming (Laramie, Wyoming) — Two projects (DOE Cost: \$2,385,919):

- A pre-feasibility assessment for secure, commercial-scale CO₂ capture and storage will be performed at the Rock Springs Uplift (RSU).
- A scenario will be considered that includes a CO₂ source assessment based CO₂ capture at Basin Electric Power Cooperative's Dry Fork Power Station, which also houses the Wyoming Integrated Test Center, a CCS test Facility.

Battelle Memorial Institute (Columbus, Ohio) — Three projects (DOE cost: \$3,590,512):

- A commercial-scale Integrated Mid-Continent Carbon Stacked Storage Hub will be developed in Nebraska and Kansas.
- A pre-feasibility effort will be conducted for developing an integrated commercial CO₂ storage site for deep geologic intervals in the Central Appalachian Basin in the 2025 timeframe.
- An integrated commercial CO₂ storage site for deep geologic intervals will be developed in the Northern Michigan Basin.

Electric Power Research Institute (Palo, Alto, California) — Will conduct an initial assessment of the technical, economic, social and regulatory/policy challenges and solutions that must be addressed to develop a commercial-scale CO₂ storage complex in the southern San Joaquin Valley (SSJV), California. DOE Cost: \$969,136.

University of North Dakota (Grand Forks, North Dakota) — Will determine the feasibility of integrating commercial-scale CO₂ capture of industrially sourced CO₂ emissions from Nebraska Public Power District's Gerald Gentleman Station with proximal storage and minimal transportation. DOE Cost: \$1,244,473.

Southern States Energy Board (Norcross, Georgia) — Will establish a commercial-scale CO₂ geologic storage complex adjacent to the Mississippi Power Company Kemper County Energy Facility. DOE Cost: \$11,220,537.

University of North Dakota (Grand Forks, North Dakota) — Will determine the feasibility of developing a commercial-scale CO₂ geologic storage complex in central North Dakota. DOE Cost: \$8,787,622.

WHO KNEW?* Canada's CCCI Teams up with NRG COSIA Carbon XPrize



http://www.cmc-nce.ca/business-units/ccci/

Teams in the NRG COSIA Carbon XPRIZE competition will be able to use the CMC Research Institute's Carbon Capture and Conversion Institute (CCCI) in Canada under a partnership announced on December 1st, 2016. The \$20 million Carbon XPRIZE competition aims to convert CO₂ into useful products. Round-two of the competition is underway in which the selected teams will conduct pilot-scale demonstrations of their technologies in a controlled environment using simulated power plant flue gas.

The CCCI team will work with semi-finalists participating in Round 2 to design, build and test their technology at pilot scale (about 100 kg/day). Teams who move to Round 3, the Finals, will demonstrate their technologies at a commercial scale at one of the two Carbon XPRIZE test sites of the competition finals. Teams will be scored on how much CO₂ they convert and the net value of their products. http://cmcghg.com/nrg-cosia-carbon-xprize-and-cmc-research-institutes-announce-partnership/

CMC Research Institutes (CMC) is an independent, not-for-profit business with one key mission – accelerating the development of technologies to eliminate industrial greenhouse gas (GHG) emissions. The organization provides field testing and piloting facilities to clients in oil and gas, oil sands, electricity generation, and cement and chemical manufacturing. Its aim is to rapidly move concepts from the lab bench to the field while effectively managing risk at every step of the way.

The mission of CMC's Carbon Capture and Conversion Institute is to accelerate the development of carbon capture and conversion technologies for use in industry. The Institute is being developed through a collaborative partnership between CMC, BC Research Inc. and the University of British Columbia. Pilot and testing facilities are under construction in Richmond, B.C. and will be complete in early 2017. http://ccci.cmcghg.com/about-us/

Multiple technologies accommodated

The CCCI can accommodate a broad range of technologies from solvent systems, membranes and sorbents on the capture side, to chemical, electrochemical and even biological systems in the conversion stream. CCCI also has capabilities and expertise in pre-combustion capture and the decarbonization of fossil fuels.

In its quest to accelerate the development of capture and conversion technologies, the facility brings together researchers, engineers and business development professionals from the Institute's three founding organizations to work with clients. If in-house expertise is not available, the Institute reaches out to its global network of experts.

CCCI is located in Vancouver, British Columbia.