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FEATURES

The Energy-Election Nexus
By Marita Noon, Executive Director, Energy Makes America Great, Inc.
The energy environment under the Obama Administration offers little to cheer about. There is, however, reason for hope regarding President Obama’s executive overreach. The election’s outcome is essential.

If You are a SAHM, You Should Support Coal
By Zoe Richmond
After leaving her former career in Public Relations, now stay-at-home mom (SAHM) Zoe Richmond, sheds light on the realities of coal and energy use at home, and why moms should be at the forefront of the support.

GEM and the Art of Energy Balance
By Jim Marchiori, University of Colorado
The global energy business operates on two imperatives. One is a compelling need for energy around the world, and the other is to limit the effects that energy has on the environment. Achieving a balance between these two imperatives will be the fundamental question for this and the next generation of leaders in the global energy industry.

The Chinde Project – A Study in Reclamation and Proper Land Stewardship
By Dan Ware, BHP Billiton
The award-winning Chinde project showcases innovative reclamation at the Navajo Mine, resulting in a landscape that is self-sustaining and cost-efficient.

SPOTLIGHTS

Presidential Candidates’ Energy Policies and Their Potential Impact on Coal
By Dr. Roger H. Bezdek, MISI
The 2016 presidential election is seen as historically significant, and the election may have some unpredictable consequences. However, the direction of our nation's post-election energy policy is more predictable, as seen from the announced platforms and plans of the presidential candidates. You'll want to be sure that you are informed about each candidate's energy policies, and their possible effects.

The Not-So-Dormant Commerce Clause and Coal-Based Electricity
By Paul M. Seby & Matthew B. Miller, Greenberg Traurig, LLP
In our national charter lies an important mechanism that may provide important protections against efforts by one or more states to greatly experiment with dramatic changes to their energy-related laws and regulations that have adverse impacts on coal-based electricity or the movement of coal interstate.

The Imperative for Broader, Bolder Action on Carbon Capture Utilization and Storage
By Shannon Angielski, Coal Utilization Research Council
A recent study conducted through CURC with the support of Japan’s New Energy and Industrial Technology Development Organization (NEDO) concluded that despite nearly two decades of support in numerous countries, progress in developing CCS has been modest. What’s needed to achieve broader, bolder action?
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Thank you for 11½ Years of Working Together for Coal

Love the job you do and you’ll never work a day in your life

It is with mixed feelings that I write this final Editor’s Message for American Coal magazine. I have been a part of the ACC for the past 11½ years, engaged with and on behalf of our members in actively promoting the use of coal in the American energy mix and its value as a critical resource. Prior to my time at the ACC, I spent 3 years working with the Coal Association of Canada (CAC) working on similar objectives. Before that, I came from an environmental science background, studying and working in natural resource management and policy/think tanks. I am now transitioning my work and efforts from a purely coal focus to a broader discussion about energy and the environment as the Director of Environmental Policy at the Mackinac Center for Public Policy.

We often hear hyped-up media reports that attempt to paint the North American coal industry as oversized or imposing. However, those of us who have worked in the industry know it is actually a close-knit group, a place where you quickly come to know and trust an easily recognizable team of faces and friends.

It is the close-knit nature of our industry that it has made it like a family for me for so many years. I have enjoyed the opportunities this industry provided for my family and I will always be grateful for the relationships I have been able to cultivate with dedicated professionals and member companies at the ACC.

While I will miss the people and the coal industry, I am very excited to take on the task of building a new program, focused on energy and environmental policy in Michigan and the Great Lakes Basin area for the Mackinac Center.

Culture – why do we do what we do? What are we trying to accomplish?

As I chart this new course, I will take with me many of the lessons I have learned from the ACC and its members. I will focus on the importance of remembering why we do what we do. ACC brings together a vibrant network of industry professionals, and actively promotes the business and professional interests of its membership. ACC’s initiatives, including this magazine, serve to educate and inform a wide variety of stakeholders – members, policy makers, elected officials, the media, and the public. With the increasingly challenging regulatory and business environment faced by our members and the industry, the importance of our work on behalf of the coal industry has grown.

The ACC’s focus on educating industry, elected officials, and the public
about the value of coal-fueled electricity to the economic well-being of American families and businesses has never been more important.

At a more fundamental level, the ACC’s work supports the ability for coal and other fossil fuels to provide humanity with the historically unusual ability to improve the environment in which we live. Taking a line from Alex Epstein, fossil fuels don’t make an intrinsically safe environment dangerous for humanity; they make an intrinsically dangerous environment safe for humanity. Through its advocacy and educational work promoting coal and clean coal technologies, the ACC’s work is ultimately part of a far larger endeavor to improve human lives, extend human longevity, and encourage a healthier and cleaner human environment.

Some – those who parrot misleading characterizations like “dirty coal” – will scoff at the notion that coal-fueled energy could do anything other than cause harm. However, the reality is the mix of fossil fuels and human ingenuity has allowed humans to build weatherproof habitations, heat and cool those habitations efficiently, access far-away countries quickly and affordably, grow massive quantities of healthy and disease-free foods, purify essential water resources for drinking and irrigation, create life-saving medical advances, and achieve many other equally important successes.

By almost every measure, human lives have been improved through our increased reliance on abundant, reliable, affordable energy. Fossil fuels are the primary source of that energy and coal is and will continue to be a primary fossil fuel.

Thank You

As I move on to my new work at the Mackinac Center, I would like to thank the staff and members of the ACC for allowing me the honor of spending 11½ thoroughly enjoyable, productive, proactive years with you. Of the many ACC programs and services I have been involved with, acting as editor of American Coal Magazine has been a highlight. It has produced a body of work that I am extremely proud of.

I look forward to reading and hearing about your future successes.
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ACC’S STATEMENT ON THE WHITE HOUSE COUNCIL OF ECONOMIC ADVISORS REPORT ON FEDERAL COAL LEASING (06.27.16)

The recent report on the economics of federal coal leasing issued by the Obama administration’s Council of Economic Advisors (CEA) is extremely troubling. This government modeling exercise addresses the question of whether an increase in royalty rates by the Department of the Interior will increase or decrease government revenues. The CEA’s answer is that it will increase them. However, the conclusions reached by CEA in answering ‘yes’ to that question show a complete disconnect between its theoretical modeling results and the way the real-world coal marketplace functions. The CEA therefore misrepresents the outcome of such a policy change and its report must not be relied on.

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ACC COMMENTS SUBMITTED TO THE DEPARTMENT OF ENERGY’S QUADRENNIAL ENERGY REVIEW 1.2 (06.21.2016)

EPA’s CO2 rules pursue a misguided path on energy policy for the United States. Coal technology advancement would cease and the Clean Power Plan would inappropriately put EPA, the environmental regulator, on a path to control our energy and electricity. EPA’s Clean Power Plan is unreasonable, unrealistic, and unworkable. It would impose enormous costs and risks on American households and businesses.

The American Coal Council again stresses the need for DOE to actively support electricity sector stakeholders to ensure that the fundamental objectives of providing safe, affordable, and reliable electricity in the U.S. can continue. Instead of overreaching regulations prescribed by EPA and others, an “all of the above” strategy using the abundance of America’s energy resources, advancing technology solutions, and remedying the policy disparity issue is a far better approach.

- americancoalcouncil.org

SOMETHING TO DO:
Coal Trading Conference
December 5-6, 2016
Marriott Marquis, New York, NY

Spring Coal Forum
March 7-9, 2017
Opal Sands Resort, Clearwater, FL

SOMETHING TO REMEMBER:
“Every generation stands on the shoulders of its ancestors. Our ancestors have harnessed energy to steadily improve the state of the world. There is a very good reason advanced peoples don’t use sun panels and windmills to power their societies. It’s called the evolution of knowledge. We use coal and gas instead of windmills for the same reason that wheels aren’t made of stone anymore. Windmills are to power generation what carrier pigeons are to communications.

Fossil fuels have been one of the greatest anti-poverty programs in history, improving the human condition more than all of the trillions of dollars of government welfare programs and foreign aid programs combined.”


SOMETHING TO READ:
Fueling Freedom: Exposing the Mad War on Energy
By Stephen Moore and Kathleen Hartnett White
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Resilience and the Road Ahead

The coal supply chain continues to adapt to the forces of energy markets and regulation. The winter of 2016 failed to materialize, causing demand to plunge and inventories to spike. By spring, additional power sector coal generating capacity was shuttered as compliance plans made while the Environmental Protection Agency’s (EPA) mercury rule wound its way through the courts were put into place – although the Supreme Court struck down the rule last summer. The mild 2016 winter was followed by a better summer story, with heat and extreme heat across much of the nation. While in the past the fortunes of the coal chain have tended to rise with temperature extremes and fall without them, weather impacts are part of a far more complex set of business and market conditions now. In addition to the depth of the cold and the strength of the heat, our industry circumstances are affected by changes in natural gas prices and whether or not the wind is blowing or the sun is shining. They are subject to compliance with new and changing federal regulations, and the threat of even more rules from agencies in Washington, DC whose leadership and employees are insulated from the impacts of their regulatory actions.

Market pressures have affected the entire energy spectrum. Coal, oil, and natural gas have all been impacted by a tepid economy and slow growth in energy demand, forcing rationalization of energy markets. Job losses, bankruptcies, and restructurings have occurred across the oil, natural gas, and coal segments. Business cycles are not new to any of these commodities, of course. The natural gas markets are in need of higher overall prices to support the industry, and this should carry over into coal and provide opportunities for its continued key role in the fuels mix.

However, for coal this cycle is more than another commodity cycle and represents a secular shift. Much of this is driven by the extreme federal regulatory agenda so pointedly focused on coal. The coal sector is confronted with additional regulatory costs and restrictions, in addition to contending with challenging market conditions. Beyond that, state and federal government mandates continue to force coal’s competitors into electricity generation markets, our largest market sector.

All of this means less predictability than ever for producers, suppliers, and traders of coal, transportation companies and terminals, and power and industrial plant consumers, along with the many services partners that together make up the coal community.

Faced with a much more difficult planning and operating environment, the coal supply chain is responding with the conviction to compete in what has distinctly become our new normal environment. We are still finding our way, but the level of resilience and determination is admirable. Working through difficult circumstances including consolidation, restructuring, and contract and labor negotiations, a path is being created to a more equalized market with stronger players.

This conviction to compete is rooted in our core belief that coal is an important commodity with proven value and benefits. It has been the mainstay of affordable electricity and economic stability in the U.S. It is the energy solution for developing nations to electrify their economies and provide better and healthier living conditions for their citizens – improved cooking methods, medical care, sanitation, lighting, warmth and cooling, and clean water.
From a policy standpoint in the United States, there is a growing recognition that coal will continue to play a key role. Studies continue to highlight the risks of moving the U.S. power plant fleet towards large amounts of natural gas and renewables. Natural gas risks include price and price volatility, and infrastructure and deliverability. Renewables risks include intermittency, low efficiency, outsized land requirements, and threats to plant and animal species. Coal is a critical fuel source to mitigate such risks and maintain electric grid reliability.

The continuation of clean coal technology advancement and deployment is necessary to balance economic and environmental objectives in the future, both domestically and globally. The historical success in reducing emissions in the existing U.S. power sector coal fleet can be leveraged globally. The construction of higher efficiency and lower emissions coal plant technology occurring prominently in places like South and East Asia is a model for deployment elsewhere. The U.S. must redirect its energy policy to an all of the above approach to remove existing regulatory barriers and actively support coal plant technology development. This will not only drive continued emissions improvements, it will preserve diversity and fuel choice in power sector and industrial plants.

The resilient American coal industry will continue to contribute to the economy and well-being of our nation. As the American Coal Council approaches 35 years of service to the industry, there are pages to turn and new chapters to be written. Your engagement with ACC enhances our efforts to strengthen the collective voice of coal in representing our industry's essential energy role.
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We redefined the term CCS for use as the theme of the recent American Coal Council 2016 Coal Market Strategies conference. The traditional CCS reference of “Carbon Capture and Storage” was expanded to “Change, Challenge and Sustainability.” Our program covered timely coal-related markets, policy, regulation, and technology topics.

Change, Challenge and Sustainability are the order of the day for coal. These are words that describe our industry now and will define it in the future. It’s a tumultuous tug-of-war of sorts, as the essential contribution of our industry to the economy and well-being of our country continues to be recognized even while the governmental regulatory barriers pile on against us.

Bill Kovacs, Senior Vice President of Environment, Technology, and Regulatory Affairs at the U.S. Chamber of Commerce, spoke at Coal Market Strategies and assured us that coal is not alone with regard to facing an increasingly stringent regulatory environment. He discussed the evolution of regulation in the U.S. and the challenges posed by the ease of enacting federal regulation compared to the process of passing laws, as shown in the illustration below – the latter being made purposely difficult in the structure of the Constitution of the United States. ¹

Bill explained that over time, as Congress passed broad, vague laws and the courts deferred to agency decisions, the stage was set for more and increasingly aggressive agency rules. The data bear this out, with 190,000 new regulations enacted since 1976 and a larger number of them in the category of “billion dollar rules” (those costing $1 billion dollars or more annually).²

Moreover, what is so frustrating to industry in general and certainly what we find in coal is that expensive new rules are completely lacking in commensurate benefits. There are no trade-offs to be had in terms of environmental improvement, or even more streamlined, effective, or certain regulatory processes and outcomes. Regulation has become only about costs, compliance burdens, and lost jobs.

Rule-making for a federal agency should be just as rigorous as law-making is for Congress. Agencies should not by default have the ability to harm industries and destroy jobs while their regulations are being challenged in the courts – think EPA MATS. And while the recent unprecedented Supreme Court ruling to stay EPA’s Clean Power Plan is encouraging, shouldn’t there be an automatic stay of high-impact regulations?

The pendulum has swung too far in the direction of regulation, and the new administration and congress must change course to right the wrongs created by these regulatory forces.

Along with that, our elected and appointed officials must address energy policy in ways that effectively recognize America’s energy abundance and opportunity. This must include coal, which is conspicuously off of the following list of recent energy policy developments:

1. FERC and DOE have been approving LNG export terminals, and the first LNG export shipment occurred in February 2016.
2. Congress lifted the 40-year ban on oil exports in December 2015. Within weeks, oil exports commenced.
3. Congress extended incentives for renewable energy in December 2015 – the Investment Tax Credit (ITC) for solar and the Production Tax Credit (PTC) for wind. GTM Research has projected that the ITC will help to facilitate $130 billion in solar investment by 2020, with more than $40 billion of that directly attributable to the ITC extension.³
Support for coal is critically needed and well-justified. Consider the strong record of progress in reducing U.S. coal power plant emissions of sulfur dioxide, nitrogen oxides, and particulate matter. The coal fleet reduced these emissions by 92% per kWh through 2015. Over 90% of the electric power sector’s coal generating capacity has installed advanced emissions controls that reduce these emissions and additionally emissions of mercury, acid gases, and non-mercury metals. Industry investments of $111 billion were made through 2015 to facilitate these emissions improvements.¹

This progress must not be stalled, and these investments must not be stranded. Yet that is where regulatory initiatives are intended to take us, whether from EPA or the Department of the Interior. Coal mining and coal consumption are under dual assault. Not only do these all pain - no gain regulations need to be rolled back, but policy support for advanced coal technologies needs to move forward.

The disparity is glaring. For example, government support for renewables dwarfs support for carbon capture and storage technology. In its 2015 report “Leveling the Playing Field – Policy Parity for Carbon Capture and Storage Technologies” for the Secretary of Energy, the National Coal Council found that renewables received $37 billion in tax credits and incentives over the period 2010-2014, while carbon capture and storage received only $1 billion.² Tax credits for wind and solar have been successful in lowering the costs of these technologies, enabling their growth and deployment, and setting them on course to become self-sustaining industries. Widespread state renewable programs and mandates have also been instrumental for the development of renewables.

“All of the above” including coal is the right energy policy for America. Unlike other countries with fewer energy resources and more limited energy choices, our nation has the advantage of diverse and abundant energy resources. We have the means to embrace “all of the above” and we need the political will to do so. Then coal’s CCS – change, challenge, and sustainability – can be better balanced for the benefit of our industry and our nation.

References
2 Ibid.
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ACC Welcomes its New Members!!

The Board of Directors has reviewed and approved the following applicants for membership in the American Coal Council. The Board and staff would like to welcome these new members, as it is only through the support of our membership and industry that the ACC can continue to provide educational programs, market intelligence, advocacy support and peer-to-peer networking forums whereby we advance members’ commercial and professional development interests.

With so many pressures continuing to face our industry, it is essential that we continue to work together to represent the collective interests of the American coal industry – from the hole-in-the-ground to the plug-in-the-wall – and advocate for coal as an economic, abundant and environmentally sound fuel source.

Welcome to:
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Jesse Creek Mining, LLC
Newmont Nevada Energy Investment LLC
Tri-State Generation & Transmission Association, Inc.
Total Spectrum/Steve Gordon and Associates

Why join the ACC

As a member of the ACC you’ll benefit from premier educational programming, broad-based, high-level networking, energy advocacy, policy input and enhanced industry visibility. Along with a suite of ACC events and publications, you’ll also see the benefits of frequent member communications and business referrals. Additionally, ACC programs, committee memberships and activities provide opportunities for members to advance their professional skills, keep current on emerging trends and industry developments, gain experience and make new contacts.

Follow this QR Code to learn more about membership in the ACC. Or contact us at American Coal Council – 1101 Pennsylvania Ave. N.W., Suite 300, Washington, D.C. 20004, info@americancoalcouncil.org, to request membership information.

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502-584-6022

Donna Cerwonka
Assistant Vice President – Utility Coal
500 Water St., J842
Jacksonville, FL 32202
www.csx.com
Phone: (904) 359-1684

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Assistant Vice President – Utility Coal
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Linda Brandl
Vice President & General Manager – Coal
1400 Douglas Street STOP 1270
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Events

Coal Trading Conference
December 5-6, 2016
New York Marriott Marquis
New York City, New York

The 2016 Coal Trading Conference is a full-day conference for industry leaders to meet. Registrants will hear speakers and panels discuss trends in the marketplace, improve their understanding of coal trading issues and facilitate business relationships among the different sectors of the utility coal business.

Spring Coal Forum
March 7-9, 2017
Opal Sands Resort
Clearwater, Florida

The Spring Coal Forum has been one of the highlights of the coal industry calendar and will attract senior industry executives from companies that produce, supply, transport, ship, trade and consume coal. The program features presentations from coal suppliers, utilities, railroads and energy traders, along with industry-wide perspectives from leading consultants and government representative
Vision Statement
ACC advances the power, the promise & the pride of America’s coal industry.

Mission Statement
American Coal Council (ACC) provides relevant educational programs, market intelligence, advocacy support and peer-to-peer networking forums to advance members’ commercial and professional development interests. ACC represents the collective interests of the American coal industry – from the hole-in-the-ground to the plug-in-the-wall – in advocating for coal as an economic, abundant and environmentally sound fuel source. ACC serves as an essential resource for industry, policy makers and public interest groups. The Association supports activities and objectives that advance coal supply, consumption, transportation and trading.

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**Working night & day to deliver premium value for our business partners**

**Westmoreland Coal Company**

**Contact us at:** (303) 922-6463

e-mail: sales@westmoreland.com

www.westmoreland.com
Tomorrow’s Leadership Council’s Coal Communications Kit

What do you say when someone attacks coal as dirty?
The ACC’s Tomorrow’s Leadership Council (TLC) is an ACC committee designed to provide emerging coal sector leaders with an opportunity to enhance their industry knowledge and networks through projects and activities that advance industry-wide objectives as well as professional development goals.

The TLC undertakes a collaborative group project annually. In 2015, a “Coal Communications Kit” was developed to educate, inform, build bridges, and counter misinformation about coal. This Coal Communications Kit provides ideas and information that coal-related industry employees and representatives supporters can use to improve communications and relations with others in the public realm.

Whether on an airplane, at a business or community event, or seeking to inform relatives and friends, coal supporters now have useful facts and information to assist them in sharing the importance, value, and benefits of coal.

The Coal Communications Kit provides ready responses to commonly held negative notions about coal. It offers convenient “elevator speeches”, Facebook posts, and Tweets, as well as more detailed information and resources.

All information is available on the American Coal Council’s website at http://www.americancoalcouncil.org/page/CCC_TOC

ACC’S COAL COMMUNICATIONS KIT:
- Technological improvements in the coal industry
- Airborne emissions and emissions reduction
- Scalability of coal as an energy resource
- Comparisons of coal vs. other fuels/energy resources
- Coal’s role in grid reliability
- Climate change
- The costs of not using coal
- Coal’s role in international trade
- Impacts of mining coal
- Coal and resource depletion
- EPA regulations
- Pollution in China

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Innovative research and development to realize CCP’s in new applications
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move mining
www.movemining.org
By Marita Noon, Executive Director, Energy Makes America Great, Inc.

The energy environment under the Obama administration offers little to cheer about. More than fifty coal companies have gone bankrupt in the past five years and, largely due to rules and regulations, the industry has suffered job losses of nearly fifty percent since 2011. On the oil front, prices are a fraction of what they were in the most recent boom times and hundreds of thousands of jobs have also been lost in that side of the energy industry.

There is, however, reason for hope regarding President Obama’s executive overreach.

Yes, even in the much-maligned coal industry, there is some good news; some pushback against the excessive regulation that has nearly “put coal miners and coal companies out of business.”

While detrimental regulations have been chipping away at coal-fueled power generation for the past seven years, the Clean Power Plan (CPP) would all but finish it off. The CPP is the cornerstone of Obama’s climate change legacy and is essential to the U.S. meeting its Paris Climate Agreement commitment for carbon-dioxide emission reductions.

As they’ve done with the Mercury and Air Toxics Standards, the courts have smacked down this huge Obama administration overreach. On February 9, the U.S. Supreme Court issued a historic stay on the CPP that halts implementation until the legal challenges are settled—though the Environmental Protection Agency (EPA) Administrator, Gina McCarthy, announced plans to keep moving it forward.

Here the election’s outcome is essential. It is expected that the CPP will ultimately end up in front of the Justices. Had the case been decided just a few weeks later, after the death of Justice Scalia, the decision likely would have been 180 degrees from what was handed down in the 5-4 case. Had the court split 4-4, as it has done with nearly every important case since Scalia’s death, the lower court’s decision would have held: the D.C. Circuit refused to stay the CPP. A President Clinton would likely appoint a Justice who would side with the CPP—in her convention speech, she addressed the importance of Supreme Court Justices. A President Trump—who favors states’ rights and has already said he’d rescind the Climate Action Plan—has said he would appoint a Justice who is as close to Scalia as possible. It is believed that if Clinton wins, and the CPP is upheld, she’ll fully embrace...
and probably expand, the emission cutting requirements. The CPP’s fate under a Trump presidency would almost certainly be death. As he opposes it, attorneys under a Trump-appointed EPA Administrator would likely take a very different approach in arguing the government’s side of the case before the Justices that, along with a Scalia-like ninth justice, would result in a decision that favors the energy industry.

More recently, the courts have again pushed back on the EPA’s anti-coal regulations. This time, on July 15, the U.S. Court of Appeals for the Fifth Circuit, in a case involving Texas, blocked the EPA’s Regional Haze Plan—a plan that has already caused the Public Service Company of New Mexico to shutter two of its four coal-fired units at one station. Even before the transition is complete, 85 jobs at the adjoining coal mine have already been lost—and that doesn’t count expected staffing reductions due to attrition at the mine and power station. Similar shutdowns, mostly due to the Regional Haze Plan, of as many as 32 coal-fired units have been, or are being, forced throughout the southwest—which results in a loss of approximately 60 percent of capacity and an untold number of jobs. The Institute for Energy Research has called Regional Haze “Obama’s stealth weapon in the war on coal.”

With his promise to save coal, coal miners have come out en masse for Trump. When asked what Trump could really do for coal, Rep. Kevin Cramer (R-ND), Trump’s energy advisor, explained that while coal-fueled power plants that have already been shut down or converted to natural gas will not likely be reopened, a Trump administration can save what’s left and stop the bleeding by not artificially punishing the industry through regulation.

Additionally, he also proposed, and the GOP party platform has embraced, reforming the EPA into more of an independent bipartisan commission—similar to the Nuclear Regulatory Commission.

There are similar victories on the oil-and-gas front.

On June 21, 2016, a federal judge, an Obama appointee, in the U.S. District Court for the District of Wyoming, struck down the U.S. Bureau of Land Management’s (BLM’s) hydraulic fracturing regulations—a rulemaking in process since 2012. Judge Scott Skavdahl found that Congress never delegated authority over fracking to the BLM or the Interior Department. In its report on the ruling, Environment & Energy Publishing declared: “The Obama administration’s hydraulic fracturing rule is dead.” The decision blocks the enforcement of the BLM’s rule and leaves the regulation of hydraulic fracturing to the individual states.

Within the states, outside groups have come in to agitate the locals in an attempt to get communities to ban fracking. Like the BLM’s rule, the courts (and, in Texas, the legislature) have determined that the regulation of hydraulic fracturing is the jurisdiction of the state. Anti-fracking activity has been thwarted in New Mexico, Colorado, Louisiana, West Virginia, Ohio, and Texas. The Obama administration has already appealed the BLM decision. It will now be heard by the Tenth Circuit Court. If decided in the government’s favor, it would send it back to the lower court to hear arguments on the specifics of the rule.

Donald Trump agrees with the courts and says fracking should be regulated by the states. While there is no official Trump statement regarding allowing states to make decisions regarding coal mining, the overall tone of his energy policy makes that a safe assumption.

Just as the Obama administration’s three-year moratorium on new coal mining leases on federal lands and changes to the federal coal leasing program are more about keeping coal in the ground than about a “fair return to taxpayers,” the attacks against hydraulic fracturing are not really about fracking. They are a covert way to ban drilling.

America’s abundant and available natural resources have provided us with energy that is effective, efficient, and economical—giving us energy security and a competitive advantage in a global marketplace. They are riches that should be managed and maximized to the benefit of our nation. They can be shipped to other countries, bringing balance to our trade deficit and offering secure supplies to our friends. Locking them up will make us more dependent on foreign countries which are hostile toward our interests—thereby hurting our allies and our balance of payments.

This election, understanding energy is essential.

Marita Noon is the executive director for Energy Makes America Great Inc., and the companion educational organization, the Citizens’ Alliance for Responsible Energy (CARE).
If You are a SAHM, You Should Support Coal

By Zoe Richmond

It may be one of the biggest dilemmas Stay-at-Home Moms face: entertaining toddlers in the throes of cabin fever. Summertime in Arizona means getting your outdoor activities done before 8 a.m. and hunkering down indoors in the afternoon. Inevitably, by 2 p.m. my two boys are begging to go outside. They are too young to understand that it is 106 degrees outside with no shade—so it’s not the healthiest time to be sprinting laps. I buy myself some time by turning the sofa into a fort.

I have managed to entertain my energy-stocked bundles of joy, at least today. However, there is the rest of the long hot summer staring us down. It makes me wonder if America’s future energy supply will be as well stocked as the energy propelling my two boys.

America’s coal supply may not be top of mind awareness for most SAHMs, but it should be. Coal is a vital component of our nation’s overall power generation. Since becoming a SAHM, I have been more conscientious of our power use. And I have realized an impact to coal has a very direct impact on my household.

Other energy sources may have flashy PR campaigns, but any good mom knows not to be swayed by glossy images. Like most moms, I turn the package around to read the label. I encourage other moms to do the same. Turn over the package to our nation’s energy consumption and you will find the following about coal:

• Coal is an abundant, reliable energy source that is mined in United States, not imported from foreign interests.

• If you support local, you should support coal. From the coal mines to the plug on your wall, the coal mining industry supports approximately 700,000 jobs.¹

• The power industry has been working diligently for many years to install clean coal technologies on plants to reduce emissions. (see more info on this in the ACC Coal Communications Kit - http://www.americancoalcouncil.org/page/airborne_emission)

• Coal is affordable. Consider coal the inexpensive bag of cereal. It may not look fancy, but you get the highest value for your dollar.

Besides my power usage, I have also become more conscious about the monthly bill that accompanies said usage. A family with a SAHM means you are budgeting with one income, so every penny counts. That’s where SAHMs should really become cheerleaders for inexpensive energy sources. Unnecessary or unrealistic regulations can only raise the cost of energy production, leading to higher utility bills for all of us.

Stay-at-home moms have a lot on their plates. From keeping the kids happy and healthy to managing the household budget on one income, it’s a pretty daunting task. But to keep the house running and literally the lights on, moms have to be more aggressive in the public policy arena.

• Your vote counts. With elections coming up, make sure you support candidates that support coal and realistic regulations.² Visit www.minethevote.com to learn more.

• Your voice counts too. Thank your local utility provider for using the energy source that helps keep your house running 24/7. Let them know you appreciate them using clean coal.

• Your questions are important. When door-to-door salespeople come to your house pressuring you about alternative energies, ask the tough questions. Look at the fine print. Is this really going to save your family money? Or are there balloon payments and long-term leases that won’t bring savings to your family in the long run?³

• Your social network is key. Start talking about the need for moms everywhere to be more conscious about our nation’s energy use. #moms4coal, every time you are happy the lights are on and the kids can watch The Bee Movie for the 800th time.

When it’s a hundred and a million degrees outside (or below freezing, as those in colder climates people often complain about) you have to worry about keeping your children safe and comfortable. That means milk and food needs to stay cold in the fridge, and the air conditioning (or heat) needs to stay on. When it comes to my children, I don’t want to take a chance. I also want to be sure that my family can stay within my carefully-developed household budget. That’s why I have to advocate for the most reliable, affordable power source available—coal.

Zoe Richmond took a detour from her corporate career in public relations to become a stay at home mom to her two sons.

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Life is often a matter of reconciling competing, even conflicting, goals. As we look broadly across the energy sector, we see two such imperatives. One is the compelling need for energy around the world, especially to lift nearly a third of the world’s population out of energy poverty. The other is an equally compelling need to do our best to limit the effects of that energy on the global environment. Achieving a balance between these two imperatives will be the fundamental question for this and the next generation of leaders in the global energy industry.

It is irrefutable that the modern energy industry forms the basis for all economic progress and creation of wealth. Whether viewed over time since the beginning of the industrial revolution 200 years ago, or over geography comparing countries in the present day, the correlation between GDP and energy usage is about as close as a statistical correlation can be. In the developed world, we are seeing for the first time a decoupling of energy intensity and GDP growth as improving efficiency begins to give us more work done per unit of energy produced. In the developing world, it’s a different story, though. More than two billion people lack access to modern energy in any form; billions more lack access to reliable energy that they can afford, which is true in the developed world as well. This raises both moral and pragmatic concerns: energy scarcity effectively prevents development, locking billions into poverty, poor health, and isolation; in turn, these conditions translate to instability, global migration, and even violence.

It is no accident that virtually all growth in energy demand over the next 25 years, as projected by organizations such as the International Energy Agency (IEA), will occur in the developing world, or that countries and people seeking to emerge from energy poverty will prioritize energy sources that they deem both reliable and affordable. Coal is a big part of that picture.

At the same time the science behind climate change is powerful, and greenhouse gas emissions must be lower than their current trajectory. Disagreements on the exact nature of the situation create debate on just how much lower they must be, how fast they must be lowered, and what mechanisms will be used, but it is unrealistic to assume that our business will proceed as usual.

Technology may alleviate these greenhouse gas concerns, as it has done for earlier kinds of emissions. Efficiency helps to mitigate demand growth and cleaner methods – whether renewable or fossil fuel – help mitigate emissions. Even under the strongest growth scenarios, most analysts see renewables’ share of world energy production in the 15-20% range by 2040. This efficiency helps to mitigate demand growth and cleaner methods – whether renewable or fossil fuel – help mitigate emissions.
SO where is the balance? As important as it is to invest in technology for renewables, it is just as important if not more important to invest in technology for cleaner use of traditional energy sources.

means that, even by 2040, the predominant expectation is that 80% of our global energy will come from fossil fuels, including coal, and nuclear. “Leave it in the ground” is not a realistic option.

So where is the balance? As important as it is to invest in technology for renewables, it is just as important if not more important to invest in technology for cleaner use of traditional energy sources. Precious few seem to want to talk about this – one side won’t concede the possibility of clean fossil fuel use and the other won’t concede that it is necessary, but if we’re going to continue to depend on large amounts of fossil fuels we must more effectively manage their environmental effects.

The last piece of this puzzle is people. Everyone has a stake in the energy industry and it is undeniable that many of those stakeholders are increasingly asserting their interests, with ever more significant influence on how the energy industry can operate.

As an industry – whether we’re talking about coal, oil, gas, nuclear, or renewables – we must continue to evolve. We don’t do things the way we did 35 years ago and we certainly don’t do them the way we did 100 years ago. There is no reason to believe that 25 years from now we’ll be doing things the way we do today. The question is: How will we shape the future?

That’s where the Global Energy Management (GEM) program comes in.

Jim Marchiori is Executive Director of the Global Energy Management (GEM) program at the University of Colorado Denver Business School.

GEM is a Master of Science degree program that delivers a graduate business education similar to an MBA, with two twists: the entire curriculum is focused on the energy sector (all forms of energy all over the world), and the program runs in a unique hybrid in-person/online format that provides 2/3 of its instruction in the classroom, yet still allows both students and faculty to live and work anywhere in the world. GEM requires 18 months (6 academic quarters); the only geographical requirement is to be in Denver six weekends over an 18-month period. GEM is a mid-career program; average student is 34, with 5 – 10 years’ industry experience. The goal is to prepare graduates for management and leadership careers in energy, and to give them the flexibility to work anywhere in the energy sector. GEM also offers specialized professional education certificates and free online courses via Coursera. To learn more, go to: http://www.ucdenver.edu/academics/colleges/business/degrees/ms/gem/Pages/Overview.aspx

The GEM Statement of Energy Principles and Values is a white paper published in 2016 as part of GEM’s mission to provide clear information to help both leaders and the general public build a framework for productive, non-partisan discussion of energy issues. The paper sets forth ten key principles to help stakeholders frame the energy debate:

**GEM Energy Principles**

1. All human life and well-being depend on the ability to use energy.
2. Energy technology is always evolving; there is no “end point.”
3. The production and use of energy in any form always have some impact on the environment; this impact must be integral to energy decisions and priorities.
4. Energy has both value and cost, and must be used efficiently, maximizing work performed for energy produced.
5. Alleviation of energy poverty is crucial to global stability and progress.
6. There are multiple stakeholders in the production and use of energy in any form; all will assert their interests.
7. Energy producers and suppliers have a right to a fair profit that takes into account investment, innovation, effort, operational effectiveness, and business and technological risk.
8. Sustainable energy production and use must balance economic, environmental, and social imperatives; this balance evolves over time with innovation and changes in the human condition.
9. Energy security considerations have profound effects on global stability and prosperity; these must be evaluated thoroughly, leading to prudent decisions that maximize the common good.
10. The energy sector, broadly defined, is a force for good in the world and should be seen as such.

Download a free copy of the GEM white paper at: http://www.ucdenver.edu/academics/colleges/business/degrees/ms/gem/Pages/Exec-Director-Bio.aspx
The 2016 presidential election is seen as historically significant, and the election may have some unpredictable consequences. However, the direction of our nation’s post-election energy policy is more predictable, as seen from the announced platforms and plans of the presidential candidates.

**Hillary Clinton**

Democratic Presidential candidate Hillary Clinton advocates energy and environmental policies that are anathemas to the fossil fuel industries, including the coal industry. For example, she:

- Favors aggressive global warming policies and regulations
- Supports rapidly phasing out fossil fuels
- Supports the recent Paris climate agreement
- Endorses increased tax incentives and mandates for renewable energy (RE)
- Opposes offshore and arctic drilling
- Supports EPA’s Clean Power Plan (CPP)
- Endorses increased EPA regulation of energy industries
- Supports carbon regulations and taxes
- Supports banning crude oil exports
- Opposes the Keystone pipeline
- Favors increased pipeline and rail regulations
- Opposes tax incentives and support for fossil fuels

Clinton announced that, as President, she would negotiate a North American Climate Compact between the U.S., Canada and Mexico to create national mandates for emissions reductions in each country. In addition, she would develop common infrastructure standards, invest in low-carbon transportation, and set methane reduction standards. She has released a detailed climate plan, which recommends, among other things, installation of 500 million solar panels by 2021—a 700% increase over current installations, and a goal that the U.S. will generate enough RE to power every home in America within 10 years of taking office. She has pledged to add more power generation capacity to the grid than during any decade in American history, from a combination of wind, solar, hydro, geothermal and other forms of RE.

Clinton’s energy policy is essentially a climate change and RE policy that gives short shrift to fossil fuels and assigns coal to the dustbin. It thus discards the “all of the above” energy policy in the 2012 Democratic platform which recommended developing all U.S. energy resources including wind, solar, biofuels, geothermal, nuclear, oil, clean coal, and natural gas. In fact, Obama’s 2012 campaign even ran political ads attacking former Massachusetts Gov. Mitt Romney for saying that “coal kills people” in 2003, and the campaign highlighted Obama’s commitment to coal power. In 2016, this “all of the above” policy was removed from a draft of the Democratic National Committee platform shortly before the convention under pressure from activists and environmental groups.

Clinton succinctly expressed her objective for coal during a Democratic town hall event in Ohio in May 2016 when she stated that she wants to move away from using coal as an energy source—even if it means eliminating jobs in the process, saying “We’re going to put a lot of coal miners and coal companies out of business.” As a consolation prize, she has proposed a $30 billion plan to “ensure that coal miners and their families get the benefits they’ve
earned and respect they deserve, to invest in economic diversification and job creation, and to make coal communities an engine of U.S. economic growth in the 21st century as they have been for generations.” This plan would:

- Ensure health and retirement security.
- Prevent coal companies from using bankruptcy proceedings to shirk healthcare and pension commitments.
- Reform the black lung benefit program.
- Safeguard funding for local schools.
- Repurpose mine lands and power plant sites; for example, “Wyoming is the nation’s largest coal producer, but also has the richest wind resources in the Western electrical grid.”
- Expand broadband access.
- Expand clean energy on federal lands and from existing dams.
- Increase education and training.
- Increase funding for local arts and culture programs.

Clinton’s message for natural gas is mixed. She advocates switching from coal to natural gas for reducing CO2 emissions under the CPP and contends that natural gas combined cycle plants can improve grid reliability and enable greater integration of RE. She would also accelerate the deployment of natural gas-fueled trucks, buses, ships, and trains. However, her plan also states that “Meeting our long-term climate goals will ultimately require replacing conventional natural gas with lower carbon alternatives.”

IN a Trump Administration, “political activists with extreme agendas will no longer write the rules. Instead, we will work with conservationists whose only agenda is protecting nature.

**Donald Trump**

Republican Presidential Candidate Donald Trump released his “An America First Energy Plan,” in a May 2016 speech in North Dakota, stating “America’s incredible energy potential remains untapped. It is a totally self-inflicted wound. Under my presidency, we will accomplish complete American energy independence.”

As President, Trump would approve the Keystone pipeline, stating that it would create and support more than 42,000 jobs, have no significant impact on the environment, and that Obama’s State Department concluded that it would be the safest pipeline ever built in the U.S.

Trump’s energy plan will “make America wealthy again and American energy dominance will be declared a strategic economic and foreign policy goal of the United States.” Trump contends that America has 1.5 times as much oil as the combined proven resources of all OPEC countries; has more natural gas than Russia, Iran, Qatar, and Saudi Arabia combined; has three times more coal than Russia; and that U.S. total untapped oil and gas reserves on federal lands equal $50 trillion.

Trump stated “We will become, and stay, totally independent of any need to import energy from the OPEC cartel or any nations hostile to our interests. At the same time, we will work with our Gulf allies to develop a positive energy relationship as part of our anti-terrorism strategy. We will use the revenues from energy production to rebuild our roads, schools, bridges and public infrastructure. Cheaper energy will also boost American agriculture. We will get the bureaucracy out of the way of innovation, so we can pursue all forms of energy. This includes renewable energies and the technologies of the future. It includes nuclear, wind and solar energy – but not to the exclusion of other energy. The government should not pick winners and losers. Instead, it should remove obstacles to exploration. Any market has ups and downs, but lifting these draconian barriers will ensure that we are no longer at the mercy of global markets.”
A Trump Administration “will focus on real environmental challenges, not phony ones: We will reject Hillary Clinton’s poverty-expansion agenda that enriches her friends and makes everyone else poor. We’ll solve real environmental problems in our communities like the need for clean and safe drinking water. American workers will be the ones building this new infrastructure.”

Trump has a 100-day action plan that will:

• Rescind all of the Obama executive actions, including the CPP and the Waters of the U.S. rule.

• Save the coal industry and other industries “threatened by Hillary Clinton’s extremist agenda.”

• Ask Trans Canada to renew its permit application for the Keystone Pipeline.

• Lift moratoriums on energy production in federal areas.

• Revoke policies that impose unwarranted restrictions on new drilling technologies.

• Cancel the Paris Climate Agreement and stop all payments of U.S. tax dollars to UN global warming programs.

• Scrap any regulation that is outdated, unnecessary, bad for workers, or contrary to the national interest

• Eliminate duplication, provide regulatory certainty, and trust local officials and local residents.

• Subject any future regulation to a simple test: is this regulation good for the American worker? If it does not pass this test, the rule will not be approved.

• Ensure that policy decisions are public and transparent.

Trump promised to do all this while taking proper regard for rational environmental concerns, and he will “conserve our beautiful natural habitats, reserves, and resources.” In a Trump Administration, “political activists with extreme agendas will no longer write the rules. Instead, we will work with conservationists whose only agenda is protecting nature. From an environmental standpoint, my priorities are very simple: clean air and clean water. My America First energy plan will do for the American People what Hillary Clinton will never do: create real jobs and real wage growth.”

He contends that his agenda will be accomplished through a series of reforms that put America first and stated that his energy reforms will create trillions in new wealth. Lifting the restrictions on American energy will create a flood of new jobs, will increase annual economic output over the next 30 years by nearly $700 billion; increase annual wages by more than $30 billion over the next seven years, and, over the next four decades, add more than $20 trillion in additional economic activity and $6 trillion in new tax revenue.

In his May speech, Mr. Trump stated “Regulations that shut down hundreds of coal-fired power plants and block the construction of new ones.” How stupid is that?”

Dr. Bezdek is President of MlSI (http://www.misi-net.com) and has over 30 years’ experience in the energy, utility, environmental, and regulatory areas in private industry, academia, and the federal government.
There is no doubt that coal-based electricity is currently faced with enormous challenges—both at the national level, with the flurry of federal regulations aimed at the coal industry, and at the state level, where local governments are experimenting with dramatic changes in their energy policies. In both instances, federal courts at all levels are being called upon to evaluate the lawfulness and constitutionality of these actions. This short article focuses on that latter evaluation—invoking the most enduring of American documents—our U.S. Constitution. In our national charter lies an important mechanism that may provide important protections against efforts by one or more states to greatly experiment with dramatic changes to their energy-related laws and regulations that have adverse impacts on coal-based electricity or the movement of coal interstate.

One does not have to be a legal scholar to know about the “Commerce Clause,” a provision in the U.S. Constitution that grants Congress the power “[t]o regulate Commerce . . . among the several states.”¹ What may be less known, though, is that the Commerce Clause has a reclusive twin, the “dormant Commerce Clause,” which emerged when the U.S. Supreme Court interpreted the Commerce Clause as including an impliedly inverse—or “dormant”—meaning that restricts states from behaving in such a way that would unduly burden interstate commerce.²

Generally, to successfully challenge a state law on the grounds that it violates the dormant Commerce Clause, a party must show one of three things: (1) that the law discriminates against interstate commerce on its face; (2) that the law
has a discriminatory purpose; or (3) that the law has a discriminatory effect. For example, in *Dean Milk v. Madison*, the Supreme Court held that a Madison, Wisconsin ordinance requiring all milk to be pasteurized within five miles of the city limits was an unconstitutional violation of the dormant Commerce Clause because it “erect[ed] an economic barrier protecting a major local industry against the competition” from other states. Even if a court determines that a state or local law does not discriminate on its face, it can still invalidate the law on dormant Commerce Clause grounds if the burdens it places on interstate commerce are “clearly excessive” compared to the local benefit of the law. This balancing test is often referred to as the *Pike* balancing test, named after the case that spawned it. In the energy sector, the dormant Commerce Clause has been anything but dormant. In recent years, it has been the focus of several constitutional challenges against state laws that improperly discriminate against the use of certain forms of energy—oftentimes coal—in such a way that discriminates against other states and burdens interstate commerce.

In 2007, California enacted the Low Carbon Fuel Standard (LCFS), a widely publicized rule that required that all transportation fuels used in California meet a baseline target for carbon intensity (CI) and established a credit system to trade carbon emissions. Under the rule, the CI would be determined through a life-cycle analysis, measuring the amount of carbon generated during the extraction, production, transportation, and combustion of a given fuel. The LCFS did not require use of any specific fuel, only that regulated parties find a blend of fuels and credits that will meet the declining target each year. Ethanol producers in the Midwest sued California to invalidate the LCFS regulation on the grounds that it violated the dormant Commerce Clause by discriminating against out-of-state ethanol producers and attempting to regulate activities outside of the state’s borders. In 2011, a federal district court struck down the rule, holding that it discriminated against out-of-state ethanol producers. On appeal, the U.S. Court of Appeals for the Ninth Circuit reversed the district court’s decision, but not without a number of dissenting opinions. Notably, one judge found that the rule seeks to control conduct in other states because it penalizes out-of-state practices, and it threatens to “balkanize” the economy. Ultimately, the majority opinion validated the LCFS rule because, in its view, the rule was based on carbon emissions and not expressly for the purpose of benefitting local companies over out-of-state companies. Moreover, the court hesitated to disrupt the novel rule, because it viewed states as “laboratories of democracy.” The Ninth Circuit remanded the case back to the district court. Subsequently, the district court found that it could not reliably assess the practical discriminatory effects on interstate commerce because the factors needed to do so are “highly data-specific” and vary each year. Accordingly, the court concluded that it could not find that it placed an undue burden on interstate commerce.

Simultaneous to the California LCFS rule, the State of Minnesota enacted its “Next Generation Energy Act” (NGEA). Among other things, the NGEA mandated that no person shall import power from a new large energy facility built outside the state; and...
no person shall enter into a long-term power purchase agreement that would contribute to statewide power sector CO2 emissions without a corresponding offset of such emissions. Given that the law exempted natural gas-fired facilities, it was quite plainly targeted at coal-fired power plants built inside as well as outside of Minnesota. In 2011, North Dakota, a state that is home to many coal-fired power plants—including some owned by Minnesota utilities—filed suit alongside a coalition of lignite companies and electric co-ops, to invalidate the law on the grounds that it was unconstitutional. North Dakota alleged that the Minnesota law violated the dormant Commerce Clause because it improperly discriminated against out-of-state interests, burdened interstate commerce, and regulated extraterritorially, or beyond its jurisdiction. North Dakota also argued that the law was pre-empted by the Federal Power Act and in conflict with the Federal Clean Air Act. North Dakota prevailed on its dormant Commerce Clause argument in district court. On appeal, the U.S. Court of Appeals for the Eighth Circuit affirmed the lower court’s decision, but only one member of the panel explicitly agreed with the district court that the NGEA violated the dormant Commerce Clause.

Finally, in 2011, in perhaps the most perplexing case at issue, a non-profit organization representing and promoting coal interests challenged the State of Colorado’s renewable energy standard (RPS), which requires Colorado utilities to provide up to 30% of their retail electricity sales from renewables. The challengers argued that the renewable mandate burdened out-of-state energy producers who sought to export electricity to Colorado but were now subject to the RPS. The court held that this state regulation did not violate the dormant Commerce Clause because, while it would possibly influence the profits of out-of-state companies whose electricity could not be used to fulfill the mandate, the dormant Commerce Clause “neither protects the profits of any particular business, nor the right to do business in any particular manner.” On appeal, the Tenth Circuit affirmed this ruling, holding that the Colorado RPS “isn’t a price control statute, it doesn’t link prices paid in Colorado with those paid out of state, and it does not discriminate against out-of-staters.” The court concluded that in the absence of “a regulation more blatantly regulating price and discriminating against out-of-state consumers or producers,” a dormant Commerce Clause challenge could not succeed.

As these cases demonstrate, the intersection of state energy policies and the dormant Commerce Clause yields unpredictable results. One thing that is clear is that—perhaps to its chagrin—the coal-based electricity sector cannot always rest on state primacy. Rather, the federal government must also be enlisted to protect important interests. Environmental and energy regulation was designed to be a cooperative undertaking shared by the states and the federal government. While the federal government is limited by the Tenth Amendment, which states that “[t]he powers not delegated to the United States by the Constitution . . . are reserved to the States respectively, or the people,” states are likewise limited by the dormant Commerce Clause in designing laws and regulations that do not burden the flow of interstate commerce or discriminate against other states. While the path forward on dormant Commerce Clause challenges is still being charted, the coal-based electricity sector—now more than ever—must be savvy and informed about the laws both inside and outside of those states in which it plays such an important role in providing reliable and low-cost electricity.

Paul M. Seby is a Partner and Matthew B. Miller is an Associate Attorney in the Denver office of law firm Greenberg Traurig, LLP (http://www.gtlaw.com).

References
1 U.S. CONST. art. I, § 8, cl. 3.
6 Id.
7 See Rocky Mountain Farmers Union v. Corey, 740 F.3d 507 (9th Cir. 2014) (denial of en banc review).
8 Id. at 512–17 (Smith, J. dissenting).
9 Id. at 509–12 (Gould, J. concurring).
11 Id.
14 U.S. CONST., amend. X
The need to develop and adopt advanced coal or carbon dioxide (CO2) capture and sequestration technologies worldwide seems obvious in consideration of the following climate and socio-economic influences:

- In December 2015, 195 nations met in Paris, France and agreed to non-binding individual greenhouse gas reductions globally by pledging to hold the increase in the global average temperature to well below 2° centigrade above pre-industrial levels;
- Today, out of a global population of 7 billion, more than one billion people live without electricity. Several billion more have daily power supplies that are never reliable. By 2050, a mere 34 years from now, the planet will be home to 9.7 billion inhabitants but as many as 500 million will be forced to survive without electricity;
- The bulk of the power needs in the developing world will be generated from fossil fuels, coal specifically, with the projections of coal use in China and India from 1990 to 2040 the most dramatic.
- To address greenhouse gas reduction while the world is electrified with fossil fuels, carbon capture and sequestration (CCS) is essential. Without the application of CCS technology, the costs of mitigation will be truly astronomical, the Intergovernmental Panel on Climate Change (IPCC) projects – on average – costs will 138% greater, the equivalent of trillions of dollars (US).

Emissions controls enabling coal use and technology innovation itself are proven paths forward. With time and money, there is no question that we can develop cost-competitive technologies to enable coal use while addressing climate change mitigation. Technology already exists in the form of supercritical pulverized coal-fired boilers that can dramatically improve the efficiency of converting coal to electricity. Greater efficiency means less CO2 emitted. The track record for successful technology development is rich with other examples, be it scrubbers, NOx controls or mechanisms to abate particulate matter. It is our technological ingenuity that permitted a doubling in the use of coal in the U.S. since 1970 while emissions of criteria pollutants (SO2, NOx and particulate matter) fell by nearly 90%.

These emissions control technologies are being used throughout the world. Where the U.S. retains control of the intellectual property and manufacturing base, these technologies have proven valuable for U.S. export and are therefore advantageous for our economic growth as well.

Yet, despite the dual realities of global policies for greenhouse gas reductions and explosive growth in the demand for energy, we (the private sector and governments) remain generally passive and even regressive in sustaining and augmenting efforts to develop and deploy advanced coal technologies with CCS.

A recent study conducted through the Coal Utilization Research Council (CURC) with the support of Japan’s New Energy and Industrial Technology Development Organization (NEDO) concluded that despite nearly two decades of financial, regulatory and political support provided by governments and private industry in numerous countries, progress in developing CCS has been modest. Only three commercial scale demonstration projects, all located in North America, for coal fueled power plants with CO2 capture are under construction or operating. Notable reversals of public support for CCS projects include the cancellation by the UK government of a £1 billion competition to support large-scale demonstration(s) and the EU’s NER300 initiative, originated...
in 2007, that anticipated 12 large-scale demonstrations to be supported through matching contributions from participating EU member countries but ended up with zero projects undertaken. Further reversals include the cancellation by the U.S. Department of Energy (DOE) of the FutureGen project and the demise of several other U.S. coal-based demonstration projects.

While modest levels of public support continue with a few new initiatives being funded by the U.S. DOE to initiate pilot scale CCS-related projects, the level of effort domestically and internationally is a mere fraction of what is needed.

Abundant and inexpensive natural gas, regulatory uncertainty, diminishing levels of coal use in the U.S. and the weak financial position of key coal industry stakeholders are the combined reasons why industry support in the United States will be modest or nonexistent and why public support is vital. These same or similar obstacles face CCS technology development worldwide.

The CURC-referenced study concluded that the “cost of fossil-based power integrated with CCS must be reduced and the technology proved cost-effective at scale to be deployable world-wide.” This CCS cost issue cannot be addressed by industry alone. Cost reductions and technology improvements will require:

1. Robust financial incentives from the public sector to reduce costs associated with currently available CCS technology designed to capture and then use CO2 to recover crude oil left after primary production in an oil field has been completed (referred to an enhanced oil recovery or EOR).5

2. Embarking upon and sustaining a commitment to a comprehensive program of laboratory-scale technology research and development, “proof of concept” at a large pilot plant scale, followed by commercial demonstrations where necessary for CCS technology providers to provide cost and technical risks assurances of new technologies. Given the technology readiness levels of several advanced CO2 capture technologies; there is an opportunity for marked improvements in cost reductions and transformational approaches to coal fueled power generation and the capture and use of CO2. What is required, at this time, are aggressive and well-funded programs designed to plan, construct, operate and test technologies at the large pilot plant scale level to gain understanding of these technologies under real operating conditions. We know from an earlier (November, 2014) workshop conducted by CURC, in cooperation with the U.S. DOE, that the private sector is currently unwilling to pursue large-scale pilot projects given the uncertain future market for coal-based CCS.6 The key variable to industry participation is the availability of significant public support.

The United States has the financial resources to provide this support. Whether there is a public willingness to aggressively do so is a key question.

In the context of global coal use and if there is a global will to address greenhouse gas reductions, the international community must think broader and bolder, and outside of a specific country’s national borders. For example, if no one country is able or willing to undertake the planning, construction and operation of next generation CCS technologies at the pilot plant scale, then combined international cooperation and funding may be an option worth exploring. The climate issue is global, the use of fossil fuels is global, and pursuit of technology solutions should be global, as well.

Shannon Angielski is the Executive Director of the Coal Utilization Research Council (http://www.coal.org).

References


5 EIA Annual Energy Outlook 2016, available at: https://www.eia.gov/forecasts/aeo/tables_ref.cfm


7 CURC and others have advocated before the U.S. Congress and the Obama Administration to increase the value of an existing tax credit (the section 45Q, carbon sequestration tax credit) that would incentive the capture of CO2 from power plants and industrial facilities for use in EOR applications. Other financial incentives have been promoted by CURC other as well. These incentives are designed to be used by industry to apply commercially-available technologies available today to capture and use CO2.

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The Chinde Project
– A Study in Reclamation and Proper Land Stewardship

By Dan Ware, BHP Billiton

In New Mexico, coal mines of every shape and size have dotted the landscape for more than 150 years. Nowhere in the state is coal more plentiful than in the Four Corners Region. Coal recovered from mines around the Farmington area have helped provide power for millions of homes and businesses across the western United States. At the same time, it has provided jobs and revenue for tribes, cities, counties and the State of New Mexico.

While the importance of coal to the energy industry cannot be understated, the issue of what to do after the coal has been recovered is just as important. Common perception among those not involved with resource recovery may be that once the coal is mined, companies just fill the pits and move on, leaving a scarred and ugly landscape not suitable for vegetation and susceptible to erosion. However, as stewards of the land we impact, we take seriously the obligation to reclaim it. We also look for new and innovative reclamation practices that don’t just replace the landscape, but enhance it as well.

Over the past two decades, BHP Billiton New Mexico Coal has challenged the common perception by developing reclamation methods that not only restore the landscape to the way it was, pre-disturbance, but even better than it was in many cases. The result is a landscape that is self-sustaining and cost-efficient.

Environmental engineers at BHP Billiton’s New Mexico Coal operation, first utilized the technique known as geo-morphic landscaping at the company’s La Plata Mine, situated north of Farmington near the Colorado border. Closed in 2002, the former surface mine was reclaimed in a way that mimicked the natural flow of the topography, the way nature intended. Reclamation crews crafted streambeds and gullies to improve water flow and reduce erosion. The result has been a flourishing landscape that needs little maintenance, reducing the high costs associated with it. For its efforts and innovation, the La Plata Mine reclamation was given an award by the Office of Surface Mining Reclamation and Enforcement.

While the creation of the Chinde Wetlands Area has resulted in an explosion of biodiversity with regard to insect, wildlife and migratory bird habitat, the overreaching impact of this reclamation method has far greater implications, worldwide.

Using the La Plata model, BHP Billiton’s engineers at Navajo Mine, south of Farmington, began looking at ways to update areas that had been reclaimed decades ago, which were now showing signs of degradation and becoming costly to maintain.

Situated completely on Navajo Nation tribal lands, Navajo mine began operations in 1963 and exists on land that was once fertile, subtropical forest that had been at one time covered by ocean. The receding waters left behind a diverse and beautiful landscape filled with vast high desert plains, rolling and mysterious badlands and high crested mesas that turn brilliant colors of red, orange and yellow as the sun rises and sets. BHP Billiton’s goal has been to restore the land in a way that pays respect to the topographical history of the area as well as provides grazing acreage for the Navajo people who live in close proximity to the mine.

In 2012, engineers began a project to redesign an area that had been reclaimed beginning back in the mid-1970s. While the reclamation has met all company and regulatory standards, it also has required constant, costly upkeep. The 300-acre area, known as Chinde, was becoming increasingly damaged by erosion and other factors. A new plan was devised utilizing the geo-fluvial model that would more closely replicate the natural flow and contour of the land.

The existing landscape was razed and a new topographic model was laid out using state-of-the-art software, with the idea of creating a natural pathway for rain water and outflow from nearby agricultural lands. Topsoil was removed and set aside while a more natural drainage pattern was created to improve water flow and encourage vegetation growth. Once new channel structures were crafted, native grass and forb seed was planted. Because the Four Corners region is considered a high-desert and rainfall is sporadic throughout the year, the decision was
The ACC’s Coal Q&A Program is a monthly webcast, which provides a forum to address critical issues affecting the U.S. coal industry – including coal producers, consumers, transporters and services partners. Each program begins with a topic briefing by a leading industry analyst, expert or representative, followed by a moderated Q&A session. Our webcast presentations cover a wide range of content, including:

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Chinde Project continued from 41

made to irrigate the area to ensure the new vegetation would establish itself.

During the course of the project, engineers blocked off the main water flow channel through Chinde, to protect the construction from any damage caused by monsoon downpours and agricultural outflow from nearby farmland. As a result of blocking the channel, a large pond was formed, which became an oasis for native and endangered wildlife species.

Seeing the obvious environmental advantages of supporting area plant and wildlife species, the decision was made to change the reclamation plans and encourage the continued development of the pond and wetlands area so they would become self-sustained. In addition to the Chinde area, additional reclamation projects across Navajo Mine are also utilizing this method to create a consistent and stable environment.

While the creation of the Chinde Wetlands Area has resulted in an explosion of biodiversity with regard to insect, wildlife and migratory bird habitat, the overarching impact of this reclamation method has far greater implications, worldwide. Because the geo-fluvial approach to reclamation supports a self-sustaining environment, it can greatly reduce long term maintenance needs and costs. It may also have the result of changing the perception that resource recovery companies have no interest in being good stewards of the land we utilize.

On August 24, 2016, the Office of Surface Mining and Reclamation and Enforcement announced that the Chinde Reclamation Project at Navajo Mine was selected to receive its National Award for the most exemplary mining operations and reclamation accomplishments in the country for 2016.

Dan Ware is the Manager Corporate Affairs, Navajo Mine for BHP Billiton (http://www.bhpbilliton.com/).
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