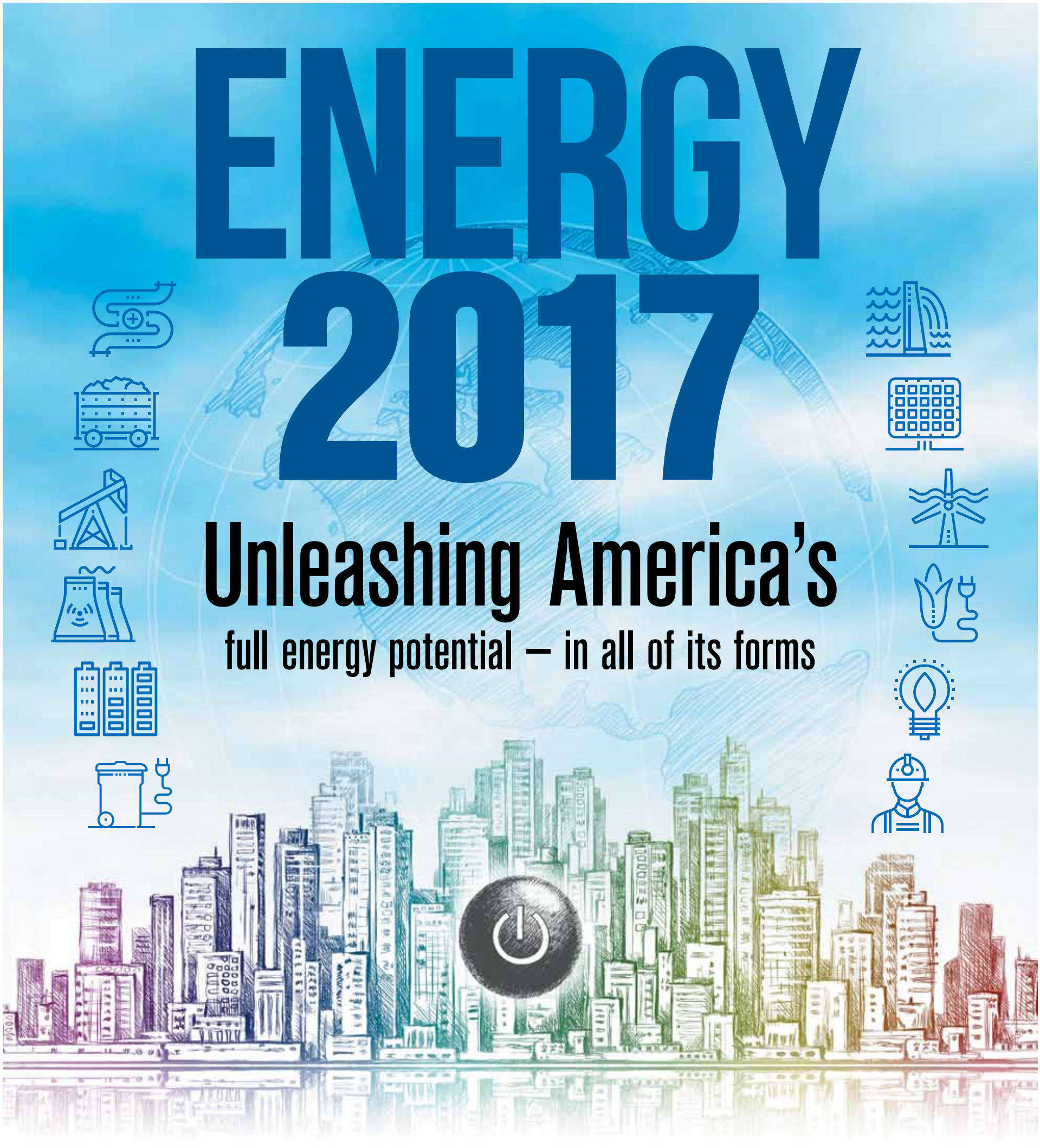
ENERGY 2017

Unleashing America's full energy potential – in all of its forms



A Special Report Prepared By The Washington Times Advocacy Department

ENERGY 2017: Unleashing America's Full Energy Potential — In All Its Forms

"Energy independence and security are the next great frontiers for America. In fact, domestic energy production is poised to be the catalyst that launches the next great era of American exceptionalism." — Rep. Bill Johnson, Ohio Republican, on GOP.gov on Oct. 14, 2016

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President Trump's first 100 days on energy and the environment

By The Washington Times Advocacy Department

Shortly after Donald J. Trump became the 45th President of the United States on Jan. 20, WhiteHouse.gov took down a webpage dedicated to fighting climate change and replaced it with "An America First Energy Plan."

The new energy vision is committed to policies that "lower costs for hardworking Americans and maximize the use of American resources, freeing us from dependence on foreign oil."

It further pledges to eliminate "harmful and unnecessary" federal regulations and policies; revitalize the U.S. coal industry; shift the federal government's focus from global climate change to protecting U.S. water and air quality; and strengthen responsible stewardship of the environment.

During Mr. Trump's first 100 days in office, he took several major steps that affect U.S. energy and environmental sectors. These actions include:

January 24 — Signed "Expediting Environmental Reviews and Approvals for High Priority Infrastructure Projects."

This executive order resurrected the Keystone XL and Dakota Access oil pipelines, which had been blocked or hampered by the Obama administration and others.

"We'll see if we can get that pipeline built. A lot of jobs, 28,000 jobs — great construction jobs," Mr. Trump said at the signing ceremony.

When Keystone XL is completed, the Canada-to-Texas pipeline is expected to carry more than 700,000 barrels of Canadian oil each day to refineries along the U.S. Gulf Coast.

The Dakota Access pipeline began filling with oil in late March, although it still needs approval from a Nebraska agency.

Mr. Trump also signed an order promoting the use of American-made steel for oil pipelines.

February 28 — Signed "Presidential Executive Order on Restoring the Rule of Law, Federalism, and Economic Growth by Reviewing the 'Waters of the United States' Rule."

This executive order told the Environmental Protection Agency to begin dismantling the "Waters of the United States" rule inherited from the Obama administration, which expanded the authority of the EPA and the Army Corps of Engineers over a vast range of streams, lakes, ponds and other waterways.

"EPA's so-called Waters of the U.S. rule is one of the worst examples of federal regulation. It has truly run amok," Mr. Trump said at the White House signing ceremony. "The Clean Water Act says the EPA can regulate navigable waters, meaning waters that truly affect interstate commerce," he said. "A few years ago, the EPA decided that navigable waters can mean nearly every puddle or every ditch on a farmer's land, or any place else they decide, right? It was a massive power grab."

The Waters of the United States rule was unveiled in March 2015, but was quickly decried by energy companies, the agricultural industry and others. A legal challenge was filed and in October 2015, a federal court stayed the rule.

March 28 — Signed "Presidential Executive Order on Promoting Energy Independence and Economic Growth."

This wide-ranging executive order opened up federal lands to coal mining and began unraveling the EPA's Clean Power Plan.

"The action I'm taking today will eliminate federal overreach, restore economic freedom and allow our companies and our workers to thrive, compete and succeed on a level playing field for the first time in a long time," Mr. Trump said.

Vice President Mike Pence said that with the executive order, "The war on coal is over."

The executive order also had the effect of ending the use of a "social cost of carbon" estimating tool in federal regulations and policies.

The controversial metric was perceived by some as measuring climate change costs or savings, but opponents said it permitted federal agencies to justify expensive, business-chilling rules with unfounded claims about climate change.

April 26 — Signed "Presidential Executive Order on the Review of Designations Under the Antiquities Act"

This executive order directed the Interior Department to review national monument designations for the past two decades, to ensure that the Antiquities

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EPA is putting American workers first

By EPA Administrator Scott Pruitt

When President Trump came to EPA to sign an executive order ending the "war on coal," he was flanked by Pennsylvania coal miners. Hosting coal miners at EPA headquarters in Washington served as a stark contrast to the past administration, to be sure.

President Trump's action was a moment in which a promise became an economic reality. As EPA Administrator, I immediately ordered my Agency to comply with the March 28 executive order, and signed four new rules, which included a review of the Clean Power Plan. Relief — and prosperity — is on the way.

The "war on coal" stemmed from the previous administration's regulations aimed at removing coal from our nation's energy mix. This approach, sanctioned by EPA and other agencies, divided Americans and strengthened Washington's grip on our economy. Thankfully, President Trump has made clear: The regulatory assault on American workers is over. We should not have to choose between supporting jobs and supporting the environment.

Now, opponents of President Trump's new executive order claim that this action means that our federal government is turning its back on a clean environment and regulation altogether. This argument is wrong.

First, the Clean Power Plan was never implemented, and was unable to do a single thing for our environment. Twenty-seven states sued, recognizing the threat this regulation posed to their economies and the rule of law. The Supreme Court granted a stay to halt implementation of the Clean Power Plan.

Rather than take its lumps, the Obama administration still demanded compliance from the states, claiming that the stay was only temporary (a technique that was frequently used by the Agency to extract compliance during litigation). The result was lost jobs and an uncertain regulatory environment, without any environmental gain to show for it.

Second, the Clean Power Plan was expected to yield very little for what it cost the American taxpayer. For the price of American jobs, EPA had promised a reduction of sea level rise by the thickness of two sheets of paper and reduction of atmospheric CO2 concentrations by 0.2 percent by 2100, according to an analysis by the National Economic Research Associates. Emissions growth in China and India, of course, would continue unchecked. This plan put America last.

Third, congressional testimony by my predecessor, former Administrator Gina McCarthy, made it clear that the goal of the Clean Power Plan was far less about achieving a measurable result than it was about providing leadership in the world. The federal government sought to kneecap American workers, while countries like India and China were not held to the same rules.

Americans who want a healthy and clean environment expect lawful, effective and economically sound regulation — the Clean Power Plan failed on all three counts. EPA can and should now focus on getting real results in the fight for clean air, land and water.

Now, opponents of President Trump's new executive order claim that this action means that our federal government is turning its back on a clean environment and regulation altogether. This argument is wrong.

President Trump made it clear that we should put America first. We are not going to allow EPA to pick winners and losers through regulation. EPA should work within the framework that Congress has established. And we should provide regulatory certainty and write rules that make sense for the states and the businesses they affect.

The "war on coal" is over. Now EPA can focus on its mission and deliver real results.

Former Oklahoma Attorney General Scott Pruitt was sworn in as the 14th Administrator of the Environmental Protection Agency on Feb. 17, 2017.

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Act had not been violated. The 1906 act empowers presidents to designate an area as a monument, but explicitly says it should be limited to the "smallest area" possible.

Mr. Trump said the previous administration had "unilaterally put millions of acres of land and water under strict federal control" and eliminated the ability "of the people who actually live in those states to decide how best to use that land."

"Today, we are putting the states back in charge — big thing," Mr. Trump said.

Interior Secretary Ryan K. Zinke is expected to provide an initial report to the White House in mid-June and have a final study ready in the fall.

One project especially likely to be reviewed is President Obama's recent order to designate 1.3 million acres in Utah as Bears Ears National Monument. There are also more than two dozen monuments that are larger than 100,000 acres in size and likely to be reviewed.

No president has rescinded a monument designation to date, and some environmental groups have pledged to sue to stop such an action.

April 28 — Signed "Presidential Executive Order Implementing an America-First Offshore Energy Strategy"

This executive order cancels the previous administration's ban on new offshore drilling leases and is expected to result in new energy exploration in the Atlantic, Pacific and Arctic oceans, as well as in the Gulf of Mexico.

"We're opening it up," Mr. Trump said at the signing ceremony.

"Today, we're unleashing American energy and clearing the way for thousands and thousands of high-paying American energy jobs. "Our country is blessed with incredible natural resources, including abundant offshore oil and natural gas reserves. ... This executive order starts the process of opening offshore areas to job-creating energy exploration.

"It reverses the previous administration's Arctic leasing ban, so hear that — it reverses the previous administration's Arctic leasing ban, and directs Secretary Zinke to allow responsible development of offshore areas that will bring revenue to our treasury and jobs to our workers."

"Our country is blessed with incredible natural resources, including abundant offshore oil and natural gas reserves. ... This executive order starts the process of opening offshore areas to job-creating energy exploration.

This article is drawn from Washington Times news stories.

An 'America First' energy policy holds 3 powerful benefits

By Interior Secretary Ryan K. Zinke

The Department of the Interior is the steward and manager of America's natural resources, which in addition to national parks and grazing lands also includes oil, gas, clean coal, hydro, solar and other renewable energy sources.

Being a good steward of our land and resources does not mean locking it up. As America's conservationist president, Theodore Roosevelt, wrote, "Conservation means development as much as it does protection."

Like Theodore Roosevelt, President Trump believes that responsible development of natural resources, conservation stewardship, and outdoor recreation on public lands benefit all Americans. Balancing those priorities is the job of the Interior.

The department oversees 1.7 billion offshore acres of Outer Continental Shelf and 700 million onshore acres of mineral estate. These lands produce 21 percent of the nation's energy, including 45 percent of coal, 43 percent of solar capacity, 23 percent of oil, 15 percent of natural gas, 15 percent of hydropower, and 57 percent of the nation's installed geothermal capacity. As a result, Interior generates more revenue for the federal government than any agency other than the IRS.

While not all public lands are appropriate for energy development, many provide the perfect opportunity to balance energy, conservation and outdoor recreation priorities. Thanks to new innovations in science and technology, developing our resources and conserving the environment are not mutually exclusive. Interior leads the way in showing that responsible energy development and conservation stewardship are possible.

There is no debate that the federal government should regulate energy production within its borders and that the taxpayer should get fair value for the resources extracted. But when regulation crushes American innovation and becomes a tool of political advocacy rather than public interest, we must change course.

Between 2008 and 2016, annual energy and mineral revenue from federal and tribal lands decreased by about $17 billion. Offshore energy revenues — where funding for much land conservation and historic preservation originates — fell by 84 percent over the same period. This trend stops now.

In March, President Trump issued an executive order launching America towards energy independence and economic growth. I followed the president's leadership by ending the moratorium on federal coal leases, eliminating job-crushing energy regulations, and re-establishing a Royalty Policy Committee that gives local, tribal, federal and non-federal stakeholders a seat at the table to discuss energy development on public lands.

But when regulation crushes American innovation and becomes a tool of political advocacy rather than public interest, we must change course.

These actions have restored balanced access to federal lands for employers to add thousands of jobs and generate billions in revenue for the American taxpayer. And, coupled with President Trump's executive orders to combat bad regulations and streamline government bureaucracy, these actions are already providing relief to hardworking families and jumpstarting the economy.

Developing American energy and achieving American energy independence have three major benefits to the environment, economy and national security:

First, it's better for the environment that the U.S. produces energy. We can responsibly develop our energy resources and return the land to equal or better quality than it was before extraction. I've spent a lot of time as a Navy SEAL in the Middle East, and I can tell you with 100 percent certainty it is better to develop our energy here under reasonable regulations rather than have it produced overseas under little or no regulations.

Second, energy production is a boon to the economy, supporting more than 9.8 million jobs and supplying affordable power for homes, hospitals, manufacturing and transportation. But for too many local communities, energy on public lands has been more of a missed opportunity and has failed to include local consultation and partnership.

And lastly, achieving American energy independence will strengthen our national security by reducing our reliance on foreign oil and allowing us to assist our allies with their energy needs. As a military commander, I saw how the power of the American economy and American energy defeated our adversaries around the world. Under President Trump's leadership, we will once again develop our resources and use them as a diplomatic force to keep prices low and Americans safe.

Together with local, state and tribal partners, we will power the American economy with American energy. We will create the business conditions to put people back to work on the rigs in the Gulf, in the oil fields of the West, and in the coal mines like those on great Crow Nation's lands. In the Trump administration, all-of-the-above means all-of-the-above, and economic opportunity will once again be available to those who have been left behind and forgotten by the policies of the past.

Former Montana Rep. Ryan K. Zinke was sworn in as 52nd Secretary of the U.S. Department of the Interior on March 1, 2017. A fifth-generation Montanan, Mr. Zinke is the first U.S. Navy SEAL officer to serve as a cabinet secretary.

Unleashing America's energy potential — in all forms

By Energy Secretary Rick Perry

This is a great day for Texas energy diversity [and] the development of these clean technologies ...

I just returned late yesterday evening from the G-7 Energy Ministers' Meeting ... You might have read in the media that there was a lot of discussion there about U.S. energy policy and the fact that we are undergoing a review of many of those energy policies. And it would be true — we are — and that, from my perspective, is the right thing to do.

What you might be interested in knowing is that much of the conversation that wasn't reported on ... was related to the energy-security challenges that we face in this world and the need for innovation to assist with meeting the environmental goals and the security needs.

The U.S. is blessed with many neighbors and allies that are aligned with our energy interests, and we are also blessed with this abundance of energy resources to advance our national security and economic interests of our friends and our allies.

President Trump has only been in office for three months, but we are working on rescuing our energy economy from the regulatory mess that we inherited. In a short amount of time, he has taken action to roll back harmful regulations that prioritized a political agenda over the realistic needs of baseload generation. He's taken action on regulations that distorted the energy marketplace that has left communities across America devastated.

He knows that for us to succeed in growing our economy and improving our environment, we need energy policies that are smart and designed for the innovation era that we live in.

And that was my message to my G-7 colleagues — and it's important for them to hear that the American people

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Twin energy imperatives: Upgrading infrastructure, strengthening cybersecurity

By Sen. Lisa Murkowski

The United States has some of the most robust and reliable energy infrastructure in the world. It allows us to harness energy and move it from where it is produced to where it can be utilized.

Without it, there would be no fuel when we pull up to the station, and there would be no light when we flip on a switch.

Energy infrastructure is central to our way of life and our standard of living, but it is almost always an afterthought — until it breaks down.

We have seen that too often in recent years, making this a perfect time to look at our options to either rebuild or, in many cases, build energy infrastructure for the first time. ...

Much of our nation's infrastructure is privately owned and maintained.

Upgrading it and building new infrastructure is an expensive and time-consuming process. Hundreds of projects, representing billions of dollars of investment, are currently navigating the federal labyrinth of permitting — multiple agencies, numerous forms and duplicative requirements make this process cumbersome and can delay projects for years.

Of course, the federal permitting process is also layered on top of state and local permitting processes with little to no apparent coordination, which only adds to the difficulty of "getting to yes."

I am glad that President Trump has made infrastructure a national priority. I look forward to working with him and his administration, as well as members of the Senate to develop a broad infrastructure package. And I certainly hope that package will include provisions that streamline the permitting process for all energy infrastructure projects. ...

I like to say that energy is good — you all have heard that. This morning, I would add to it that energy infrastructure is good, and that it belongs in any conversation we have about roads, bridges and airports.

Sen. Lisa Murkowski, Alaska Republican, is chairman of the Senate Energy and Natural Resources Committee. This is an excerpt of remarks she made March 14, 2017, at the committee's hearing on opportunities for energy infrastructure.

By Sen. Maria Cantwell

It is not an exaggeration to suggest that our economy, our national security and our way of life all depend on the reliable, secure and efficient operation of energy infrastructure ...

We are facing several challenges that threaten to disrupt Americans' access to reliable and affordable energy.

First, our hydroelectric dams, power plants, electric transmission lines and pipelines are aging. ... According to the Gridwise Alliance, our aging infrastructure is responsible for approximately 25 percent of all power outages in the United States. The Electric Power Research Institute estimates that power outages and reductions in power quality cost the U.S. economy as much as $20 billion annually. ...

There is the issue of cybersecurity that keeps me up at night thinking about potential hacks from Russia or foreign actors, as we see large-scale attacks happening in other places.

If we do not make the necessary investments to prevent, defend against and minimize the impact of these cyberattacks, our enemies may succeed in causing a widespread blackout or devastation to our economy. ...

Our economy and way of life have grown increasingly dependent on the electric grid and smart tools. So we need to make sure that we are deploying energy in new ways to help them. ...

The World Economic Forum recently estimated that the digital transformation of electricity technology will create $1.3 trillion in economic value during the next 10 years. To me, it is imperative that the U.S. lead this effort.

As the [Department of Energy's] Quadrennial Energy Review pointed out, we need to invest in the energy work force that is needed. Approximately 200,000 workers with STEM skills will be needed for the electricity grid of the future.

Sen. Maria Cantwell, Washington Democrat, is ranking member of the Senate Energy and Natural Resources Committee. This excerpt is from remarks she gave March 14, 2017, at the committee's hearing on opportunities to improve U.S. energy infrastructure.

PERRY

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are telling us to promote energy policy that puts America and our allies first. We're not looking just to trim around the edges either, but to implement a complete overhaul with real solutions that properly value what is important to keep improving our economy.

So it makes me especially grateful to be here today to see how innovative ideas can help achieve exactly those goals, to help us transition into a future that we can all be proud of ...

This is the message that we have for the globe: If we will work together — if we will have smart regulations, if we will use our innovation, our brilliance of our universities, of our private sector, working together — there is no challenge that we cannot face and conquer.

This groundbreaking project ... is a stunning display of what American and Japanese innovation — working together — can do. We're investing in cleaner power, using the carbon capture to increase the energy production in [the West Ranch Field]. It's a tremendous example of how investments in clean technology can also lead to increased development of conventional sources of energy. It shows we don't have to pit the environment on one side ... and the economy on the other side. We can, and we will, be good stewards of both.

Today, we celebrate the fact that the United States and private partners have once again seized the initiative in developing cutting-edge energy technologies, with the aim of unleashing America's full energy potential in all of its forms. The Trump administration is committed to doing those things.

And doing so will not only strengthen our energy security [and] also our economy, it will also foster a stable, more secure global energy market.

The president has made it very clear to me that he doesn't just want America to be energy-independent; he wants America to be energy-dominant. And today's opening is just another step and another example of that becoming a reality.

Energy Secretary Rick Perry (right) and NRG Energy CEO Mauricio Gutierrez toured the newly opened Petra Nova carbon capture and enhanced oil recovery system on April 13, 2017. This joint venture by NRG Energy and JX Nippon Oil & Gas Exploration Corp. is located near Houston and started operations at the end of 2016. The project has delivered more than 300,000 tons of carbon dioxide to the West Ranch oil field, owned by Petra Nova and Hilcorp Energy. The CO2 is injected into the oil reservoir to increase oil production in a process called Enhanced Oil Recovery. Image courtesy of NRG Energy/AP.

Former Texas Gov. Rick Perry was sworn in as the 14th Secretary of the U.S. Department of Energy on March 2. This is an excerpt of remarks he gave April 13 at the opening of Petra Nova, the world's largest post-combustion carbon capture project, which is installed on an existing coal-fueled power plant located southwest of Houston. NRG Energy, which conducted the joint venture with JX Nippon Oil & Gas Exploration Corp., has a videotape of the full remarks at http://www.nrg.com/generation/projects/petra-nova/news/

Energy goals: Jobs, production, modern infrastructure — and good environmental stewardship

By Rep. Greg Walden, Rep. Fred Upton and Rep. John Shimkus

American consumers deserve safe, secure and efficient energy that's affordable and meets the needs of the 21st century economy. The House Committee on Energy and Commerce has already begun work on a pro-domestic energy policy that will improve our nation's energy infrastructure, create jobs and reduce energy bills, but much more needs to be done.

America's energy landscape has changed dramatically over the past decade, and it's time for Washington's energy policy to change with it.

Our nation's energy abundance combined with technological developments in the energy sector are presenting new challenges and opportunities in the manner in which we as a nation produce, generate, distribute and consume energy.

For too long, the federal government has stood in the way of the United States reaching its full energy potential. While energy production is at record levels, the nation's aging energy infrastructure needs to be improved to ensure consumers around the country continue to receive energy in a safe, secure and efficient manner.

Additionally, many of the nation's environmental laws are outdated, which impedes economic activity and growth. Onerous, red-tape regulations and permitting and siting delays had become commonplace under the previous administration.

Now we've started to usher in a new era — one that capitalizes on our energy abundance. The days of Washington knows best are over. It's time the federal government stopped picking winners and losers. It's time we enact reforms that build on our nation's energy abundance, modernize our energy infrastructure, and promote domestic manufacturing and job growth.

Thankfully, the Energy and Commerce Committee and the Energy and Environment subcommittees have already been hard at work examining ways in which we can take advantage of this tremendous opportunity to enact meaningful reforms.

The Energy Subcommittee has explored opportunities to improve the nation's economic competitiveness by examining the state of America's evolving energy infrastructure. For too long, pipeline permitting and hydropower approvals were mired in bureaucratic red tape that stymied economic growth, innovation and jobs. Multiyear federal permitting delays have become the norm for pipelines, transmission lines, and projects needed to keep up with our growing production of domestic oil and natural gas.

Thankfully, President Trump and his administration have already started to roll back the red tape. Earlier this year, President Trump issued an executive order to speed up the regulatory review process for infrastructure projects, which finally green-lighted important job-creating projects like the Keystone XL and Dakota Access pipelines.

Looking forward, the subcommittee will look at ways to legislatively encourage infrastructure improvement and expansion. This includes considering potential Federal Energy Regulatory Commission process reforms to bring greater transparency and accountability to the approval process for natural gas pipelines, permits and other approvals needed for hydropower projects.

The Federal Power Act was enacted when Franklin Roosevelt was president and most of the country lacked access to electricity. It's way past time for a review to this law. Electricity in the United States is experiencing an unprecedented set of changes driven by technological innovation, environmental regulations and mandates, and subsidies at the federal and state levels. The Energy Subcommittee has already started its long-term review of the nation's electricity system and power markets.

The Environment Subcommittee has already taken a look at the challenges and opportunities for modernizing our environmental laws to expand infrastructure and promote manufacturing. The subcommittee has reviewed important legislation to provide states flexibility when it comes to implementing Environmental Protection Agency (EPA) standards for ground-level ozone. H.R. 806, the Ozone Standards Implementation Act of 2017, would make commonsense, targeted reforms to the Clean Air Act to provide states and local authorities the time and flexibility to implement new air quality standards in an orderly and effective manner.

This allows states to focus on public health rather than wasting resources keeping pace with waves of new and ineffective planning requirements. This simple piece of legislation would boost manufacturing and ensure job growth in many areas across the country.

Additionally, the subcommittee has examined legislation related to Brownfields reauthorization. Brownfields are often abandoned, closed or underutilized industrial or commercial facilities that have the potential to encourage economic development through the EPA's Brownfields Program. This program is vital to states and local communities across the country and will be an issue of great importance to the subcommittee moving forward.

While these are just some of the many issues that fall under the committee's broad jurisdiction, much work remains to be done.

This Congress will be a busy one as we work to modernize our dated energy infrastructure and environmental laws. We will continue to strive and fight for consumers across the country to ensure they continue to have access to affordable and reliable energy.

We're for an all-of-the-above approach when it comes to energy policy. We want jobs, infrastructure improvements and energy production, but we also want to ensure we remain good stewards of the environment. These issues don't have to be mutually exclusive. We stand ready to roll up our sleeves and work to capitalize on our energy abundance.

Rep. Greg Walden, Oregon Republican, is chairman of the House Energy and Commerce Committee. Rep. Fred Upton, Michigan Republican, is chairman of the House Energy and Commerce subcommittee on energy, and Rep. John Shimkus, Illinois Republican, is chairman of the House Energy and Commerce subcommittee on environment.

Fossil fuels are vital to America's energy future

CCS/CCUS technologies must be ramped up to support expanded use

By Newton B. Jones

President Trump's commitment to fossil fuels could mark a turning point in America's energy future. Certainly, expanded federal support for coal, natural gas and petroleum would create jobs for workers engaged in field construction, coal mining, petroleum and natural gas extraction, transportation and other industries.

With thousands of union Boilermakers employed in these industries across the United States and Canada, the Boilermakers union welcomes the opportunity for more work. At the same time, we recognize that our nation and the global community must take steps to mitigate greenhouse gas emissions created when fossil fuels are burned.

For more than a decade, we have supported technologies to capture and permanently store carbon dioxide emissions, and to extract carbon for use in various products. We were directly involved in the Waxman-Markey bill in 2009, which passed the House but died in the Senate. Among other things, that bill would have provided incentives to develop emerging carbon capture technologies, allowing their phase-in without an abrupt disruption of the energy market.

Carbon capture and storage (CCS) and carbon capture, use and storage (CCUS) are only now seeing broader commercial use around the world.

Boilermakers have been involved in constructing major CCS projects in North America, notably North West Upgrading's $8.5 billion Sturgeon Refinery in Alberta, designed from the ground up to capture CO2 for enhanced oil recovery; the $1.35 billion Shell Quest project in Alberta that captures CO2 during bitumen oil upgrading and permanently stores it underground; and the $1.5 billion SaskPower Boundary Dam project in Saskatchewan, the world's first commercial-scale retrofit of CCS technology on an existing coal-fired unit.

These projects, along with others in the United States and around the world, are pioneering developments that could — and must — lead to a global application of CCS. Without CCS, industries worldwide will continue pumping CO2 into the atmosphere, contributing to climate change. And it isn't just coal-fired and gas-fired power plants that emit CO2. Cement plants, refineries, aluminum smelters, steel mills, chemical plants and other energy-intensive facilities generate substantial amounts of greenhouse gases too.

Remove policy and regulatory roadblocks

Widespread deployment of CCS and CCUS has been hampered by a lack of political will, unfair government policies and regulations, and the demonization of fossil fuels by environmental groups.

The popular stance is to promote renewables above all else. Indeed, wind and solar have received a disproportionate share of federal support despite their reliability concerns. Consider that in 2013 renewables received $13.2 billion in subsidies and incentives while coal received just $1.1 billion (Energy Information Administration, 2015). Despite this support, in 2015 wind accounted for just 5.6 percent of total U.S. electricity generation, solar just 0.9 percent.

Nearly two-thirds of America's electricity comes from coal and natural gas — and those sources are where CCS/CCUS can do the most good. But favoritism towards renewables and restrictive Environmental Protection Agency (EPA) regulations have created market uncertainty for fossil fuels. So has the Green Movement's endless lawsuits and "leave it in the ground" mantra.

It is time for our federal government to rewrite energy policies and regulations that are more balanced and that recognize the value of CCS/CCUS. We need an "all of the above" approach that does not play favorites with fuel sources, but instead seeks to make the best, most efficient and lowest-emitting use of each. Renewables are important and necessary. So are nuclear energy and fossil fuels.

Federal support must be more evenly distributed where it will do the most good.

One bright spot has been the work of the Energy Department's Fossil Energy Research and Development Program. Under former Energy Secretary Ernest Moniz's direction, this program provided needed, albeit limited, funding to promising CCS projects in the United States. It deserves greater congressional funding to continue this work.

It is time for our federal government to rewrite energy policies and regulations that are more balanced and that recognize the value of CCS/CCUS. We need an "all of the above" approach that does not play favorites with fuel sources, but instead seeks to make the best, most efficient and lowest-emitting use of each.

Remain involved in global climate talks

America's path forward in any new energy policy must consider the reality that climate change exists and to some degree mankind contributes to it. We can't simply ignore the evidence, but neither should we buy into the hysteria surrounding the issue — or accept policy decisions that needlessly destroy jobs and harm our economy.

The momentum to address climate change is real. It was demonstrated by the 2015 Paris climate change accord, signed onto by nearly 200 countries. It exists at the highest levels of world governments and in the boardrooms of major corporations. It would be wrong for the world's leading economy, and one of the largest emitters of greenhouse gases, to abdicate leadership in the quest to find solutions.

Given the continued reliance on fossil fuels, it seems obvious that the most effective way to reduce greenhouse gas emissions is through CCS/CCUS. In fact, the International Energy Agency has estimated that globally it would cost about $2 trillion more to mitigate CO2 in the power sector by 2050 without employing CCS.

A sound U.S. energy policy will ramp up CCS/CCUS investments so these technologies truly become commercially available for new construction and can be retrofitted to existing power plants — natural gas-fired as well as coal-fired. These technologies will also be needed to limit global emissions from kilns, smelters and mills, all of which generate substantial greenhouse gases.

The Boilermakers union believes that as CCS/CCUS technology becomes more economically feasible, it should be made available throughout the world. Ideally, a global partnership could be formed to fund, develop and distribute the technology.

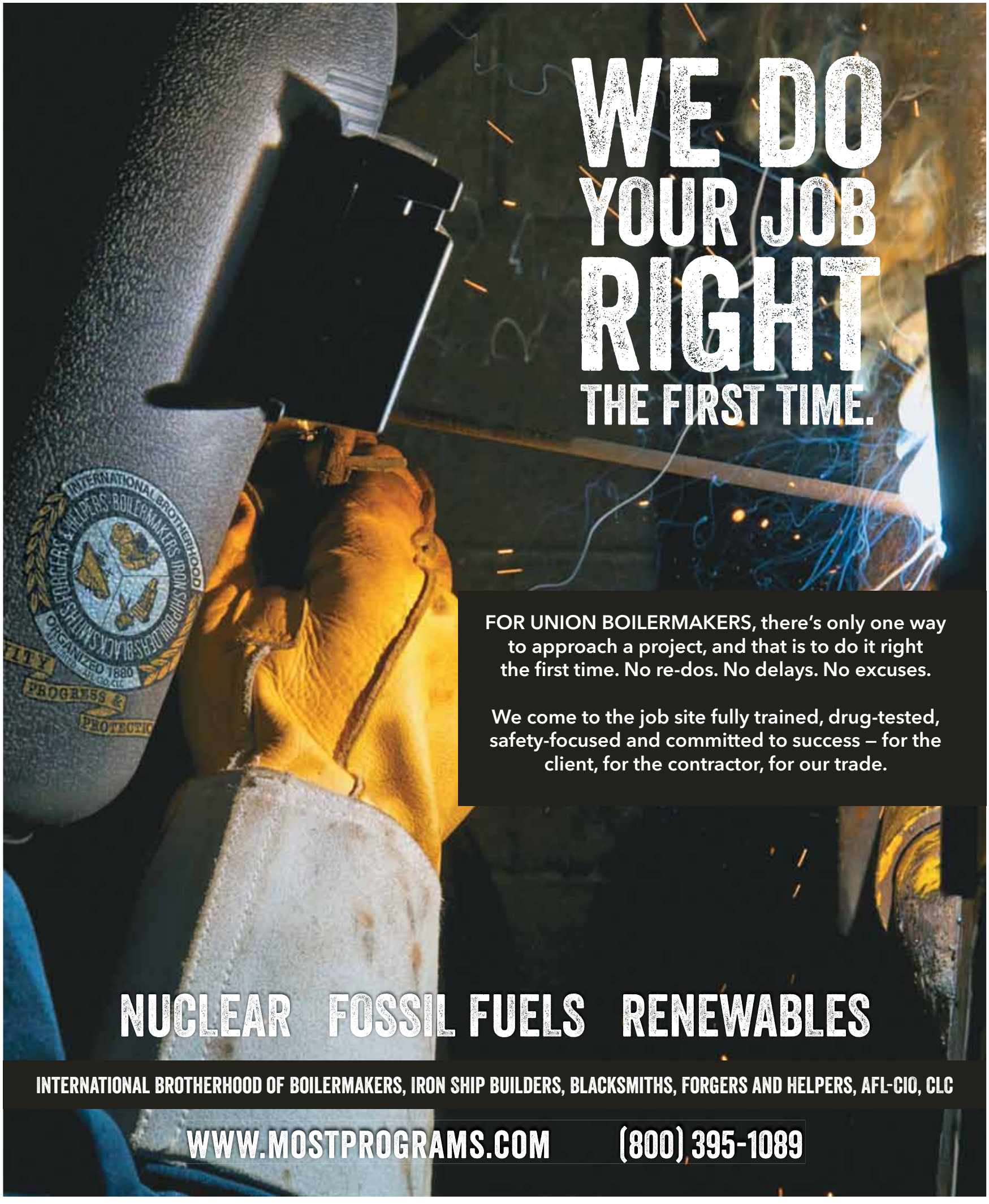
At an energy crossroads

Resetting our national energy policy is critical to Boilermaker jobs and the jobs of many other workers, union and nonunion alike. Communities have been devastated by closed coal mines and shuttered power plants. The EPA has seemed callous and indifferent to the harm its regulations have caused to working people.

It is vital that our nation adopt an "all of the above" strategy that maximizes the best use of every energy source we have available. For fossil fuels, CCS/CCUS holds the best promise.

Realizing that promise will require the current administration and both major parties in Congress to get serious about reducing emission levels and ending the demonization of fossil fuels.

Newton B. Jones is international president of the International Brotherhood of Boilermakers, Iron Ship Builders, Blacksmiths, Forgers and Helpers, AFL-CIO, CLC. The union, headquartered in Kansas City, Kansas, represents North American workers engaged in field construction and maintenance, shipbuilding, cement making, railroads, manufacturing, mining and other industries.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UA workers: Ready for 'epic' energy, infrastructure resurgence

By Mark McManus

The United Association of Plumbers, Pipefitters, Sprinklerfitters, Welders and HVAC Technicians (UA) is a multi-craft union that represents over 340,000 members in the United States and Canada. Our members are engaged in the fabrication, installation and servicing of piping systems and many of them work at refineries, power-generating facilities and petrochemical plants.

We are certainly no strangers to the energy industry, and we wholeheartedly believe that an overall approach — inclusive of economic impact, grid reliability and climate change — is the best formula when it comes to developing a balanced energy mix.

When deployed with the most current technology available, renewable resources such as solar and wind power, along with nuclear energy and fossil fuels including natural gas and coal, we can drastically reduce greenhouse gases.

These energy sources will also help grow our economy and maintain a reliable grid to manage the supply and demand of electricity with little disruption.

Over 60 percent of our man-hours come from the fossil fuels within the energy sector. The UA supports that sector through $250 million of privately funded and jointly administered apprenticeship programs. This investment ensures that our membership is provided with the education and training to demonstrate their highly skilled crafts within the energy industry. These careers also afford our members the opportunity to enjoy a middle-class lifestyle and receive the benefits of health care and a pension plan, both fully financed by their own money.

Our members are integral parts of their communities. They coach Little League, work as volunteer firefighters and perform countless hours of community service in the places where we live and where we work.

UA members have helped build some of the largest construction projects in North America — like the iconic Empire State Building and the National Harbor — and infrastructure projects like the Hoover Dam, Diablo Canyon Power Plant, Ivanpah Solar Power Facility and the Canadian Oil Sands development, which have proven vital to improving North America's energy independence. The UA was there on every one of these immense enterprises and delivered a high-quality, safe and productive product every single day.

Our country has tremendous opportunity in the energy industry, but it all hinges on an enlightened administration in Washington, D.C., to provide the policies needed to reach our full potential as an energy-independent nation.

Our country has tremendous opportunity in the energy industry, but it all hinges on an enlightened administration in Washington, D.C., to provide the policies needed to reach our full potential as an energy-independent nation.

We have massive shale gas resources in this country that can turn the United States into a manufacturing giant once again. By producing fewer greenhouse gas emissions, the move to natural gas-fired power plants is already making a positive impact in the reduction of our climate-damaging emissions.

In addition, our nuclear power industry can bring a new generation of reactors to market that are extremely safe and leave a carbon footprint comparable to renewable resources — but with a greater output of energy.

Carbon capture technology used in the coal industry is advancing to generate a realistic and attainable option for furthering our efforts in combatting climate change. The missed opportunity here will be if we continue to stall our technological advancements and keep them from being brought to market. President Obama overreached with the Clean Power Plan by giving more favorable weight to statements out of the environmental community rather than relying on sound scientific research and technology advancements to formulate a balanced energy policy. Implementation of the Clean Power Plan would have prematurely closed many of our coal-generation facilities without an opportunity to update them with new advancements in energy technology that result in a much smaller climate impact.

Renewables like wind and solar power are great clean energy options and should be part of the energy equation. But until wind and solar can generate and store electricity on a commercial level, we must engage other clean energy options to ensure reliable power 24 hours a day, 7 days a week. To date, renewable energy makes up less than 10 percent of the generated power in the United States.

America scored an unsettling D+ on the 2017 Infrastructure Report Card from the American Society of Civil Engineers — no improvement from our 2013 report card.

If we are to make any sort of significant improvement, estimates indicate that it will require an investment of upwards of $3.6 trillion. It is certainly clear that we must generate the financial resources to pay for this large infrastructure overhaul that our country so desperately needs. President Trump wants to spend $1 trillion and that's a great start, but the UA wants to hear him talk about Project Labor Agreements and Davis-Bacon protections for this work.

Overall, the president is moving the "energy and infrastructure" needle in the right direction, and the opportunities for the UA, our members and their communities will be epic.

He wants to expedite the permitting and regulatory process when it comes to construction projects. This will be a refreshing approach, as most large projects today spend more time in regulatory purgatory than it takes to actually complete the build.

The United States needs new pipelines, bridges, airports, water treatment plants and a variety of new and upgraded infrastructure to keep our country in tip-top shape and position us to be an economic superpower.

Our members are stand-up citizens who go to their jobs every day and perform the work required to generate power, refine gasoline, manufacture medicines and ultimately make North America the greatest, and safest, place to live on earth.

We believe that the Trump administration has the vision to step up to the plate and set the policies and seize the opportunities necessary to achieve energy independence and provide economic growth.

With our need for fossil fuels increasing faster than we are developing clean energy resources, if we shift our focus in the right direction, we can reduce our carbon footprint while creating good paying jobs for good men and women — jobs for welders, steamfitters, plumbers, service technicians, sprinklerfitters and pipefitters.

The UA is focused and ready to make this happen. It is good for our citizens, it is good for our communities, and it is good for the overall health and stability of North America.

Mark McManus is General President of the United Association of Journeymen and Apprentices of the Plumbing and Pipe Fitting Industry of the United States and Canada.

The United Association of Plumbers, Pipefitters, Sprinklerfitters, Welders and HVAC Technicians (UA) is a multi-craft union that represents over 340,000 members in the United States and Canada.

We invest over $250 million every year in training and certifications to produce the industry's safest, highest quality, and most productive workforce.

Through thousands of contractor partners across all industry sectors, we work with our customers to build, expand, improve, and renew their facilities so they can achieve their near and long-term goals, while adhering to the highest safety standards.

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Fuel cell vehicles available for sale or lease today in California. Image courtesy of Fuel Cell & Hydrogen Energy Association.

Fuel cells — The 'Triple Crown' winner for America's energy future

By Morry Markowitz

America appears divided about almost everything, but there are three generally accepted goals that transcend partisanship: energy independence, environmental stewardship and America's economic security. Today's rapidly growing fuel cell industry plays a role in achieving all three — a true Triple Crown contender.

Fuel cells generate power through a chemical process using hydrogen or hydrogen-rich fuels, such as domestic natural gas, biogas, solar or wind power. They enhance America's energy security and keep energy dollars at home.

Unlike other energy technologies that have shipped production overseas, the largest fuel cell companies continue to design and manufacture their products in the U.S., exporting to foreign customers, while creating jobs and expanding opportunities for American workers.

Automakers have invested billions of dollars in fuel cell vehicles (FCVs) and hydrogen technologies. Working with America's energy and gas companies, they also are contributing to the building of a hydrogen infrastructure.

Zero-emission FCVs are on California's roads today. They are being embraced by consumers because they replicate today's driver's experience of driving 300–400 miles on a tankful of hydrogen, and equally important, refueling in just three to five minutes. Californians can choose from multiple models, and drivers in the Northeast will see this amazing technology on their highways in the not too distant future.

Retail FCV fueling stations in California are similar to existing gasoline stations. FCV owners simply pull up to a hydrogen pump, swipe a credit card, and are back on the road in minutes, emitting only water from their tailpipes. On the East Coast, Toyota is partnering with industrial gas leader, Air Liquide, to build an initial hydrogen station network connecting New York City and Boston, the first stations of which will be operating by the end of the year.

One of the most exciting markets for fuel cells is in material handling, where fuel cell forklift sales are setting a fast pace. Unlike battery forklifts, fuel cell models suffer no downtime for battery replacement or recharging. Instead, workers pull up to a small hydrogen dispenser, refuel quickly and are back on the floor in minutes, increasing overall productivity. Some of the nation's largest retail companies such as Amazon, Home Depot and Walmart are pioneer adopters of fuel cells for their logistics and distribution centers to meet their energy efficiency goals, save money and increase productivity.

Additionally, leading technology companies, such as Apple, Google and eBay, as well as major utilities are increasingly turning to fuel cell systems for primary and back-up power for their facilities, substations, cell towers and data centers. Quiet, efficient, reliable and scalable — fuel cells are installed on-site to provide efficient power without the noise, pollution and high maintenance of traditional power generation.

Typically connected to our nation's natural gas pipelines, stationary fuel cell systems continue to operate even when the utility grid is unavailable, and are installed at hospitals, schools and grocery stores, among other sites. Through Hurricane Sandy and other northeastern storms, fuel cells proved reliable, powering through when the grid failed. The military, railroads, and oil and gas field companies also rely on fuel cells to power their off-grid equipment.

However, the continued growth and success of the fuel cell industry cannot be taken for granted. Fuel cell technology has made great strides from small but vital R&D assistance from the U.S. Department of Energy, which has helped build an impressive track record of industry milestones, produced U.S. patents and encouraged private investment.

The industry has also benefitted from incentives to help develop early markets. While tax credits were allowed to expire for fuel cells, far greater federal tax assistance remains in place for wind, solar, battery-electric vehicles and other technologies.

America's fuel cell industry is like a thoroughbred, and the members of the Fuel Cell and Hydrogen Energy Association are proud of what has been accomplished thus far. Other nations are betting heavily on their own fuel cell industries to jockey for a leading position, but we believe the U.S. can win the big energy race down the stretch. It is up to all of us in Washington and across the country to make sure that we do not place our bets on just one horse. Without government-imposed handicaps, we stand ready to help America achieve the Triple Crown of energy independence, environmental stewardship and economic security, making us all winners.

Morry Markowitz is President of the Fuel Cell and Hydrogen Energy Association.

Fuel cell vehicles (FCVs) are the only zero-emission vehicle available now that totally replicates today's driving experience. ***FCVs travel 300 – 400 miles on a tank of hydrogen fuel and refuel in just three to five minutes. Plus, hydrogen can be produced 100% here in the U.S.***

Find out more at www.fchea.org

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The need for federal energy innovation

By Jay Faison and Rich Powell

Here's something you may not know.

The human genome project, shale gas revolution, nuclear energy, touchscreens and the discovery of dinosaur extinction have something in common: They all owe their success to the Department of Energy and its predecessors.

Innovation underway at the department and our national laboratories encompasses half of all public energy research happening in the world.

We still do big, big things there, such as the exciting advancements in quantum supercomputing happening now.

But by and large, those world-shaping breakthroughs are getting fewer and farther in between.

How did we get off track from the days of building the first nuclear reactor in the span of only two years?

First, let's take a step back and remind ourselves why the government is involved in energy innovation in the first place and why a conservative outfit like ours is so focused on more government support for innovation.

Government-funded innovation has led to improvements for just about every type of energy technology.

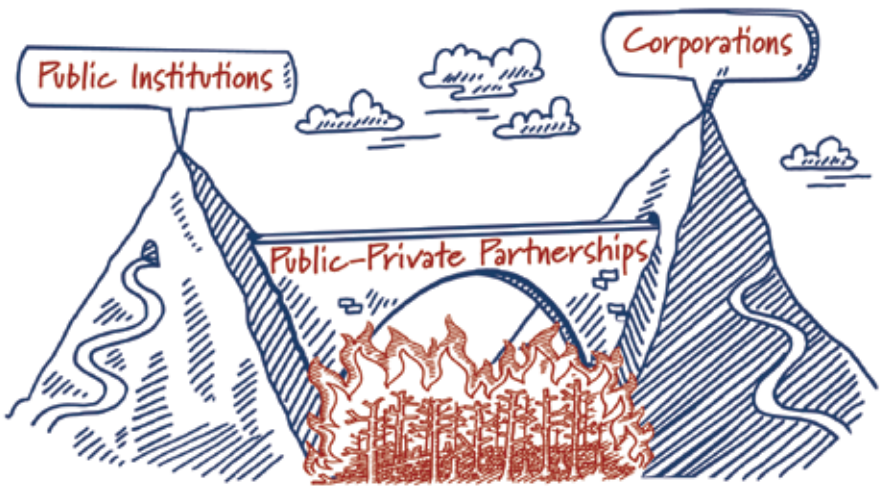
Energy innovation is an investment in prosperity and something the private sector can't do on its own.

People think of Uber when they think of innovation. But innovation in advanced energy is very different. Big energy solutions are not done in a garage by a small team of software developers.

Extensive federal and private collaboration in shale gas extraction technologies spanned three decades before the recent spark of the U.S. production boom. The Energy Research and Development Administration (which later became DOE) and the Morgantown Energy Research Center (the precursor to the National Energy Technology Laboratory) led a fossil energy research renaissance that began in the Ford administration. Public-private partnerships — such as General Electric's development of diamond-studded drill bits and a now-expired two-decade production tax credit for unconventional gas approved by Congress — were among the crucial efforts in keeping momentum headed in the right direction.

The payoff has been that U.S. natural gas has never been so abundant — which has driven down wholesale power market prices nearly 70 percent in the last decade. We're now converting our gas import terminals to allow the exporting of our reserves around the world. And emissions are at the lowest level since the 1990s, despite our economy growing by more than 80 percent since then.

This type of needed long-term investment in energy is not unusual. It can take many decades to have a real, large-scale impact — not the timeline most private businesses operate on. The benefits of new energy technologies also benefit everybody, rather than usually being a big payoff for one particular company. So it's a natural fit for the government to provide help in investment and demonstration.



Basic energy R&D is something most people can agree on and is why even some of the most fiscally conservative among us typically don't try to shortchange the Department of Energy's Office of Science.

But more focus is vitally needed on the federal role in applied R&D and demonstration, typically housed at other Energy Department offices, including those overseeing fossil energy and nuclear.

This is where a basic idea, such as capturing carbon from coal and gas plants and using it to enhance recovery of vast reserves of domestic oil, can actually turn into action worth trillions of dollars to private companies and the nation as a whole.

A good comparison is medical research, another area dominated with heavy risk and long-term and expensive experimentation.

America leads the world in medical research. We're doing the same on energy. But we're spending far more on health than energy R&D, despite both having enormous potential gains. At its zenith in 1979, applied energy comprised 23 percent of all non-defense R&D, the same as for medical research that year. Now applied energy takes up just 5 percent of non-defense R&D while health comprises 51 percent. Yet, the two sectors each represent about the same roughly 8 percent of the economy.

There is a "valley of death" between basic R&D and commercialization. Corporations, driven by quarterly earnings, don't have the budgets to build these technologies on their own and get them across this gap. And public institutions don't know what the customers of these corporations really want. We need more public-private partnerships to bridge this divide.

NuScale's advanced nuclear work is an example of what we should be accelerating. Their state-of-the-art design for small modular reactors, a first for a U.S.-based company, is a genuine breakthrough and a result of a public-private partnership between the engineering company Fluor, several small modular designs, and with the Energy Department helping to scale up the effort.

The Nuclear Regulatory Commission recently announced it has accepted NuScale's design for review.

But it took way too long to get to that point — 10 years, in fact. That needs to change.

But when it does go online as scheduled in 2023, it will be built on the site of the Idaho National Laboratory.

In fact, much of our energy innovation has been driven from the work being performed in our world-leading national labs.

But many applied programs, including those led by the labs, lack focus on driving technologies and focus on research for research's sake.

In recent years, the Department of Energy has often micromanaged research activities, and in turn limited creativity and private sector engagement and slowed technological development.

Instead, the federal government and businesses should agree to set ambitious goals to support demonstration of breakthrough technologies by the private sector.

Specifically, as part of ClearPath's conservative clean energy agenda, that could mean demonstrating:

- Four different private advanced nuclear reactor technologies by 2027.
- Four different commercial-scale carbon capture technologies by 2027.
- Three private-sector energy storage solutions lasting 5,000 cycles and with a profitable business model by 2027.

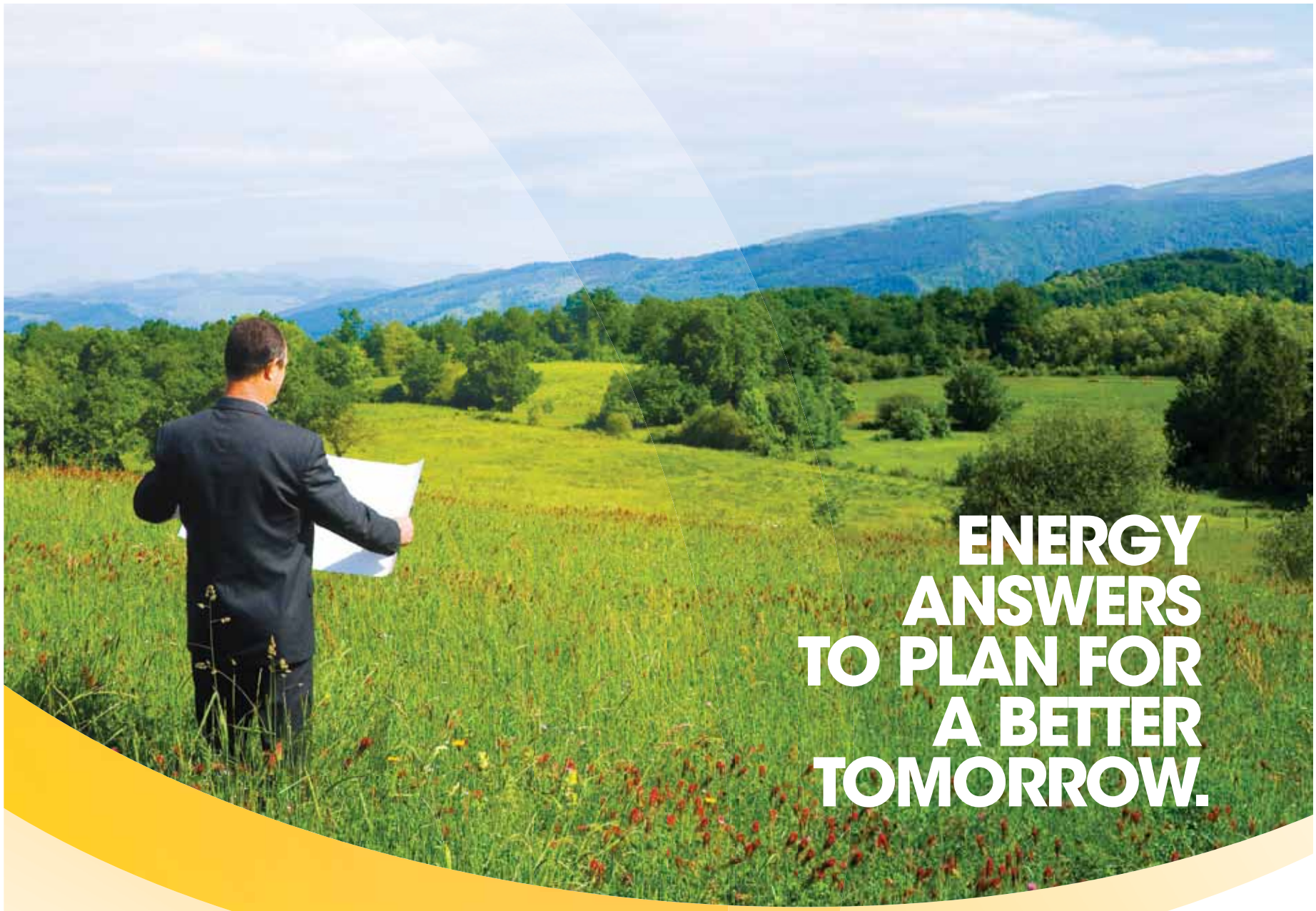
But goals alone aren't enough.

They need to be accompanied by deep private-sector engagement to ensure research activities are aligned with the needs of technology buyers. They need to be properly funded. And they must be flexible enough to empower researchers and regularly reviewed to ensure accountability (and discontinued or reevaluated when milestones are not achieved).

The Department of Energy can return to its innovation heyday, where policymakers, researchers and developers were all on the same page on what was needed to turn a blueprint into a billion-dollar industrial breakthrough.

But it'll take sustained federal dollars and vision to get there.

Jay Faison is the founder and CEO of ClearPath Foundation. Rich Powell is the executive director of ClearPath Foundation. Follow them on Twitter: @JayFaison1 and @powellrich



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Natural gas, plus renewables, light the path toward a bright energy future

By Terry D. McCallister

The global energy landscape continues to experience dramatic changes as we approach the third decade of the 21st century, providing us with immense opportunities to strengthen the energy sector — and our nation. Advancements in technology have made natural gas more abundant, renewable energy sources more accessible and enabled energy companies to fine-tune their solutions to address specific needs and desires of customers.

At the same time, the energy marketplace is responding to unprecedented change as customers at all levels expect more innovative, diverse and environmentally responsible energy solutions from the companies that serve them.

Within the natural gas sector, the largest factor in this industry pivot has been the shale revolution, which, thanks to technological advances, makes previously inaccessible supplies of natural gas available to bring to market.

Natural gas is now more abundant and affordable in the United States than ever before, providing greater energy security domestically. U.S. natural gas imports are at historic lows, while companies like WGL are taking advantage of export opportunities in the global marketplace. The increase in natural gas accessibility also has stimulated job growth and economic development.

As the cleanest of fossil fuels, natural gas is, and will continue to be, a mainstay of our nation's energy portfolio going forward. At the same time, customers increasingly are looking for renewable energy solutions. Wind and solar power have been around for centuries, but it is only recently that technological advances in electronic, engineering and manufacturing have made these solutions viable in the marketplace and economically attractive.

The popularity of renewable energy in the United States has also been spurred on by favorable federal government incentives, such as the Wind Production Tax Credit and the Investment Tax Credit for solar energy equipment. Similar tax benefits have been available for other energy technologies, such as geothermal energy and biomass generation.

At the state level, the adoption of renewable portfolio standards (RPS) — requiring utilities to generate or acquire a certain percentage of the electricity they sell from renewable sources — is continuing to increase. Today, 29 states and the District of Columbia have mandatory RPS targets, while eight other states have voluntary targets.

Natural gas infrastructure is also benefitting from innovative policies, such as accelerated pipeline replacement programs that allow utilities to upgrade and enhance aging natural gas distribution systems and recover costs for infrastructure investment on a timely basis.

Forward-looking policymaking across the energy spectrum is vital to the country's future, as are investments in research and development. Today, more than any other time, customers — mainly large commercial and institutional customers — are demanding distributed energy solutions and diverse energy portfolios. And there's good reason: By generating power onsite, large or small businesses, government campuses, schools, hospitals and even entire communities can eliminate the cost, complexity and inefficiencies of traditional grid electricity or power.

Today's energy-savvy customers are also craving energy efficiency solutions, such as Combined Heat and Power (CHP), to generate power and heat through an integrated system. CHP brings immense benefits — providing efficiency in power and heat generation of up to 80 percent.

Bringing all of these solutions together requires a combination of traditional resources, such as natural gas, alongside renewable energy, including wind and solar. This combination harnesses the advantage of new technologies and data, and the favorable incentives for production and manufacture.

At WGL, we are so much more than a natural gas company. We exemplify the diverse energy revolution taking hold — and thriving. Our regulated utility, Washington Gas, provides safe, efficient and reliable natural gas service to more than 1.1 million customers, and has been serving customers for nearly 170 years.

At the same time, through our newer, non-utility businesses, we have invested nearly $700 million in distributed generation, including solar and fuel cell projects. Our assets consist of more than 235 projects across the country, representing 145 megawatts of distributed generation capacity in service, with an additional 66 megawatts contracted or under construction.

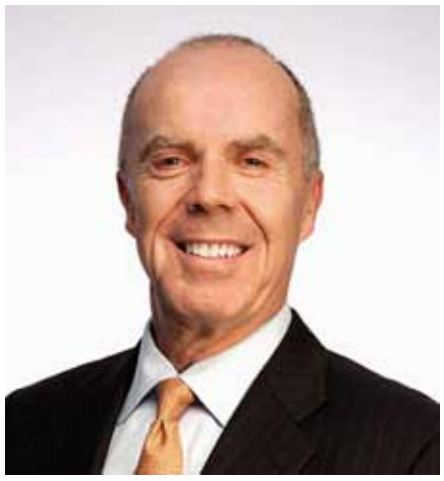
We are also delivering integrated solutions to customers, such as the Catholic University of America, a longtime natural gas customer, which now includes wind power and asset-owned solar power. Our solution for The Parks at Walter Reed includes natural gas as the primary fuel source for onsite generation, alongside renewable power options and energy storage systems. This integrated system will mitigate fuel price volatility, provide long-term operational efficiency and deliver competitive energy rates.

At WGL, we know the road ahead lies in both diversity and integration. It is essential that federal and state policies continue to foster innovation, exploration and pave the way for a stronger energy future. As a company, we will continue to leverage advances in technology, traditional natural gas, combined with cleaner, renewable energy to serve the rapidly evolving needs and desires of our customers. It is this creativity and innovation, driven by core expertise, that will ensure our role in the future of energy.

Terry D. McCallister is Chairman of the Board and Chief Executive Officer of WGL Holdings, Inc., and Chairman and CEO of Washington Gas.

Technological advances, like the fuel cell technology used in the Bloom Energy Server* or Bloom Box, combine with traditional sources of energy to provide a wide spectrum of clean, reliable and affordable electrical solutions for customers. Source: University of Delaware, WGL Energy.

Why it's a critical — and ideal — time to upgrade America's energy infrastructure



By Adrian P. Chapman

Our nation's aging infrastructure is in significant need of investment and care if we want to ensure a secure future for coming generations.

While most people think of infrastructure in terms of highways, roads and bridges — things everyone can see — we must not forget the energy infrastructure that exists out of view of most of our fellow citizens.

The 2017 Infrastructure Report Card produced by the American Society of Civil Engineers rates our nation's energy infrastructure as a D+, which once again sends a clarion call that we must address this issue as we consider our nation's overall needs. When Congress takes up this issue, we must all work together to advocate for policies and investments that position our country for continued growth, energy independence and national security.

Technological advancements in our industry have enabled access to a wealth of previously inaccessible natural resources, both in the United States and globally. The U.S. Department of Energy estimates that shale development alone could increase globally recoverable natural gas by 32 percent. In the U.S., shale development could extend the potential life of natural gas reserves more than 90 years. Today, the U.S. is not only the leading natural gas consumer, we're also the top producer in the world.

The natural gas surplus generated by the shale revolution has led to several benefits, including lower wellhead prices, reduced imports and rising inventories of natural gas storage. In addition, the cost of drilling new shale wells has dramatically declined. This means that fewer rigs are being employed, but new wells are more productive and cost-efficient.

Demand for natural gas is understandably high in multiple sectors, but particularly strong in the electric power sector, which is the largest consumer of natural gas in the U.S. The nation has reached a critical time to invest in its aging energy infrastructure — and the overall lower prices, combined with increased demand, make this an ideal time to do so, as well.

Lower energy bills are part of what attracts both customers and regulators to look more favorably at the prospects of infrastructure investment.

At WGL, we are working with our stakeholders to upgrade existing infrastructure and add new infrastructure to expand the availability of safe, affordable and abundant natural gas to more customers. Overall, WGL will invest more than $1.8 billion over the next five years in new or upgraded pipelines at Washington Gas, our utility business.

Our regulators in the District of Columbia, Maryland and Virginia have long recognized the need to invest in infrastructure and have supported Washington Gas' mission to provide our customers with safe and reliable natural gas service. In each of these jurisdictions, Washington Gas has worked with our regulatory commissions to establish accelerated pipeline replacement programs. These programs — STRIDE in Maryland, SAVE in Virginia and PROJECTpipes in the District of Columbia — allow timely cost recovery associated with pipeline infrastructure investment while also helping to reduce greenhouse gas emissions. This is all happening at a time when, due to the low cost of natural gas, our customers' natural gas bills are roughly 35 percent lower than 10 years ago.

We are also working to bring natural gas to more areas to meet the energy demands of our region. We are currently in the planning phase of a $34 million project to bring natural gas to Southern Maryland, one of the fastest-growing areas of the state. Natural gas availability increases energy reliability and spurs economic development by promoting and attracting growth of commercial, institutional and residential customers. Even with these planned projects, we are far from tapping the customer potential in our region, so we look forward to increased economic development opportunities.

The natural gas surplus generated by the shale revolution has led to several benefits, including lower wellhead prices, reduced imports and rising inventories of natural gas storage. In addition, the cost of drilling new shale wells has dramatically declined.

Washington Gas and its employees have served the Greater Washington area with pride and dedication for nearly 170 years.

In addition to our utility investments, WGL also understands the critical importance of investing in transmission infrastructure.

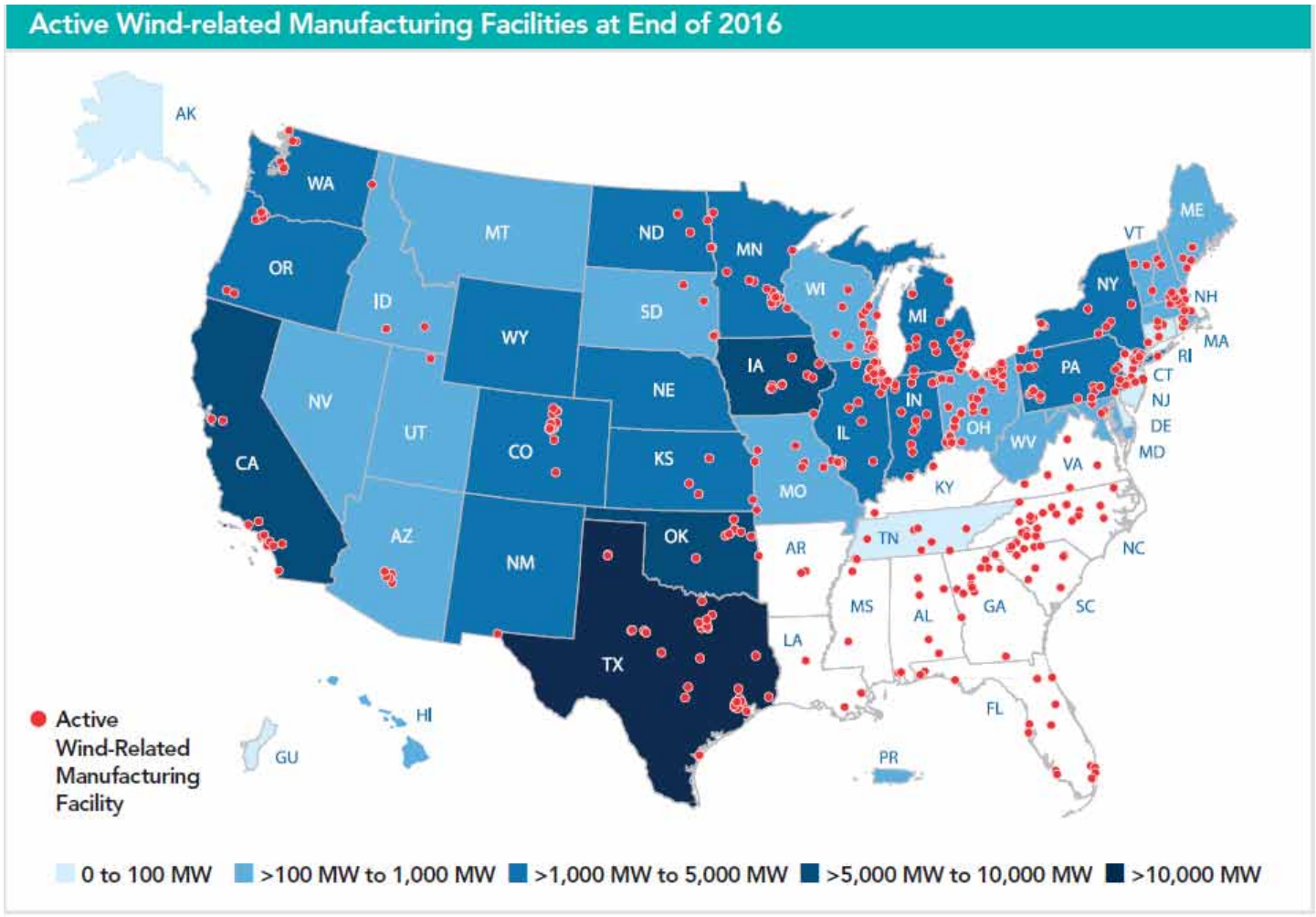
Along the densely populated Eastern Seaboard, for example, a robust energy distribution approach is vital to provide safe, cost-effective and reliable natural gas transmission and bring resources from the Marcellus shale formation to market. WGL's Midstream business has made strategic investments to address this trend, acquiring ownership stakes in the Constitution, Central Penn and Mountain Valley pipelines. The Stonewall Gas gathering system, in which we have a 30 percent ownership stake, is already collecting approximately 1 billion cubic feet of gas every day.

Finally, we must recognize the role of new energy sources and technologies in planning for our nation's energy future. While traditional fuels are a linchpin of that future, alternative energy solutions, such as renewables and distributed generation, are also critical to a secure and sustainable energy portfolio for our nation. At WGL Energy, WGL's non-utility business, we are making these energy solutions more accessible to consumers, delivering a full ecosystem of energy offerings, including natural gas, electricity, solar and wind power, carbon reduction, energy efficiency and distributed generation. Realizing the full promise of these sustainable solutions requires additional infrastructure investment, as well as a comprehensive national energy policy that encompasses that full spectrum of energy answers.

There is no question that expanding and improving our energy infrastructure serves both the economic and security interests of the United States. Energy projects alone represent approximately 32 percent of the U.S. construction industry work force, or more than 2 million workers. Infrastructure investment is also environmentally responsible. Over the past 20 years, emissions from natural gas distribution systems have decreased by 36 percent — and as much as 70 percent — largely due to replacement of older pipeline materials. At Washington Gas, we have reduced our own fugitive emissions by 20 percent since 2008, surpassing our 2020 target of 18 percent by five years. Going forward, we have set a goal of reducing fugitive emissions intensity from our distribution system by 38 percent (from a 2008 baseline) by 2025.

It is continued investment in our energy infrastructure that will help us achieve this ambitious goal while also continuing to safely and reliably meet the energy demands of our customers, our region and our nation.

Adrian P. Chapman is President and Chief Operating Officer of WGL Holdings, Inc., and Washington Gas.



Wind energy: Offering grid reliability, security and diversity

By Tom Kiernan

Strong national security and a healthy economy share a basic component: access to reliable, affordable energy.

Wind power delivers this by making the grid and America's electricity mix more diverse, secure, and — now that turbines have scaled up across 41 states — more reliable too.

The people who keep the country's lights on know this firsthand. Xcel Energy's Colorado Balancing Authority already runs on 20 percent renewable energy. ERCOT in Texas last year got 15 percent of its electricity from wind. The Southwest Power Pool (SPP), grid manager across 14 states, is approaching 20 percent year-round — and just peaked at 52 percent wind energy on Feb. 12.

All these systems already operate reliably with much higher levels of wind energy than we have so far nationwide, and they're saving fuel for when they need it.

"Ten years ago we thought hitting even a 25 percent wind-penetration level would be extremely challenging, and any more than that would pose serious threats to reliability," said Bruce Rew, SPP's vice president of operations. "Now we have the ability to reliably manage greater than 50 percent. It's not even our ceiling."

SPP's experience is not unique. Other grid operators and Department of Energy researchers have studied scenarios where renewables provide 25 percent to 50 percent of electricity and found no concerns on any measure of reliability.

PJM, America's largest grid operator, recently found how wind complements gas to provide resilience during the Polar Vortex weather event. PJM also found it could handle even 75 percent wind power reliably.

So it's clear the country can use more wind power without issue. Even better, adding another generation source makes the whole system more resilient because it's more diverse.

How does that work?

Grid operators have always balanced fluctuating electricity demand — as appliances, air conditioners, and factories turn on and off, and conventional power plants break down unexpectedly.

Meanwhile, over large areas wind output stays constant, with changes slow, predictable, and mostly canceled out by larger variations in demand and other supply. Abrupt loss of a large conventional generator is more costly.

This was on display during 2014's Polar Vortex. When extreme cold shut down several conventional power plants, with natural gas prices already elevated by sky-high home heating demand, wind turbines kept reliably turning. That saved Great Lakes and Mid-Atlantic families and businesses over $1 billion in two days.

It happened again a year later, when a New York nuclear plant went offline unexpectedly. During a similar previous outage, spot energy prices more than tripled. This time, however, the state's wind farms picked up the slack, keeping money in consumers' pockets.

Another way wind turbines make our electricity system more reliable: fast and accurate voltage and frequency control. Many blackouts, like one that hit Washington, D.C., in 2015, happen in part because conventional power plants went offline during voltage and frequency disturbances on the grid. Thanks to their advanced power electronics, wind and solar plants withstand such disturbances far better.

On top of all this, the wind industry is doing one of the hardest things in America: adding new factory jobs. Today, over 25,000 U.S. wind workers have jobs in more than 500 factories, and the industry will add another 8,000 factory jobs by the end of President Trump's first term. Overall, 100,000 Americans have wind jobs, and wind-related employment is projected to reach nearly 150,000 by 2020.

A stronger, more reliable grid, and hundreds of thousands of U.S. jobs across all 50 states: That's how wind works for America.

Tom Kiernan is the CEO of the American Wind Energy Association. You can follow him on Twitter at @TomCKiernan.

AWEA AMERICAN WIND ENERGY ASSOCIATION

Wind power has created over

100,000

AMERICAN JOBS,

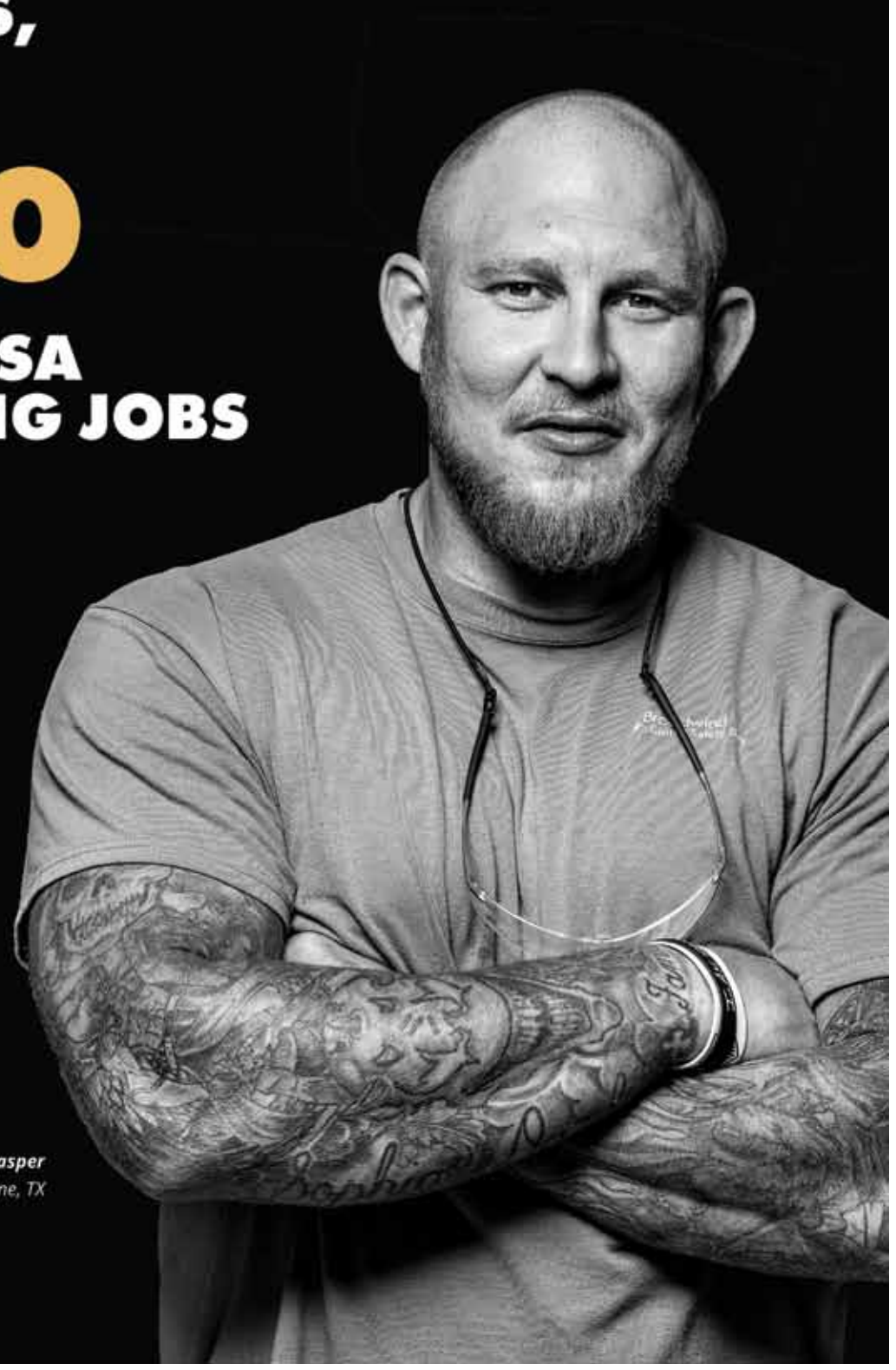
including more than

25,000

MADE-IN-THE-USA MANUFACTURING JOBS

in over 500 factories.

And, wind turbines make the electric grid's sources more diverse and reliable, adding to America's energy security.



Blake Kasper
Quality Supervisor, Abilene, TX

PHOTO BY ED COLLIER FOR THE WIND PORTRAIT PROJECT

Clean coal technologies: Vital for U.S. energy security, export opportunities

By Sen. Joe Manchin

It remains undeniable that West Virginia and the United States have an abundance of natural resources, and throughout our history, we have used and relied on these resources, particularly coal, to build and defend the nation. But for the last eight years, we had to work with an administration that denied just how important coal is to keeping America secure.

I have worked tirelessly to undo the devastating burden that overregulation placed on West Virginia's economy and our communities. In 2015, I introduced a Congressional Review Act Resolution of Disapproval to stop the Obama administration from imposing the Clean Power Plan, an anti-coal regulation, on new coal-fired plants.

These regulations forced coal-fired plants to meet emissions standards that could not be achieved, even with the most advanced technology. Forcing coal to meet these standards — when experts know that the required technology was not sustainably operational on a commercial scale — made absolutely no sense.

But here's what does make sense: Let's secure the future of coal through pursuing and supporting advanced coal technologies and efficiencies. Coal continues to be one of our most reliable sources of electricity. Today it is about 30 percent of our electricity mix and provides reliable, affordable 24-7 power. And according to the Department of Energy, the U.S. will continue to depend on coal for years to come. In fact, in 2016, the Energy Information Administration projected that, in the absence of the Clean Power Plan, 26 percent of our electricity will continue to be generated from coal through 2040. So it's vital that we pursue clean coal technologies to continue to provide fuel diversity and reliable, affordable energy.

In the Energy Policy Modernization Act that passed the Senate last year, I secured several provisions that would modernize the Fossil Energy program at the Department of Energy in a way that gets our research dollars back to work on outcome-based results. I am working with the Government Accountability Office (GAO) to look at why the federal government has not awarded more loan guarantees to fossil energy projects. And I am supporting the pursuit of carbon capture utilization and sequestration technology at our universities, our labs and at our power plants.

Let's focus on leading the way in the development of clean coal technology. American ingenuity should be harnessed right now — not restrained — to ensure our future at home and to be a leader for the world.

Production at the Stone Coal Alma #2 Mine in the Elk Creek project in Logan County, West Virginia. Photo courtesy of Ramaco Resources, Inc. For more information about this company, please visit www.ramacoresources.com.

In the meantime, India and China will continue to use and build additional coal-fired capacity. That is a reality that we should consider an opportunity — not a catastrophe. As a nation that built its greatest successes on coal energy, it makes good sense that the United States leads in bringing clean coal technology to commercialization — and exports that technology to the rest of the world.

Let's focus on leading the way in the development of clean coal technology. American ingenuity should be harnessed right now — not restrained — to ensure our future at home and to be a leader for the world. It's the answer that strikes a balance between the economy and the environment, and one that I'm going to keep working toward.

Sen. Joe Manchin III, West Virginia Democrat, serves on the Senate Energy and Natural Resources Committee, where he is ranking chairman of the subcommittee on energy and a member of the subcommittees on water and power, and public lands, forests and mining.

Clean coal must be part of our energy future

By Rep. David B. McKinley, P.E.

Over the last eight years, America's coal industry has withstood a withering attack from unelected bureaucrats in Washington. While our Constitution makes it clear Congress writes the laws, the president enforces them and the courts interpret them, the Obama administration was determined to impose its radical climate-change agenda by relentlessly governing through executive orders and bypassing Congress.

As a result, over 3,500 new rules and regulations were imposed by the executive branch, including 1,500 rules on coal alone.

Few industries were harmed the way the coal industry was.

The war on coal devastated small towns and rural communities. In total, over 400 mines closed, 246 coal-fired plants shut down and over 83,000 jobs were lost. This is hardly a level playing field. The economy of my home state of West Virginia was pummeled.

When the American people went to the polls in November, it was made perfectly clear that they no longer wanted a growing federal government that dictated and imposed painful regulations.

The outgoing Obama administration missed that message, however, as they still tried to force through another rule that would sideline up to 87 percent of longwall minable coal. This rule would have rewritten over 400 existing regulations, shut down more coal mines, and jeopardized the livelihoods of over 78,000 workers and their families. It was an outrageous attack on working families and an attempt to put a final nail in the coffin of the coal industry.

As chairman of the Congressional Coal Caucus, it was my No. 1 priority to reverse this kind of government abuse. After working with other members, we were able to pass legislation that was later signed by President Trump to stop this rule. Washington must stop picking winners and losers and ignoring the realities of the marketplace. We cannot continue to attack the coal industry if we are going to stay economically competitive with the rest of the world — which still has a voracious appetite for coal.

Developing countries are building coal plants at a rapid rate and planning to burn coal well into the future. Japan and South Korea are building 61

» see **MCKINLEY** | C21

The comeback of coal

By The Washington Times Editorial Department

President Trump's boisterous press conferences sometimes cast a shadow over one of his most important achievements so far: his executive order suspending runaway Environmental Protection Agency rules that all but bankrupted the American coal industry. Three of America's largest coal companies declared Chapter 11 in recent years largely as a result of rules like the Clean Power Plant Act, a gift of Barack Obama.

The regulations Mr. Trump rescinded were intentionally designed by Mr. Obama's EPA to strangle American coal. Tens of thousands of coal miners and workers in related industries were sent to unemployment lines, but that didn't bother the liberal fixers of "things that ain't broke." Coal towns in Ohio, Pennsylvania, Virginia and West Virginia were devastated. The Sierra Club celebrated and said the crusade against coal wouldn't be over until every coal miner was out of a job. Hillary Clinton said so, too. These cold liberals said the government could just send more welfare checks to Appalachia.

America was built on coal. Fossil fuels, following the demise of windmills and the like as the sources of inefficient production of electricity, provided the spark that ignited American industry and made it the industrial leader of the world, and kept it the leader for more than a century and a half. "America," said Winston Churchill on the eve of World War II, "is a mighty boiler, and once alight there is no limit on what it can produce." Coal fired that boiler.

Despite an eight-year assault on coal by fanatics who dream of an America cut down to size, coal is still responsible for almost a third of America's electricity. Wind and solar power, despite enormous subsidies of more than $100 billion over the last decade, still produce less than 5 percent of America's energy.

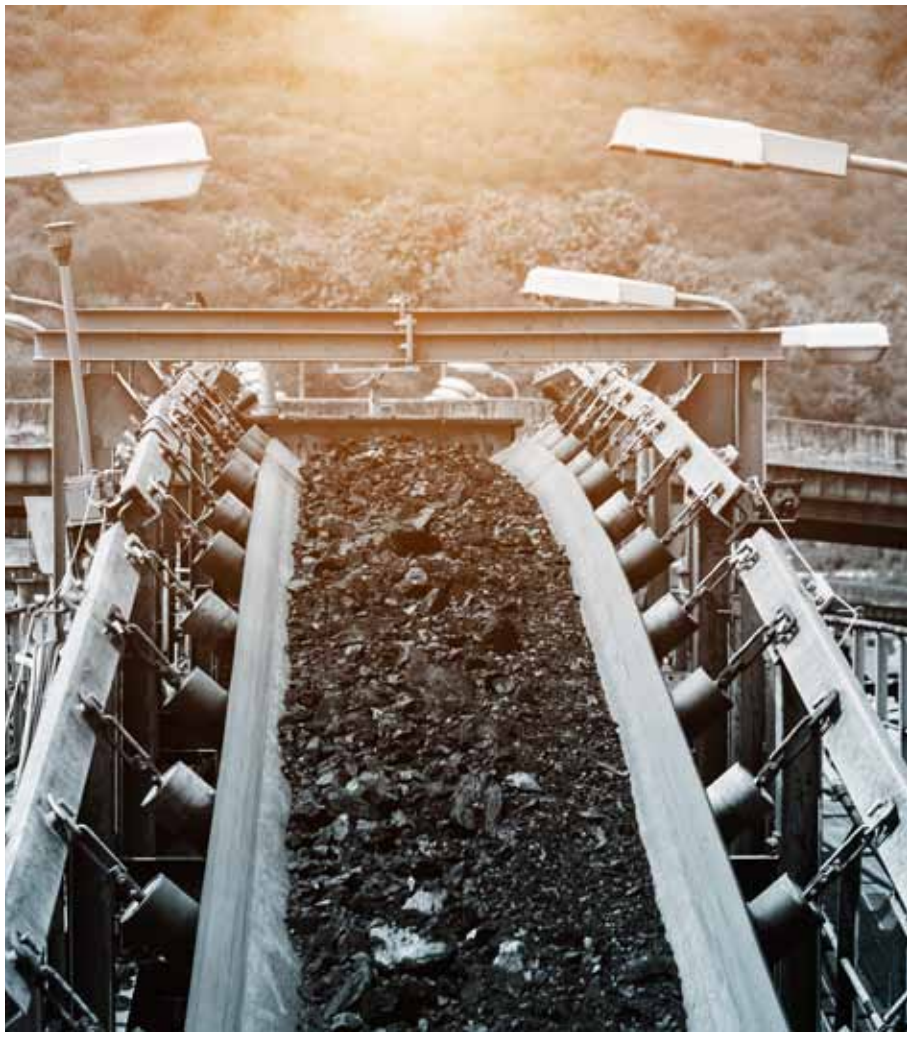
Skeptics say coal can never come back because it can't compete with cheap and abundant natural gas. But coal production costs are falling and — environmentalists, take note — clean coal is here to stay. Emissions from coal plants have fallen by more than half over the last 30 years, and improvements are coming if the government will just get out of the way.

Healthy competition between coal and natural gas — both superabundant, both "American made" — is just the kind of magical market force that drives down prices for consumers. Thanks to coal and natural gas, the United States enjoys the lowest cost of power, which gives American industry an enormous competitive advantage. Nuclear power will continue to play an important role, and naturally the left hates nuclear power, too.

The left gave up on the 100,000 coal workers in America more than a decade ago. Donald Trump has not. That's why the working class saw him, not Hillary, as friend and champion. Those who say coal is yesterday's energy source should stand back and watch what's coming. Energy is the master resource, and everything produced by man, from food to computers to skyscrapers, is ultimately derived from energy. The free market, not government, should choose which cost-effective energy source to feed that mighty boiler.

America has 500 years of coal reserves — far more than any other nation in the world. We should use it.

This Washington Times editorial was originally published on Feb. 23, 2017.



MCKINLEY

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coal plants. India plans to double its coal output by 2020, and China is looking to increase its coal consumption by 70 percent by 2040.

We also know that shutting down coal plants here in America will have little to no impact on our planet's environment. According to the United Nations, if the United States were to stop using coal, it would only reduce global emissions by two-tenths of 1 percent.

Instead of imposing a partisan political ideology, Congress should focus on an "all of the above" energy plan that would:

- Adopt a bipartisan national energy policy.
- Advance clean coal technology.
- Fund fossil energy research.
- Export high-quality American coal to developing countries.
- Invest in retrofitting our existing fleet with new technology and allow for the construction of new, reliable, high-performing plants.
- Develop innovative energy technology to sell to other countries that burn coal.

We already know that clean coal is an obtainable objective. West Virginia is home to Longview Power Plant, the cleanest and most efficient coal-fired power plant in North America. However, because of the Obama administration's New Source Performance Standards (NSPS), utilities cannot replicate or improve upon their technological advancements. The NSPS is just another set of handcuffs placed on the coal industry that will cost America jobs and drive up prices for consumers.

With President Trump, we now have a partner in the White House who understands just how painful these rules can be. His administration has already shown that cutting red tape and providing our economy with relief from the regulatory attack out of Washington will allow America to reclaim our mantle of energy leadership on the world stage.

We need to keep the momentum going. So let's work together towards a more balanced approach that transcends partisan politics, and provides clarity and certainty by embracing all of our energy sources.

Republican Rep. David B. McKinley, P.E. represents the 1st Congressional District of West Virginia. He is the chairman of the Congressional Coal Caucus and serves on the House Energy and Commerce Committee.

Why we can all agree on nuclear energy

By Rep. Randy Weber

Renewed interest in nuclear energy is a point of discussion among lawmakers and scientists alike. Of all the topics on which Washington can come together, what is it about nuclear energy that draws us?

Nuclear energy is sometimes met with skepticism. Many do not learn about nuclear power in school, and environmental activists perpetuate fears about safety and security. But, as the only emissions-free source of baseload electricity, nuclear power is a key part of our energy future.

The generation of nuclear energy occurs when the isotopes of elements are split, releasing the energy that holds the nuclei of atoms together. This splitting process, called fission, releases neutrons and energy in the form of heat. The neutrons cause more fission to occur, creating a self-sustaining chain reaction.

Just like in a coal or natural gas power plant where fossil fuels are burned to heat water, the heat from this chain reaction boils water to create steam, which powers turbines and generates electricity.

Over the last several decades, nuclear energy has fallen by the wayside, as oil and gas prices have dropped, and solar and wind energy have seemingly become more popular.

Despite this, nuclear energy remains a viable source. The ease of nuclear energy — and its long-term sustainability — merits the upkeep of nuclear infrastructure, as well as continued research and development in the field.

Innovation in nuclear energy is necessary in this 21st century world. To see these gains, we must invest in talent and work with the industry.

The Nuclear Innovations Capabilities Act, which I introduced, prioritizes U.S. Department of Energy research and development infrastructure capabilities that enable the private sector to develop advanced reactor technologies. This would also authorize the construction of a versatile neutron source that will operate as an open-access facility. This facility will give researchers and industry access to fast neutrons, which are currently only available overseas.

Working with the Department of Energy, advanced reactor companies would be given the opportunity to test, improve and develop their technology without burdensome federal regulations hampering the speed of the process. We need to quit wasting time. Department of Energy can ensure these new designs are developed safely, and allow researchers at our national labs to provide technical expertise.

The federal government's role in nuclear energy innovation is clear — provide the research infrastructure and technical expertise, and allow private companies to access these research facilities in order to develop advanced reactor technologies.

Among the many benefits of this collaboration, it provides the necessary technical means to reduce the likelihood of nuclear proliferation and ensure responsible use of nuclear power. In doing so, we increase confidence margins for public safety and nuclear energy systems, and America maintains its prominent leadership role in nuclear control and detection technology.

Nuclear energy has an abundance of supporters in both legislative chambers on Capitol Hill for obvious reasons. It is an affordable and reliable source of power. Additionally, nuclear energy is emissions-free.

Industry, free-market advocates and environmentalists can find compromise in this energy source. Investing in nuclear energy affords an occasion for improvements to energy security, national security and more.

A private-public partnership is critical to nuclear energy innovation. Nuclear energy innovation is sound policy for a more confident, energy-independent nation.

Republican Rep. Randy K. Weber Sr., represents the 14th Congressional District in Texas. He serves on the House Science, Space and Technology Committee, where he is chairman of the subcommittee on energy and a member of the subcommittee on environment.

Yucca Mountain: Finish licensing process on nuclear waste storage

By Rep. Joe Wilson

As the former deputy general counsel of the Department of Energy during the Reagan administration, serving with Secretary Jim Edwards, I know the department has very competent personnel and we are fortunate for the leadership of Secretary Rick Perry.

Since the beginning of our nation's nuclear history — from the Manhattan Project, through the Cold War, to our commercial facilities today — our country has been searching for a permanent, long-term storage option to safely and securely store our nation's nuclear waste.

In 1987, after exhaustive Department of Energy studies, Yucca Mountain in Nevada was selected as the nation's permanent long-term repository for all high-level waste, and significant resources were directed to constructing and licensing the facility.

It is an ideal repository — located on federal land near an early site for Cold War nuclear weapons testing; rated environmentally safe for over 1 million years (far exceeding the 10,000-year standard); and supported by officials of Nye County, where Yucca Mountain is located.

In 2010, without citing any scientific or technical data, the previous administration decided to halt progress on Yucca Mountain by preventing the Department of Energy from cooperating with the required licensing process, leaving the country without a plan for a permanent repository. It is in the interest of our national security, fiscal responsibility and environmental cleanup missions to complete the nonpartisan, fact-based licensing process for Yucca Mountain.

Having a single, permanent repository for high-level nuclear waste is critical for our national security.

Right now, nuclear waste is stored at 121 sites across 39 states. Each one is intended to be temporary, but sites are forced to store the waste for far longer than intended because there is no permanent repository.

While the technology is constantly improving to prolong storage capabilities, the fact remains that the only safe way to store the material long-term is in a geological repository — something uniquely available at the Yucca Mountain facility. It is imperative that we make progress on a permanent disposal option.

In January, I introduced the Sensible Nuclear Waste Disposition Act, commonsense legislation that simply requires that the Nuclear Regulatory Commission make a licensing decision about Yucca Mountain before the Department of Energy can consider other options for long-term waste.

I am confident in the high standards of the Nuclear Regulatory Commission licensing process and am confident that Yucca Mountain will get a comprehensive examination — one that prioritizes safety and environmental protections for citizens of Nevada.

I am encouraged that President Donald Trump's budget outline included $120 million to restart the licensing process, but also urge the passage of my legislation in order to affirm Congress' commitment to a long-term storage plan for our nuclear material.

We have a national duty to work towards a permanent repository for nuclear material, and the Department of Energy, under the extraordinary leadership of Secretary Rick Perry, should ensure we see the licensing process on Yucca Mountain to completion before abandoning it for any other alternative.

The federal government should finish what they started — or, at the very least — make an official decision on Yucca before spending billions of dollars on a duplicative facility.

Republican Rep. Joe Wilson represents the 2nd Congressional District in South Carolina. He is a member of the House Armed Services Committee, where he is chairman of the subcommittee on readiness and a member of the subcommittee on emerging threats and capabilities.

Aerial view of north end of the Yucca Mountain crest in February 1993. Image courtesy of Department of Energy.

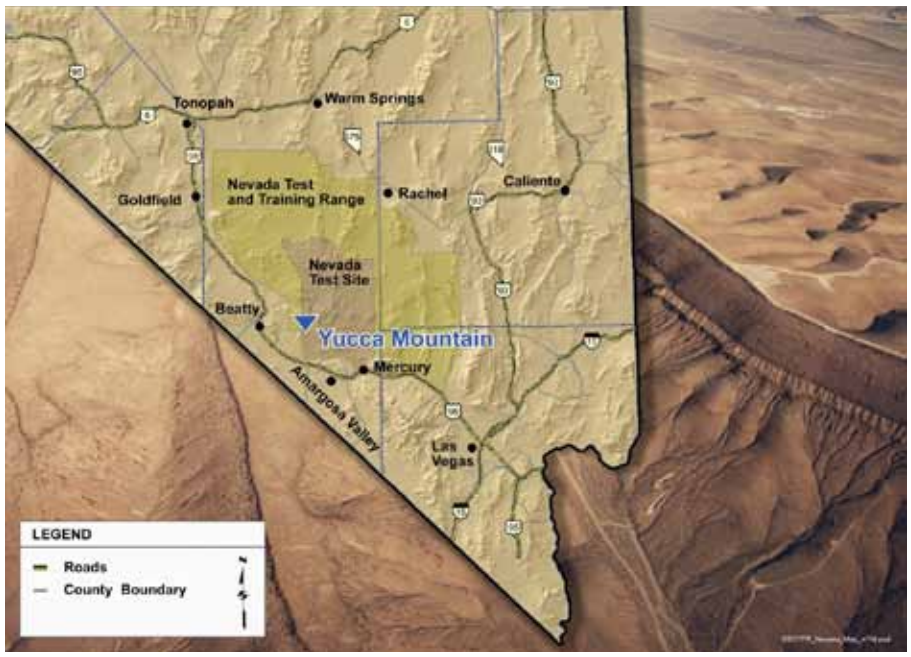

Image courtesy of Department of Energy

The many benefits of 'turning trash to power'

By Kimberly Clark

When formulating public policy, regulators and lawmakers should consider the many benefits of using municipal waste as fuel for power generation (aka waste-to-energy technology) — including cost-competitiveness with other forms of energy, environmental performance that is comparable to natural gas, greenhouse gas reduction, encouragement of recycling programs and greater reliability than many other forms of renewable energy.

Waste-to-energy as an option for base load power generation enjoys some popularity in the southeastern and northeastern United States, where state energy and environmental policies have encouraged their construction. Nationwide, about 87 of these plants are turning trash into power. However, due to the lack of a comprehensive national energy policy or widespread state policies that take into account the many benefits of generating renewable energy from waste, the U.S. waste-to-energy industry lags in adoption compared to Europe (where more than 500 plants are operating or under construction) and Asia (where more than 1,600 plants are operating or under construction), where waste-to-energy is commonplace for generating heat and power.

Part of the problem, as we see it, is perception. Today's waste-to-energy power plants are not the "dirty incinerators" of years gone by that garnered a reputation for spewing pollutants into the atmosphere.

Today, generating clean power from trash that would otherwise end up buried in a landfill can play an important role in fulfilling a great many public policy goals, including reduction of air pollutants and greenhouse gases, decreased reliance on landfilling and increased rates of recycling.

As a provider of proven combustion and environmental technologies for waste-burning plants, Babcock & Wilcox can play a leading role as states and municipalities to take a closer look at generating energy from trash. However, we feel the benefits extend far beyond opportunities for our own business.

A great example of that can be seen in West Palm Beach, Florida, which today has the cleanest and most advanced waste-burning plant in North America. The Solid Waste Authority of Palm Beach County's Renewable Energy Facility No. 2, for which B&W designed and manufactured boilers, combustion systems and emissions control equipment, began commercial operation in the summer of 2015. The plant processes up to 1 million tons of post-recycled municipal solid waste per year while producing enough power for 44,000 homes, and is estimated to reduce the volume of waste going to landfill by at least 90 percent, extending the lifespan of the owner's existing landfill by several decades.

The plant's greenhouse gas emissions are also highly competitive with other renewable fuel sources. According to U.S. EPA data, waste-to-energy plants like the SWA's REF No. 2 actually emit less net carbon dioxide per megawatt of power generated than fossil fuels, including natural gas. This is partly because these plants avoid combusting higher-carbon fossil fuels to produce power, and also because they recover recyclable metals, reducing reliance on the CO2-intensive process of mining of ore to produce new steel and other metals.

Waste-to-energy plants also help to significantly reduce emissions of another potent greenhouse gas — methane. When waste is landfilled and decomposes, it emits substantial quantities of methane, which studies show has 34 times more heat-trapping potential, pound for pound, than CO2. By combusting municipal waste to make power, the methane problem is abated.

Thanks to advanced scrubbers and other 21st century environmental controls installed on waste power plants, mercury, heavy metals, volatile organic compounds, dioxin, nitrogen oxide and other regulated emissions are controlled at levels well below federal and state-mandated emissions limits.

An often-overlooked benefit of waste power plants is their usefulness in disaster recovery after storms, such as tornadoes and hurricanes. Plant and tree debris, as well as damaged building materials, can be quickly processed and combusted in waste-burning plants, saving communities valuable time and resources when they're needed the most.

Waste-to-energy also supports communities' recycling efforts.

For example, in Palm Beach County's successful curbside recycling program, 85 percent to 90 percent of recyclable metals, such as steel, aluminum and other non-ferrous materials that aren't sorted out by residents and find their way into the waste stream, are captured at the plant itself.

In fact, Palm Beach County's 2015 recycling rate of 72 percent was well above the state average of 54 percent among counties in Florida. Additionally, a study from the Energy Recovery Council shows communities using waste-to-energy have an aggregate recycling rate at least 5 percentage points above the national average.

The Solid Waste Authority of Palm Beach County. Renewable Energy Facility No. 2 is located in West Palm Beach, Florida. The plant processes up to 1 million tons of post-recycled municipal solid waste per year while producing enough power for 44,000 homes. Image courtesy of Babcock & Wilcox.

Recycling and generating power from municipal waste are key elements of what has been dubbed the "Circular Economy." The aim, according to the Ellen MacArthur Foundation, is to move to a more innovative model that seeks to reduce pollution and make better use of resources through conservation, recycling and repurposing of resources, rather than a more short-sighted, linear "take, make, dispose" model. This Circular Economy concept is an underlying principle of the European push to build waste-to-energy plants in countries with limited land and natural resources and restrictions on what trash, if any, can be sent to a landfill.

Waste-to-energy also provides a reliable, base load power solution, which is another advantage over competing forms of renewable energy. Unlike wind and solar generation, which are intermittent electricity sources, waste plants can operate 24-7 and don't need a backup source of power when the sun goes down or the wind stops blowing.

Additionally, the cost to build and operate a waste-to-energy plant is a highly competitive alternative for waste disposal for some communities, when the combined costs of permitting, building, operating and maintaining a landfill for municipal waste disposal are considered. Waste-to-energy plants typically receive a fee to accept waste, much like a landfill operator would. Those fees, as well as proceeds from the sale of electricity produced and the 90 percent or greater reduction in landfill reliance, help offset the cost of building and operating a waste power plant. These factors make the cost of electricity produced by waste-to-energy plants competitive with the most affordable forms of electrical generation.

Waste-to-energy goes a long way toward achieving many public policy goals: increased recycling, reduced landfilling, lower greenhouse gas emissions, cleaner air, improved reliability and greater diversity of electricity supply. Waste-to-energy is worth a very serious look when formulating 21st century energy policies and regulations.

Kimberly Clark is Vice President of Strategic Markets at Babcock & Wilcox.


Waste-to-Energy
FOR A SUSTAINABLE CIRCULAR ECONOMY
Divert Waste from Landfills
TOXINS
Destroy Toxins
GHG
Reduce Greenhouse Gases
Recover Metals
Heat, Cool and Power
Babcock & Wilcox is proud to have supplied equipment for the Palm Beach County Renewable Energy Facility No. 2, the first greenfield waste-to-energy (WTE) facility to come online in North America in 20 years. This advanced WTE plant is the cleanest, most efficient plant of its kind in the world today.
With more than 80 years of experience in renewable energy, B&W waste-to-energy technologies and turnkey solutions are cost-effective and proven.
Let's get started. Contact us at: babcock.com/WTE
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U.S. hydropower: Room to grow in renewable energy production and water storage

By Rep. Dan Newhouse

For millennia, humankind has harnessed the power of water. The ancient Romans developed the earliest water wheels to grind grain into flour. In modern times, hydropower emerged as an affordable, clean, and reliable source of renewable energy. Advancing the development of hydroelectricity generation as well as increasing water storage capacity should be a national priority in the interest of American energy independence and drought mitigation.

Hydropower allows my home state of Washington to enjoy status as a clean energy producer. Located on the Columbia River in my congressional district in Central Washington, the Grand Coulee Dam is the largest hydroelectric power producer in the U.S. and the sixth largest in the world. The dam has a total rated capacity of 6,809 megawatts, enough to power 2.3 million households.

Nearly 7 percent of Washington's energy is derived from hydropower sources like Grand Coulee, and the state is the country's largest producer of this critical renewable energy source. The U.S. Energy Information Administration (EIA) calculates that the entire Columbia River Basin generates 40 percent of total U.S. hydroelectric capacity. According to the Department of Energy, 80 percent of the state's renewable energy production, about 656,000 billion BTUs, is derived from hydropower.

Washingtonians also happen to pay some of the lowest energy costs. For energy used by the residential, commercial, industrial and transportation sectors, Washingtonians pay only 8 cents per kilowatt hour, according to the EIA. This is less than all but four other states and well below the national average of 10.15 cents per kilowatt hour.

For families and small businesses in Washington, lower energy bills translate to real savings that help fuel the state's growing economy and increasing population.

There is much room to grow to develop American hydropower. In 2012, the Department of Energy (DOE) found that adding power generation capability to the existing non-powered dams would add as much as 12 gigawatts of new energy capacity. A 2014 DOE report called the "Hydropower Vision Framework" found that U.S. hydropower production could increase more than 50 percent in combined electricity generation and storage capacity by 2050 while focusing on new technologies and environmental sustainability.

I am working with my colleagues, Rep. Doug Lamborn, Colorado Republican, and Cathy McMorris Rodgers, Washington Republican, on H.R. 1967, the Bureau of Reclamation Pumped Storage Hydropower Development Act, to simplify the permitting process for non-federal hydropower projects.

Currently, these projects are subject to review by both the Federal Energy Regulatory Commission and the Bureau of Reclamation. This legislation would promote development by ensuring that a single agency oversees applications in order to reduce duplication and confusion.

The benefits of water infrastructure projects go beyond energy to include flood control, navigation, recreation, irrigation and water storage.

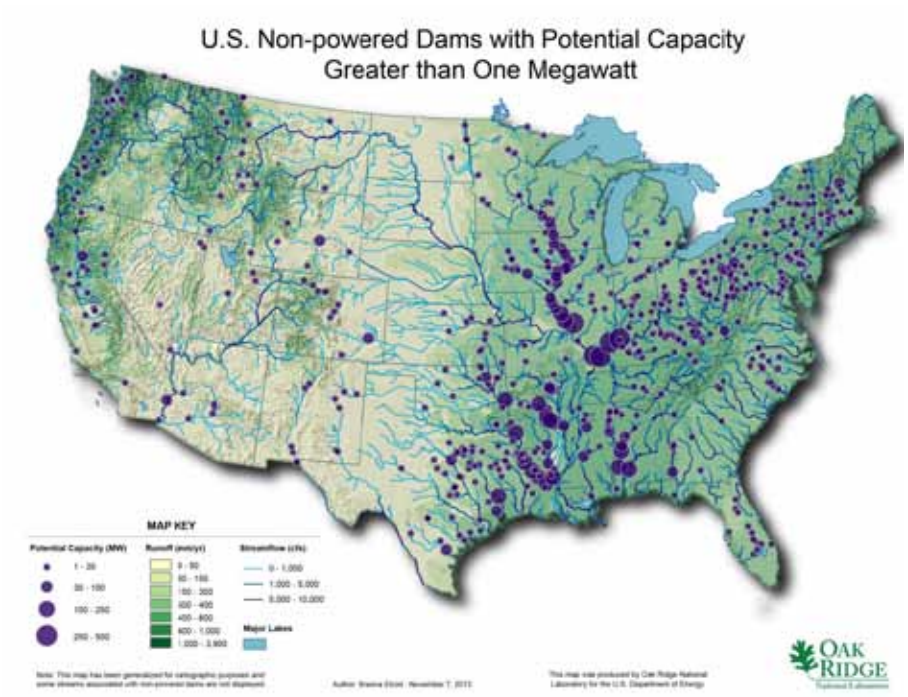
In dry states in the West, the combined benefits are incalculable. As a third-generation farmer whose family's livelihood has depended on access to water through irrigation, I understand the importance of robust water infrastructure.

I plan to introduce legislation in Congress to authorize a key phase of the Yakima River Basin Integrated Water Resource Management Plan. The Yakima Basin plan is a model for the nation, in terms of collaboration between residential, agricultural, conservationist and tribal stakeholders — groups that don't always share common goals. My hope is that the Yakima Basin project will serve as a national example of collaborative water infrastructure development.

There is a catch to water-storage infrastructure development, however: It can take years of planning and environmental reviews for new projects to gain approval. Permitting delays and red tape can drag on interminably. That is why I have introduced H.R. 875, Bureau of Reclamation Water Project Streamlining Act of 2017, to expedite the pace of the Bureau of Reclamation's environmental planning and study process for new water projects.

There is room to grow in developing one of the oldest and cleanest domestic natural sources of renewable energy, as well as to store it for agricultural and other critical uses. As a new member of the House Appropriations Committee's Energy and Water Subcommittee, which has jurisdiction over the U.S. Army Corps of Engineers and Bureau of Reclamation, I am committed to advocating for hydropower as one of the most affordable — and underutilized — sources of energy that our country is capable of expanding in order to provide more clean, renewable power.

Republican Rep. Dan Newhouse represents Washington's 4th Congressional District.



In recent years, the Oak Ridge National Laboratory has examined the location and potential capacity of U.S. dams that currently do not provide electricity. It found 100 top candidates — many on the Ohio, Mississippi, Alabama and Arkansas Rivers — that could be converted to power-generating facilities, often without impacting critical habitats, parks or wilderness areas. Source: National Hydropower Asset Assessment Program, Oak Ridge National Laboratory, on behalf of the U.S. Department of Energy Water Power Program.

On June 30, 2011, Grand Coulee Dam operators released over 200,000 cfs (cubic feet per second) downstream during an unusually large and late spring runoff. The spillway is carrying 33,800 cfs, while 167,000 cfs run through the hydropower generators. Image courtesy of Bureau of Reclamation, Department of the Interior.

Look to the U.S. West to see 'all-of-the-above' energy production

By Rep. Paul A. Gosar, D.D.S.

One of the most commonly discussed themes I've heard during my time in Congress is the idea of an "all-of-the-above" energy strategy. This term is tossed around by Republicans and Democrats alike more than a baseball at a Diamondbacks game.

I suspect the reason why this continues to be such a frequent topic is because it polls well and a majority of Americans support such an approach. Yet, most people don't know what a true "all-of-the-above" energy strategy actually entails.

Throughout his eight years in office, President Obama claimed to support an "all-of-the-above approach to American energy," but this farce couldn't be further from the truth. The Obama administration weaponized federal agencies in order to unilaterally enact countless rules and regulations that aimed to prevent American energy production. For example, President Obama's Department of the Interior Secretary Ken Salazar's first formal action was to cancel 77 oil and gas leases in the state of Utah.

Western Energy Alliance reported that from 2008 to 2016, "every major indicator of oil and natural gas activity on federal lands [was] down." On President Obama's watch, the number of federal permits approved, acres leased and wells drilled all declined. The House Committee on Natural Resources reported in 2013 that it took the Obama administration "on average 30 percent longer, compared to the previous four years, to approve new drilling permits."

The average time in 2005 under the Bush administration to approve permits to drill was 154 days compared to 307 days on average in 2011 for the Obama administration.

President Obama continuously tried to take credit for increasing private-sector energy production on state lands, but conveniently omitted the fact that his own administration was stifling production on federal lands.

One of the Obama administration's final anti-energy acts was to propose a massive, 234,000-acre mineral withdrawal in the state of Minnesota. One company that has already invested hundreds of millions of dollars for development in the area said this misguided proposal "will have a devastating impact on the region's economy, eliminating the promise of thousands of good-paying jobs and billions of dollars in local investment."

Today, there is no region better suited to define an actual "all-of-the-above" energy strategy than the West.

As the chairman of the Congressional Western Caucus, I'd like to paint a picture of what it would look like if our country embraced all of our energy sources.

My home state of Arizona is consistently ranked as one of the top solar states in the country. However, too many federal regulatory hurdles prevent solar companies from taking full advantage of this abundant source. To address these issues, Rep. Jared Polis, Colorado Democrat, and I introduced the Public Lands Renewable Energy Development Act. This bipartisan legislation streamlines the permitting process for wind, solar and geothermal energy projects on public lands, does not require federal subsidies, and creates a revenue source to assist local governments in their efforts to deliver critical services.

In Alaska, responsible oil exploration and production, in areas like the Outer Continental Shelf, supports nearly one-third of all Alaska jobs by creating a total of 110,000 jobs throughout the state. Despite the vast support from Alaska's residents in favor of the critical role that oil and natural gas play in improving the quality of their lives, President Obama cancelled Arctic offshore lease sales through 2022.

A true "all-of-the-above" energy plan would make best use of the estimated 27 billion barrels of oil and 132 trillion cubic feet of natural gas in the U.S. Arctic, and do so in an environmentally responsible way.

The Obama administration opposed natural gas exports for its first six years. While they came around a bit in late 2014, some liquefied natural gas (LNG) projects still took four years to get a permit — and others never received a decision. Energy Secretary Rick Perry recently approved the Golden Pass LNG export terminal in Texas, a project estimated to create 45,000 new jobs in the next five years alone. An administration that embraces this resource will act on the nearly two dozen pending applications.

Federal agencies under the Obama administration took action to restrict the use of hydropower in order to appease extremist environmentalists that want to repopulate a fish that few people want. Members of the Western Caucus have continued to pursue opportunities to expand use of this clean, non-emitting energy source that reduces carbon emissions.

The Obama administration did everything in its power to impose wildly out-of-touch mandates in order to appease the "keep-it-in-the-ground" movement.

The Western Caucus looks forward to working with the Trump administration to implement a true "all-of-the-above" American energy approach that embraces all American energy sources. Pursuing this strategy will create hundreds of thousands of jobs, reduce our dependence on energy production from volatile foreign nations and foster significant economic growth.

Republican Rep. Paul A. Gosar, D.D.S., represents Arizona's 4th Congressional District. He serves on the House Natural Resources Committee, where he is chairman of the subcommittee on energy and minerals. He is also chairman of the Congressional Western Caucus.

States' role in the Trump-era energy revolution

By Bette Grande

Throughout the first 100 days of the Trump administration, policymakers in energy-producing states have seen many positive improvements emerging out of Washington, D.C. For example, the onerous Waters of the United States rule, Stream Protection Rule and the Clean Power Plan are all going away.

The Trump administration in many of its new executive orders has emphasized energy independence — an important, jobs-focused policy position that is well received in fly-over country.

Reining in 'agenda' policies

As the massive federal overreach imposed by the previous administration is rolled back, state policymakers, regulators and the energy industry must work together to balance prudent resource development with the task of protecting the environment.

Each state must deal with its own unique issues and impose policies that weigh the true costs and benefits of energy and environmental regulatory schemes.

The cost of dealing with the unending regulations implemented by the Environmental Protection Agency (EPA) and other agencies are paid by consumers through higher energy costs; by taxpayers, who ultimately subsidize environmental activists; and by companies and employees.

Each month, the director of mineral resources in North Dakota, Lynn Helms, releases his "Director's Cut" report, which summarizes oil-and-gas-related activity. About two-thirds of the report is devoted to actions by federal agencies that impact my state and its energy sector. These regulations are a drag on North Dakota's economy, and they offer few, if any, environmental benefits.

And North Dakota isn't alone. States across the country have been dealing with the same problem for years, but now, the tides appear to have changed.

President Donald Trump is taking strong action to rein in agenda-driven environmental policies that are based on fake science, and that is a welcome and much-needed development. America is finally stepping in the right direction: toward energy and job security, unraveling red tape and unnecessary regulations, and strengthening the power grid.

But despite these dramatic improvements, many more problems need immediate attention.

We'll always have Paris

A significant concern for state policymakers and the energy industry is the threat of lawsuits brought by environmental activist groups.

These well-funded groups know how to use the nation's judicial system to get what they want. Many of them have openly declared war on the energy industry and denounced the actions taken by the Trump administration to lower energy prices and spur economic growth.

Many environmental groups have already begun to challenge some of Trump's improvements in court. This puts policymakers in a bind as they work to develop and implement state-based energy and environmental policies, with the concern being the regulatory rollback will be stuck indefinitely in the slow-moving legal system. Specifically, EPA's CO2 Endangerment Finding and the Paris Climate Agreement give environmental extremist groups much of the legal foundation they need to block commonsense regulatory reform at the state level.

Environmentalists are not happy with what is going on at EPA or in the federal government in general, but they remain comforted — at least, for now — by the fact they still have Paris.

A way forward

The federal government is out of control, and it is time to return the nation back to its original, constitutional governing model.

The states have spent the past decade fighting for their sovereignty from the bureaucrats in Washington, D.C. The Trump administration must do its part to restore federalism and states' rights, and Congress must do its job as well, by supporting Trump's vision for energy-producing states and by working to balance the budget and adhering to the Constitution's limitations on federal power.

At the state level, lawmakers must step up and become the nation's leaders in energy and environmental policy and development.

Those of us who live and raise our children in energy-producing states are serious about protecting our environment, but we must do so with a balanced approach that encourages prudent resource development and innovation.

State officials should build on the opportunities presented by the Trump administration and push Congress to enact permanent reforms to limit future administrations that may not be as energy-friendly. They should also continue to educate people in their states about the false promises made by supporters of renewable energy and the junk science behind the failed policies of the past — especially those imposed by the Obama administration.

Today, thanks to leadership changes in Washington, D.C., Americans have the opportunity to advance the country toward prosperity.

Together, we can become a nation with fewer regulatory burdens, a stronger economy, and more secure energy and agricultural industries. Let's seize this chance while we still have it.

Bette Grande (Think@heartland.org) is a research fellow at The Heartland Institute. She represented the 41st District in the North Dakota Legislature from 1996 to 2014.

Keystone XL oil pipeline approved by the State Department

By Ben Wolfgang
THE WASHINGTON TIMES

President Trump signed permits Friday for construction of the Keystone XL oil pipeline that had been blocked by the Obama administration, saying the reversal is part of his efforts "to do things right" for American jobs and energy production.

"It's a great day for American jobs and a historic moment for North America and energy independence," Mr. Trump told reporters in the Oval Office. "Today we begin to make things right and to do things right."

The State Department under Mr. Trump finally approved the Keystone XL oil pipeline, ending a back-and-forth process inside the federal government that lasted nearly a decade.

Secretary of State for Political Affairs Thomas A. Shannon issued the presidential permit Friday morning, representing the Trump administration's formal green-lighting of the Canada-to-Texas pipeline. Secretary of State Rex Tillerson had recused himself from the Keystone review process.

The president said the project should not have been blocked.

"The fact is that this $8 billion investment in American energy was delayed for so long, it demonstrates how our government has too often failed its citizens and companies over the past long period of time," Mr. Trump said. "Today we take one more step in putting the jobs, wages and economic security of American citizens first."

TransCanada, the company that will built the project, praised Mr. Trump for undoing the decision of his predecessor.

"We greatly appreciate President Trump's administration for reviewing and approving this important initiative and we look forward to working with them as we continue to invest in and strengthen North America's energy infrastructure," said TransCanada CEO Russ Girling.

The Obama administration rejected Keystone in late 2015 citing concerns over climate change, even though the State Department's research has found the pipeline won't raise North American greenhouse-gas emissions but will create more than 40,000 jobs. When completed, the pipeline would carry oil from Alberta, Canada, through the U.S. heartland to refineries on the Gulf Coast.

The battle over Keystone now moves to Nebraska, where the pipeline still does not have a legal route through the state. Environmental groups are vowing new legal challenges in Nebraska in a last-ditch effort to stop the project.

Mr. Trump said the pipeline "will have the capacity to deliver more than 800,000 barrels of oil per day to the Gulf Coast refineries. That's some big pipeline. "I think it's a lot safer to have pipelines than to use other forms of transportation for your product."

He hinted at other energy projects to come soon.

"As the Keystone XL Pipeline now moves forward, this is just the first of many energy and infrastructure projects that my administration will approve, and we've already approved a couple of other very, very big ones which we'll be announcing soon, in order to help put Americans back to work, grow our economy and rebuild our nation," the president said.

Mr. Trump was seated behind his desk holding to be what he described as a "permit" for the construction of the Keystone pipeline. Standing around him were Energy Secretary Rick Perry, Secretary of Commerce Wilbur Ross, senior adviser Jared Kushner, Mr. Girling, and representatives from the building trades.

"We're not going to let you down," Mr. Girling told the president.

This news article originally published on Friday, March 24, 2017.

Oil flows into Dakota Access pipeline at long last as project readies for service

By Valerie Richardson
THE WASHINGTON TIMES

After nearly a year filled with protests, delays and political machinations, the Dakota Access pipeline has finally been filled with oil.

"Oil has been placed in the Dakota Access Pipeline under Lake Oahe [in North Dakota]," said Energy Transfer Partners in a status report filed Monday in federal court. "Dakota Access is currently commissioning the full pipeline and is preparing to place the pipeline into service."

The $3.8 billion pipeline is expected deliver oil within a few weeks from the Bakken field in North Dakota to storage and shipping facilities in Patoka, Illinois.

The company beat back several recent legal challenges filed by the Standing Rock Sioux and Cheyenne River Sioux aimed at blocking the flow of oil pending the outcome of a lawsuit, which argues that the project poses a danger to cultural sites and water quality.

Standing Rock chairman Dave Archambault II called the oil flow a "setback, and a frightening one at that," but stressed that it could be stopped at a later date by the court if the tribe's lawsuit prevails.

"While we are disappointed that our pleas to the court and current administration have thus far fallen on deaf ears, we remain committed to fighting the transmission of dirty fossil fuels through our territory and putting a stop to the flow of oil in this pipeline," Mr. Archambault said in a Tuesday statement.

The 1,172-mile, four-state pipeline runs about a half-mile from the Standing Rock reservation near Cannon Ball, North Dakota. More than 99 percent of the pipeline is located on private land.

The White House became involved last year when the Obama administration delayed and then withdrew an easement for a 1,100-foot stretch on federal land under Lake Oahe as thousands of protesters gathered nearby to challenge the project.

President Trump effectively reversed the decision shortly after he took office in January by issuing a memorandum expediting the Dakota Access and Keystone XL pipelines.

The delays cost the pipeline company more than $500 million, according to an AP estimate, and the tribes have sought to intensify the financial damage by urging banks and investors to pull their funding from the project.

Norway's DNB Bank announced Sunday that it had sold its stake in Dakota Access, estimated at $331 million, following Dutch bank ING, which sold its $121 million share of loans funding the pipeline last week, Reuters reported.

"Divestment and shareholder advocacy have been key to our fight against the Dakota Access Pipeline," Mr. Archambault said in a Monday statement. "Hundreds of investors — ranging from institutional investors to cities to individuals — have cut ties with DAPL, but the recent announcements from banks are an especially encouraging sign that our voice is being heard."

The pipeline company has insisted that the state-of-the-art pipeline is safe, while the U.S. Army Corps of Engineers has noted that a 30-year-old natural gas pipeline runs along the same route at Lake Oahe.

This news article originally published on Tuesday, March 28, 2017.

Green groups sue Trump over Keystone pipeline

By Ben Wolfgang
THE WASHINGTON TIMES

Just days after its approval, the Keystone XL oil pipeline already has spawned lawsuits as environmental activists make good on their promise to fight the long-awaited project in court.

The legal challenges, including a federal suit filed Thursday morning, underscore that Keystone still faces an uncertain future despite having gotten the final go-ahead from the Trump administration last week.

The litigation war began earlier this week with a lawsuit from the Indigenous Environmental Network — which also has promised to organize protests and set up camps along the pipeline's proposed route — and the North Coast Rivers Alliance. The suit claims that the Trump administration failed to look at alternatives to the pipeline, didn't adequately explain why the project is necessary, failed to examine all environmental impacts and made other errors in its expedited approval process.

"President Trump is breaking established environmental laws and treaties in his efforts to force through the Keystone XL pipeline, [which] would bring carbon-intensive, toxic and corrosive crude oil from the Canadian tar sands, but we are filing suit to fight back," said Tom Goldtooth, executive director of the Indigenous Environmental Network.

The North Coast Rivers Alliance joined the suit and claimed that Keystone, and the oil it will transport, poses an "unacceptable risk" to the Missouri River and its fisheries.

On Thursday morning the Sierra Club, Natural Resources Defense Council, Center for Biological Diversity and other green groups filed their own lawsuit in federal court in Montana.

In their court filings, the activists argued that the State Department used outdated information in assessing Keystone and failed to truly study the pipeline's potential impacts on the environment.

"The Keystone XL pipeline is nothing more than a dirty and dangerous proposal [whose] time has passed. It was rightfully rejected by the court of public opinion and President Obama, and now it will be rejected in the court system," said Michael Brune, executive director of the Sierra Club. "It has never been a question of whether a pipeline will spill, but rather a question of when, and Keystone XL is no different. This tar sands pipeline poses a direct threat to our climate, our clean water, wildlife and thousands of landowners and communities along the route of this dirty and dangerous project, and it must and will be stopped."

Keystone likely has been the most studied pipeline in American history. There have been numerous studies at both the state and federal levels.

During the Obama administration, a State Department review found the project would not significantly increase North American greenhouse gas emissions. Still, Mr. Obama blocked the pipeline and argued that the U.S. could not lead the world on climate change if it continued promoting the use of fossil fuels.

Business, energy and labor groups praised Mr. Trump's reversal of his predecessor's decision, and said Keystone is the most environmentally safe way to transport the fuel.

"By reducing the amount of crude oil currently traveling through our towns and upon our waterways by train, truck and barge, pipelines minimize the potential impacts to our air and water quality," said James T. Callahan, general president of the International Union of Operating Engineers.

In addition to lawsuits, Keystone also faces other hurdles. The pipeline has no legal route through Nebraska, and state regulators say a decision on the project's proposed path through the state shouldn't be expected until September or possibly later.

This news story originally published on Thursday, March 30, 2017.

Keystone moves on, slowly

By The Washington Times Editorial Department

Let the building begin. Well, almost.

The Keystone pipeline is inching slowly forward. After more than a decade of back-and-forth bickering between Republicans and Democrats, between business interests and radical environmentalists, the State Department of the Trump administration has finally given its permission, as required by law, to let the oil flow. TransCanada, the company that is building Keystone, praises the new president for clearing the stones, stumps and twigs remaining in the way.

And soon, let the jobs explosion begin. The estimated number of jobs to be generated by this pipeline, which runs from the Canadian province of Alberta through several states to refineries on the Gulf Coast, is more than 40,000. That's enough to buy a lot of groceries.

There's still one small kink to straighten. Nebraska still must put its signature on the deal. Keystone opponents have discovered a little-known agency, the Nebraska Public Service Commission, that must approve. The opponents are now seeking required permission to file legal briefs and formally cross-examine prospective plaintiffs. Nebraska law requires these prospective plaintiffs to prove "substantial legal interest" in any matter in which they wish to intervene.

There's a scurry now to find someone with whom to sue. Certain Indian tribes are expected to tell the Nebraska agency that the pipeline will destroy their heritage by crossing the Ponca Trail of Tears. Environmentalists are expected to argue that the pipeline will damage water sources.

But these are twelfth-hour arguments. The biggest hurdle in the way of Keystone was Barack Obama, and he's gone. The rest of the process, resisted as it is by the left and the farther left, can continue. The ghosts of Indians lingering on the Ponca Trail of Tears, like the splashing of the source of water along the trail of the lonesome pipeline, have been heard before. Lawyers have a talent for making work for other lawyers, but lawyers for TransCanada should be able to make quick and judicious work of the twelfth-hour appeals.

This Washington Times editorial originally published on Sunday, March 26, 2017.

Clean energy powers U.S. economic growth, jobs and lower prices

By Lisa Jacobson

The nation's energy sector is in the midst of a remarkable transformation, providing consumers with far more choices in the way they buy and consume energy.

The energy supply is becoming cleaner — greenhouse gases emissions sank to a 25-year low in 2016 — and cheaper: The amount American households spent on energy reached the lowest levels recorded since the federal government started tracking such data, less than 4 percent of their total annual household spending on energy.

Far from "alternative," sustainable energy is now the new normal across the United States, thanks to a combination of market innovations, growing competition and smart public policies. These sectors — energy efficiency, natural gas and renewable energy — are supporting more than 3 million jobs across the country.

The Sustainable Energy in America Factbook, produced by the Business Council for Sustainable Energy in partnership with Bloomberg New Energy Finance, is one of the more recent reports that fuels our optimism.

The Factbook tells a compelling story: Low- and zero-carbon energy is thriving, with energy efficiency, natural gas and renewable energy overwhelmingly dominating new growth in the electricity sector in the past decade.

It tells us that the United States is about halfway to the 2025 carbon reduction goals set as part of our nation's commitment under the historic Paris Agreement on Climate Change.

The Factbook points to renewable energy as a key reason for the transition to this lower carbon economy. The cost of renewable energy technologies have fallen dramatically, often making them competitive with more traditional fossil fuels. Total renewable generation, led by wind and solar, increased 12 percent in 2016, with non-hydro renewables tripling in the last 10 years.

The Sustainable Energy in America Factbook tells a compelling story: Low- and zero-carbon energy is thriving, with energy efficiency, natural gas and renewable energy overwhelmingly dominating new growth in the electricity sector in the past decade.

Also in 2016, hydropower provided 80 gigawatts of renewable capacity (excluding pumped storage), and biogas, biomass, geothermal and waste-to-energy represent 18 gigawatts of U.S. capacity.

Another milestone was the record investments spent on energy efficiency programs and products.

Electric and natural gas utilities are spending billions on energy efficiency programs. Local benchmarking and disclosure policies for energy use in buildings now cover 8 percent of commercial floor space. Overall, economic growth is outpacing energy demand, with our nation's economy growing 12 percent since 2007, while energy consumption has fallen by 3.6 percent.

The abundance of natural gas resources in America is integral to our clean energy economy. Since 2011, the United States has seen a 12 percent jump in total natural gas production and a 79 percent surge in shale gas extraction. The result? Natural gas is now the No. 1 source of power in the U.S., contributing 34 percent to the electricity mix in 2016.

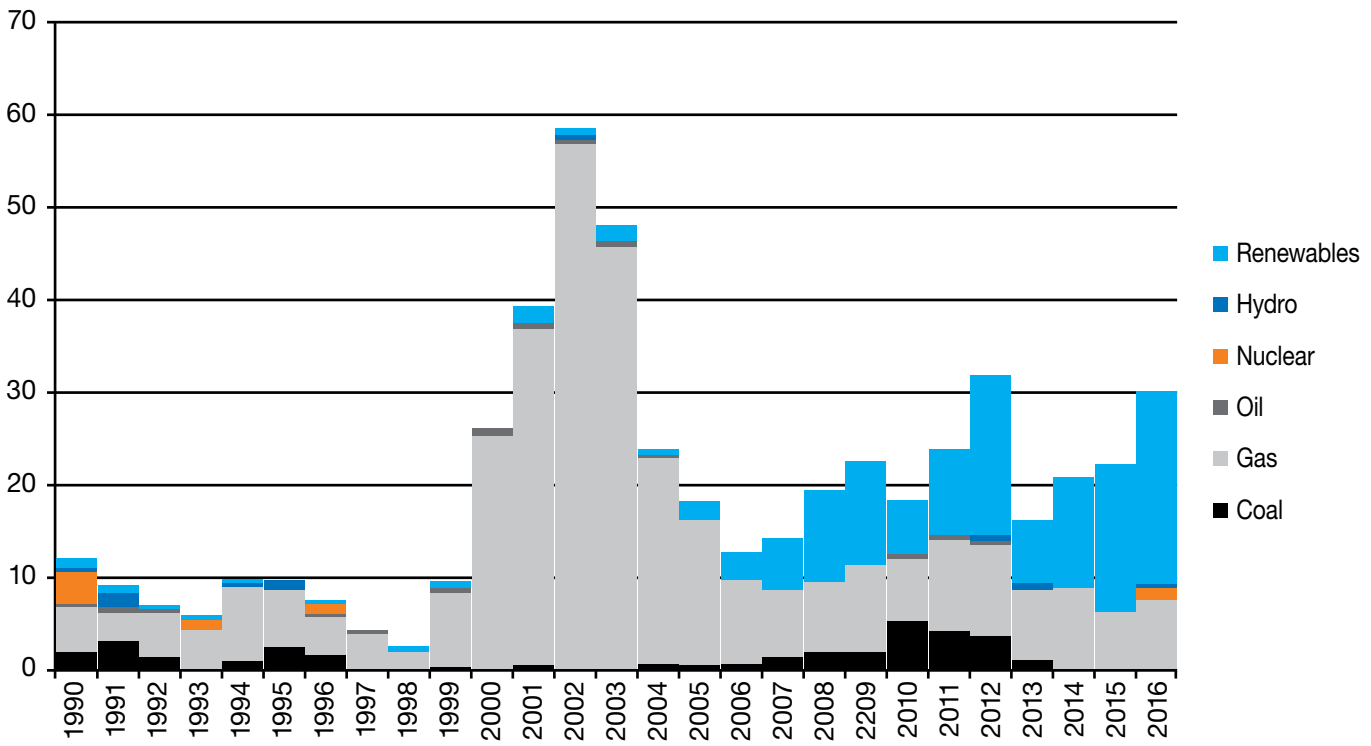
Over the past 25 years, 92 percent of new electricity capacity built in the United States has been powered by natural gas or renewable energy. This fact, combined with the decoupling of energy use from the productivity of our national economy, confirms that we are witnessing trends that are structural.

Major U.S. corporations are paying attention to these trends too, contracting for 2.5 GW of renewable energy capacity, largely wind and solar, by year-end 2016. Private companies are also making investments in energy management systems, such as ISO 50001, and joining voluntary programs that reward improvements in building efficiency and greater energy productivity.

The contributions of sustainable energy to the country's economic competitiveness are direct, dramatic and dynamic. The trend lines are clear: Energy efficiency, natural gas and renewable energy are benefitting American consumers, American businesses and American manufacturers. America "wins" with more clean energy.

Lisa Jacobson is the President of the Business Council for Sustainable Energy (BCSE), which is celebrating its 25th year of advocating for policies that advance the deployment and use of American clean energy technologies. To learn more, visit www.bcse.org to download the 2017 Factbook, and follow the BCSE on Twitter @BCSECleanEnergy.

U.S. Electric Generating Capacity Build by Fuel Type (GW)



In the past five years, renewable energy projects, including hydro, have made up 62 percent of new capacity additions in the U.S.

Source: 2017 Sustainable Energy in America Factbook, Bloomberg New Energy Finance and the Business Council for Sustainable Energy, February 2017.

It's time to rethink ethanol mandates

By Jerry Jung

This year the Environmental Protection Agency (EPA) has mandated that 15 billion gallons of ethanol be added to gasoline. As a result, most gasoline contains about 10 percent ethanol.

Initially, automotive manufacturers saw the mandate as a cheap way to increase octane ratings, and corn growers thought it would be a boon to the agricultural economy. Casual observers and even some conservation organizations thought that it was a renewable source of energy that would help the environment and reduce harmful emissions. Others saw it as a way to reduce dependence on foreign oil.

After eight years of dramatically increasing mandates, the results are in and it is apparent that none of these goals have been met — in fact, the opposite is true.

Due to an arcane and fraud-prone ethanol credit trading scheme, the price of higher-octane gasoline has skyrocketed, relative to lower grades; the farm economy continues its decline; finite resources such as phosphorus and subterranean aquifers are being depleted; wildlife and biodiversity are being threatened; harmful emissions have doubled; and the mandate has had no impact on reducing use of fossil fuels.

How can this be?

The answer is simple — it takes as much fossil fuel to produce ethanol from corn as it yields.

A Cornell University study estimates that it takes 40 percent more energy to produce corn ethanol than it yields. The actual distillation of corn into ethanol consumes about 28 percent as much energy as it produces; yet when all the inputs required to grow corn — such as the production of herbicides, insecticides, fertilizer and the fuel for tractors and transportation — are factored in, the equation changes. Even the U.S. Department of Agriculture, a misguided proponent of ethanol production, estimates that the energy output only slightly exceeds the inputs. The agency points out that by-products from the distillation process can be fed to livestock, but studies such as one published by the University of Nebraska point out that the practice of feeding distillates to cattle shortens the shelf life of their meat. Other studies indicate that the practice alters the flavor of meat and can make livestock sick.

The price of corn shot up to $8 per bushel when the mandate was dramatically ramped up nine years ago. As a result, there were food riots in some countries where corn is a dietary staple.

Since then, the amount of acreage devoted to growing corn has increased to over 35 million acres in the U.S. (larger than most states) and the price is back where it started.

Ethanol is a low-value commodity. A bushel of corn will produce 2.8 gallons of ethanol worth about $4.50. The same corn, fed to poultry, produces about $20 of value, and to cattle, about $50 of value. It is this value-added chain that creates rural employment and economic diversity.

Unfortunately, much of this land is ecologically sensitive. The National Wildlife Federation estimates that 10 million acres in the U.S. have been converted from Conservation Reserve Programs — virgin prairie, woodlands and wetlands in the U.S. — to grow corn over the last 10 years.

The careful reader might question how 35 million acres are growing corn for ethanol, but "only" 10 million new acres have been converted to agricultural use in the U.S. Much of this acreage used to grow soybeans for export. Typically, farmers would rotate between corn and soybeans, but now many grow corn year after year.

South America has filled the void, with the result that Brazil now exports more soybeans than the U.S. — with the concomitant destruction of forest and grasslands in that country, not to mention an increased trade deficit here in this country.

A recent study discussed by a Conservative Political Action Committee panel in February concludes that the farm economy continues its decline despite — and perhaps because of — ethanol mandates.

Ethanol is a low-value commodity. A bushel of corn will produce 2.8 gallons of ethanol worth about $4.50. The same corn, fed to poultry, produces about $20 of value, and to cattle, about $50 of value. It is this value-added chain that creates rural employment and economic diversity.

It is not uncommon to see hand-painted signs in Iowa that read "Family Farms, not Factory Farms." A poll conducted by a leading conservation organization shows surprising opposition to ethanol mandates in rural areas. It is no wonder, since these are the populations most affected in terms of water quality and outdoor recreational opportunities. These are the families that must confront chemical pollution and that are at a competitive disadvantage against huge absentee landowners, when it comes to low-value commodity products. Look no further than the City of Des Moines water authority's lawsuit against upstream agricultural districts. Look no further than the City of Toledo that shut down water supplies to hundreds of thousands of residents because of nutrient-fed toxic algae. Look no further than the just-released U.S. Geological Survey study that confirmed deadly "neo-nic" insecticides in Iowa drinking water. Perhaps it is no accident that Texas Sen. Ted Cruz, who has never supported ethanol mandates or costly agricultural subsidies, won the Republican primary in Iowa.

There are many other reasons to discontinue ethanol mandates. Dozens of diverse stakeholder groups, representing fiscal conservatives; small and marine engine users and manufacturers; food producers and food justice groups; charter boat captains; The Sierra Club, The National Wildlife Federation and the Audubon Society; and even the American Petroleum Institute are opposed to subsidized and mandated corn ethanol production.

Ironic, is it not, that a mandate sold to Congress and the public as "green" is arguably the biggest polluter of air and water in the U.S.? The policy has also been a significant driver of what has aptly been termed the Sixth Extinction of biodiversity.

Fortunately, legislation has been introduced in the House of Representatives that would cap the ethanol content of gasoline at 10 percent and reduce mandates over time. Urge your members of Congress to support this legislation.

The EPA can also play a vital role as they work with automobile companies implementing improved fuel economy standards.

The first step in this regard would be to eliminate artificial incentives to produce ethanol. Currently, the EPA gives CAFE mileage bonuses to gas guzzlers if they can consume gasoline that is up to 85 percent ethanol. Credits are also given to compensate for the reduced energy content of ethanol as compared to pure gasoline. Given the environmental destruction and excessive use of fossil fuels consumed in the production of ethanol, these credits should realistically be debits. It is imperative that the EPA consider the overall economic and environmental impact of their policies and not focus solely on a single aspect of the overall picture.

Jerry Jung is a retired businessman and conservationist who became concerned when Monarch Butterflies stopped arriving at his hobby farm in central Michigan after migrating from Mexico. The pollinator's population has declined by 95 percent since the ramp-up in ethanol mandates.

RethinkEthanol.com

Military veterans drawn to ethanol industry; reasons ignite debate over energy independence

By Ben Wolfgang
THE WASHINGTON TIMES

Military veterans play an outsized role in the corn ethanol industry, but exactly what drives them to the field has become a bone of contention between ethanol proponents and oil and gas industry leaders.

Veterans make up about 19 percent of the corn ethanol workforce, according to federal Energy Department figures — the largest percentage of veterans in any energy subsector of the U.S. economy.

Veterans also comprise 18 percent of the woody biomass fuel/cellulosic biofuels sector, and many of those employees live and work in the Midwest, where the ethanol and biofuels industries have thrived.

No other part of the broader energy economy comes close to matching the veterans' employment percentages in corn ethanol and cellulosic biofuels.

By comparison, veterans account for about 9.8 percent of the wind industry's workforce and about 11 percent of the solar electrical generation employment rolls.

In addition, veterans make up about 9.8 percent of the natural gas production sector and 9.6 percent of the petroleum production industry, federal figures show. They also account for about 8.8 percent of the coal mining workforce and similar levels of employment in hydropower, nuclear and other corners of the broader energy world.

While percentages don't tell the full story — especially because of huge disparities in the total number of employees in corn ethanol versus oil and gas, for example — ethanol backers say the high percentage of veterans can be attributed to military men and women's recognition of the geopolitical dangers of foreign oil.

"This is an industry that is really about American national security," said retired Army Gen. Wesley Clark, a former Democratic presidential candidate who now sits on the board of Growth Energy, a trade group that represents supporters and producers of ethanol.

"Any of the veterans who fought in the Gulf War or the fight against terrorism understand that, at the bottom, this has been about the West's thirst for oil," Mr. Clark said when asked specifically why he believes veterans are attracted to the ethanol industry.

Other ethanol champions make similar arguments and say veterans consider their industry to be the best hope of fully freeing the U.S. from foreign oil and achieving true domestic energy independence.

But oil and gas proponents see the situation differently, and some take issue with Mr. Clark's argument.

Ethanol critics point out that while the percentage of veterans in the industry is impressive, it's also misleading. Corn ethanol employs about 28,613 people nationwide, the Energy Department said, meaning just over 5,500 veterans have found work in the sector.

The petroleum fuel industry, by contrast, employs more than a half-million people. Of those, about 9.6 percent — or more than 50,000 workers — are veterans, according to federal figures.

As of the end of 2014, at least 185,000 veterans were employed across the entire oil, gas and petrochemical industry, according to Vets4Energy, a veterans group sponsored and funded by the American Petroleum Institute.

"When you break that down the gas, oil, and petrochemical industry does a pretty good job employing veterans, too," said retired Army Capt. James McCormick, now the national program director at Vets4Energy.

Mr. McCormick disputed the idea that ethanol is somehow more attractive to veterans from a national security perspective. He argues that huge upticks in domestic natural gas and oil production have put those industries on equal footing when it comes to promoting energy independence.

"General Clark does not represent me, and he does not represent the majority of veterans," said Mr. McCormick, adding that many ethanol proponents, such as Mr. Clark, are eager to shut down the entire oil and gas sector.

Mr. Clark acknowledged the mostly adversarial relationship between the two sides, even beyond the issue of veteran employment.

"You're dealing with ethanol as a potential adversary, or competitor, to the most powerful economic force on the planet, which is the petroleum industry. There's never been anything like it," the retired general said.

Whatever drives veterans to a particular energy subsector, they have become a major asset to their employers, said Mark Borer, a senior vice president and general manager at POET, a South Dakota-based ethanol producer.

"When we think about the skill sets the veterans gain — leadership skills, sense of responsibility, values, a drive to make a difference in the world — those align very well with POET," said Mr. Borer, who served in the Navy for six years.

This news article originally published on Monday, April 17, 2017.

For first time, U.S. gasoline averaged more than 10% ethanol last year: Report

By Ben Wolfgang
THE WASHINGTON TIMES

In what industry leaders heralded as proof that the "blend wall" is nothing more than a myth, a new study released Wednesday shows that U.S. gasoline contained more than 10 percent ethanol on average for the first time last year.

The report, released by the Renewable Fuels Association (RFA) and citing recent data from the federal Energy Information Administration, says that the average ethanol content in gasoline last year was 10.04 percent — the first time it's topped the 10-percent mark, which ethanol critics have maintained was the limit for safe operation for the country's fuel infrastructure and for many automobiles.

The news comes amid uncertainty for the ethanol industry under President Trump. While the president was highly supportive of ethanol and the Renewable Fuel Standard — the 2007 legislation that mandated ethanol be mixed into the nation's gas supply at increased levels each year — other administration officials, such as EPA Administrator Scott Pruitt, have been much more skeptical.

There's also an increased effort from oil-and-gas industry leaders, who clearly have the ear of the White House and the EPA, to stop the growth of the ethanol industry and halt increased blending into gas supplies.

For now, however, the ethanol sector says Wednesday's report is proof that going beyond 10 percent ethanol in gasoline isn't the major issue some have made it out to be.

"EIA's data once again shows that the oil industry's blend wall narrative is bankrupt, intended only to mislead consumers and undermine support for the Renewable Fuel Standard," said Bob Dinneen, president and CEO of RFA, the ethanol industry's leading trade group. "The facts provide a different narrative. Ethanol is the lowest cost and cleanest burning source of octane today. Driven by the RFS and attractive blending economics, domestic refiners and blenders used more ethanol in 2016 than ever before and it's likely that trend will continue this year."

According to the government figures, total U.S. gas consumption was about 143.367 billion gallons last year, and that fuel contained just under 14.4 billion gallons of ethanol. That made the average content in a gallon of gasoline about 10.04 percent.

The trend accelerated in the latter part of the year and continued into 2017.

The RFA said that national average ethanol content was at 10 percent or higher in six of the last seven months of 2016. In December, it hit a record high of 10.30 percent.

That number was even higher in early 2017, hitting 10.41 percent in early January, the RFA said.

But the oil-and-gas industry is redoubling its efforts to stop even more ethanol from ending up in the nation's fuel supply. Earlier this month, the American Petroleum Institute — the sector's leading trade group and a powerful force in Washington — released a poll that found 68 percent of voters say they're concerned about more ethanol in gasoline, and 74 percent said they believe government ethanol mandates could raise fuel prices.

Ethanol proponents have questioned the study and its findings.

Moving forward, there is legitimate concern that higher ethanol blends, such as the 15-percent blend known as E15, may not be safe for all engines and that eventually ethanol will indeed hit a blend wall.

"Nearly 85 percent of vehicles on the road today were not designed for higher ethanol blends, such as E15," Frank Macchiarola, downstream group director at API, said earlier this month. "Higher ethanol blends threaten engines and fuel systems — potentially forcing drivers to pay for costly repairs, according to industry testing. And the public remains uneasy about that, with three quarters of respondents expressing concern about breaching the blend wall."

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Leading in the new energy reality

By Trent S. Aulbaugh, Steven V. Goodman and Carol SingletonSlade

Cyclical market volatility will continue to be standard in the energy industry. An impending market rebound has many feeling cautiously optimistic, but the extended cycle of the current downturn — now being characterized as "lower for longer" — has revealed a new reality in the energy sector that will change leadership imperatives for the foreseeable future.

Energy leaders are realizing that lower prices, unpredictable market dynamics and

hyper competition for talent, resources and capital are driving a need to rebuild and adapt businesses, or risk being left behind. In this new reality, it's critical to strike a balance between disruption and discipline — understanding how to best lead innovation while still adhering to long-standing best practices that will ensure longevity regardless of future market fluctuations.

These were the leadership imperatives on the agenda at our sixth annual CEO Breakfast Panel at IHS CERAWeek this year, where we had candid discussions about disruption and digital transformation with CEOs and chairpersons from across the energy value chain.

It's time to move past survival mode. Although it would be premature to prepare for a true market rebound, there has been enough momentum that leaders are rightly thinking about growth and innovation. Whether this comes in the form of technology adoption, new business models or refreshing boards to ensure effectiveness, forward-thinking leaders will seize this time of downturn and poise their companies for success as the industry continues to evolve.

This means thinking differently about how to invest incoming capital. Applying lessons from Silicon Valley and the VC community, leaders must invest in organization-wide innovation. The industry is ready to move beyond operational technology, to embrace software, Big Data, machine learning and predictive analytics.

Perhaps most importantly, new innovations mean new talent. Human capital is the linchpin to effectively leveraging innovation. In particular, there is a significant need for new data analytics skillsets within energy companies — leaders must consider how to effectively usher in this new work force to build the right foundation for executing against innovations. While preparing for the future, leaders must also consider how to reflect these work force shifts at the highest levels, including introducing Chief Digital and Strategy Officer roles onto energy C-suites, as well as board members with data analytics skillsets.

Leading innovation. Creating something new and useful is hard — it takes teamwork, it is time consuming and often results in significant culture and workflow shifts within organizations. Leaders must learn to be the stage setters and champions of innovative thinking, trumpeting milestones and encouraging widespread momentum through accountability, empowerment and rewarding successes both big and small.

Energy boards must set the tone. Boards must lead in identifying avenues for innovation, and they can only do so if they are composed of the right experiences, skillsets, genders and nationalities in line with business needs. Directors with digital expertise including data analytics and those with experience in other sectors that have undergone rapid transformation are critically important to the organization's digital strategy. Board effectiveness reviews and succession planning should be evergreen according to the pace and area of change demanded by the industry.

Innovation is only possible if the business is prepared to embrace it. The period of downturn presents an opportunity for organizations to focus on developing the talent they will need to drive future transformation and growth, but leaders must be disciplined when the market picks up and remain proactive about embedding ongoing and sustainable transformation into the organization.

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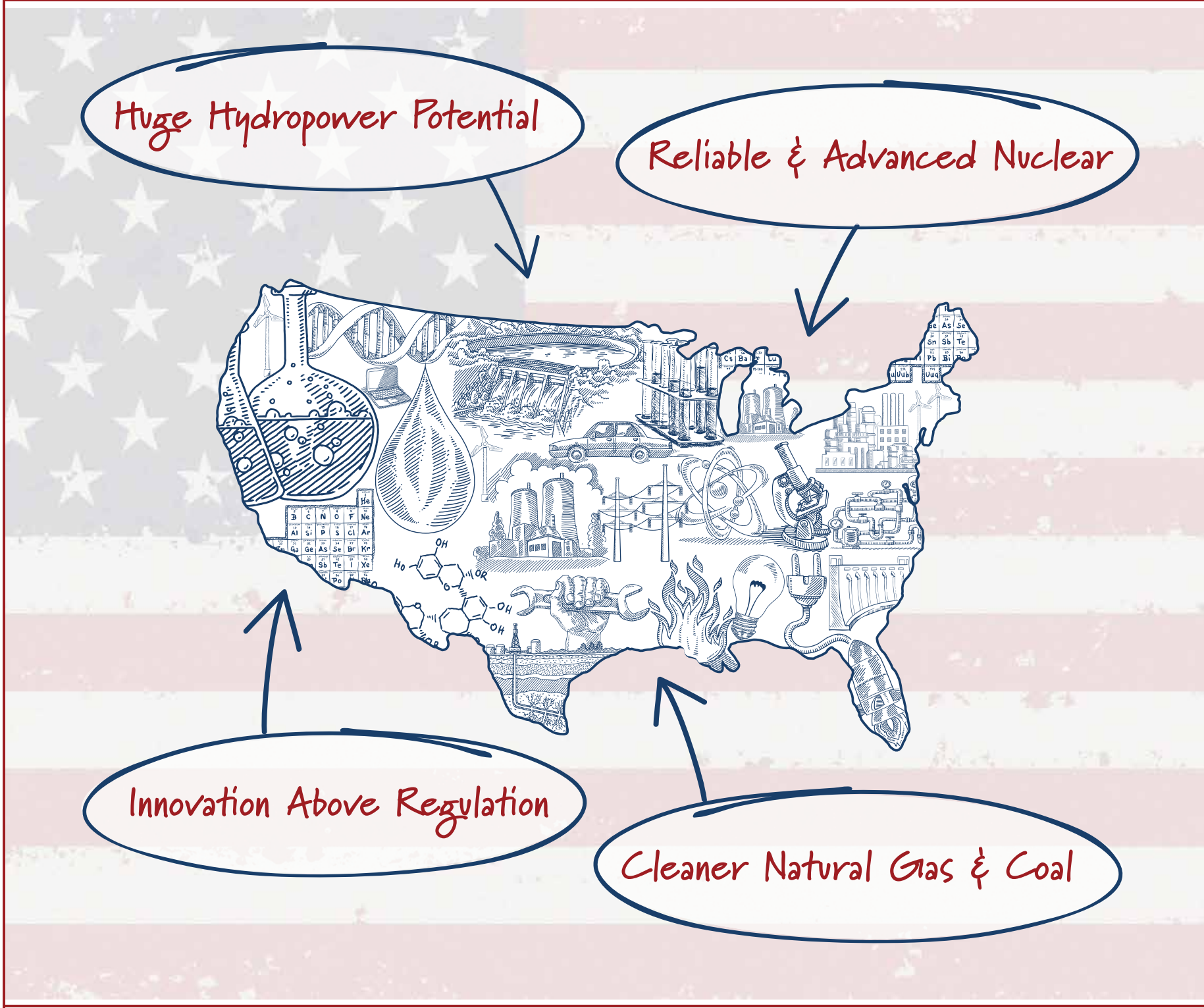

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