

# **The Power To Change the World**

## **Energy Epicenter 2009 and the State of the Natural Gas Industry**

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## Executive Summary

At Energy Epicenter 2009, the Colorado Oil and Gas Association's twenty-first annual conference, members of the natural gas industry met to explore the idea that gas has, in the words of the conference's theme, "The Power to Change the World."

A range of speakers explored the role of natural gas in the context of a new national approach to energy production and consumption that is aimed at promoting secure domestic resources with low-to-no carbon emissions. This New Energy Economy is emerging at a time when technological advances in directional drilling and hydraulic fracturing have enhanced the industry's ability to tap vast, unconventional gas deposits in shale and other geologic formations that had previously been considered unworkable.

To the natural gas industry, along with a range of observers and commentators, the logical sum of these converging trends is a significant increase in the use of natural gas, which is abundant, burns more cleanly than other fossil fuels, and is well suited as a complement to renewable energy. These advocates contend that widespread adoption of gas in the place of coal and oil would indeed change the world by increasing national energy security, bolstering the domestic economy, reducing greenhouse gas emissions, and facilitating the adoption of renewable energy.

Natural gas offers significant benefits aligned with the policy goals of the New Energy Economy. One might expect that many Americans and their legislative representatives would welcome natural gas in formulating the nation's next-generation energy policy. On the contrary, national legislators have shown a conspicuous lack of enthusiasm or welcome – and in fact not much recognition at all – toward the natural gas industry's positioning to play a major role in the nation's energy future. In the days leading up to the COGA conference, the industry found itself facing serious questions and potential federal regulation over the impact of hydraulic fracturing on groundwater. In a different arena, the industry also found itself shut out of major energy legislation crafted in the House of Representatives to provide a template for the nation's new energy policy.

COGA's Energy Epicenter conference convened the natural gas industry at this consequential moment and placed, at the center of their attention, an innovative vision for the industry. Rather than a time of opposition and resistance to the changes in attitude and policy, the intellectually agile contingent promoting this vision sees the advent of the New Energy Economy as the occasion to strengthen the industry through new alliances with the environmental community and those concerned about national energy security. These alliances will allow the industry to play to its strengths as an abundant, domestic, lower-emission fuel that will ease the transition to a renewable energy future.

## **Introduction**

As conference themes go, “The Power to Change the World” qualifies as one of the more ambitious.

But the men and women who assembled under that idealistic banner in Denver this July at Energy Epicenter 2009, the Colorado Oil and Gas Association’s (COGA) twenty-first annual natural gas strategy conference and investment forum, are not head-in-the-clouds types. They are pragmatic businesspeople who make money by providing energy profitably to people who have come to depend upon abundant quantities at affordable rates. They are engaged citizens who are concerned by the clouds gathering on the nation’s energy horizon. And they have every good reason to believe that natural gas has the potential to do nothing less than transform the American energy landscape and play a leading role in creating a cleaner and more humane world.

Several factors have come together in the last few years to buttress this optimism. Technological breakthroughs have expanded the gas supply exponentially by enabling operators to tap unconventional gas deposits that had previously been unworkable. This remarkable growth in supply has come at a serendipitous time, when anxiety about national energy security and global climate change is shifting the United States’ energy policy to favor domestic energy sources with low-to-no carbon emissions.

To many people within and outside of the industry, this convergence amounts to a prescription for natural gas, which is plentiful throughout the US, burns much more cleanly than coal and other fossil fuels, and is well suited to serve as a complement to renewable energy sources. The widespread adoption of natural gas in place of coal and oil has the potential to create new energy industry jobs at home, disentangle the nation from foreign oil suppliers that are too often hostile to American interests, significantly reduce the amount of carbon and other polluting greenhouse gasses we pump into the atmosphere, and facilitate the adoption of renewable energy technologies.

Plentiful resources. Cleaner air. Energy security. A renewable future. This is the vision articulated over three days at the COGA conference in the summer of 2009. This is the model for the future that conference organizers envision for their industry.

Who could be possessed of such power and not aim to change the world?

## **The Ability to Power the World**

The optimism about changing the world espoused by the organizers of the COGA conference derives from the natural gas industry’s newfound capability to power much more of the world than was previously possible. According to a study recently released by the Potential Gas Committee, as of 2008 the United States had estimated natural gas reserves totaling 2074 trillion cubic feet (tcf). That figure is up sharply from the 1532 tcf that the committee estimated only two years earlier, a surge unprecedented in the forty-four years that the committee has been tracking

reserves.<sup>1</sup> Leaders in the industry say there is now enough gas to supply current US demand for a century or more. Similarly dramatic growth trends might be registered in nations throughout the world.

The swelling US numbers reflect the breakthrough successes of the American gas industry in 2007 and '08, when producers finally perfected technological approaches that allowed them to produce gas economically from shale formations. Shale gas is one of several types of natural gas usually described as “unconventional” because they are geologically dissimilar, more technically challenging, and generally more expensive to produce than the types of gas deposits the industry has historically tapped. However, these unconventional plays – including shale gas found in layered shale formations, tight gas located in extremely dense rocks with very little permeability, and coalbed methane recovered from coal seams – are responsible for an increasing share of natural gas production and are the basis of the industry’s bullish projections of future supply.

Although each play is unique, the widespread and increasingly adept use of two key technologies has allowed operators to prosper in these unconventional gas fields. Directional drilling, the process of boring wells that turn diagonally and horizontally underground to maximize their contact with the geologic formation that hosts the gas, has allowed operators to access more gas with fewer wells disturbing the surface of the land. And the use of hydraulic fracturing to free more gas to flow within the host rocks has made these wells more productive.

Hydrofracturing or fracking, as it is commonly called, is a method to stimulate gas production by pumping tens of thousands of gallons of fluids mixed with small granular materials like sand (called a proppant) into the well under pressure high enough to shatter the host rock into a web of tiny channels. When the fluid is withdrawn, the sand remains to prop open the fractured channels, creating pathways through which otherwise-trapped gas can flow to the well. The concept has been around for more than a century, and the method has been used commercially for more than fifty years to enhance production at conventional wells, but only recently has it been successfully adapted to economically unlock tight gas, coalbed methane, and (most recently) shale plays. Today the vast majority of gas wells throughout the nation use fracking to stimulate and enhance production.

In the Rocky Mountain West, where COGA focuses its attention, the ability to tap the region’s gamut of unconventional gas deposits – including tight gas in Colorado’s productive Piceance Basin and Utah’s Unita Basin, coalbed methane in Wyoming’s Powder River Basin and New Mexico’s San Juan Basin, and shale gas in the Barnett Play in Texas and the Williston Basin along the border of Montana and the Dakotas, to name just a few – created a glut of supply that far surpassed the capacity of pipelines to transport the gas to markets in the rest of the nation. Pipeline operators have responded with a building boom in recent years to increase their ability to move gas out of the Rockies. As newly constructed pipelines such as the Rockies Energy Express (REX) and the Ruby come online, along with the expansion of existing lines like the Apex, Bison, Overthrust, and Northwest Pipeline, this growing infrastructure of pipelines will allow more gas to flow out from the Continental Divide, relieving the bottleneck and conveying the abundant gas supplies of the North American Rockies to markets east and west.<sup>2</sup>

## **Natural Gas in the New Energy Economy**

The recent expansive growth of the nation's estimated natural gas reserves comes at a moment when concerns about national security, climate change, and the economy have prompted Americans and our elected officials to rethink how we obtain and use energy. Out of this collective exercise in introspection, a paradigm shift in the nation's energy policy has begun to materialize. Hailed as the New Energy Economy, the outlines of this next-generation policy are emerging through a series of legislative actions at both the state and federal level that seek to minimize the environmental impact of fossil fuels and promote domestic energy sources that produce little or no greenhouse gas pollution.

Many energy operators view some of the state and federal policies associated with the New Energy Economy as burdensome. But an intellectually agile contingent within the natural gas industry sees the advent of the New Energy Economy as a chance to strengthen the industry through new alliances forged by embracing, rather than resisting, key aspects of the emerging regulatory regime. By promoting the advantages of natural gas as more climate-friendly than its fossil fuel counterparts and supportive of emerging renewable energy technologies, these advocates hope to communicate to policymakers and the public their vision that natural gas can be the primary catalyst for the transition to a low-carbon future. Discerning the possibilities and pitfalls for oil and gas in the New Energy Economy was a popular enterprise among those who took the podium at this year's COGA conference.

## **Fracking Regulation**

People in the energy business, like people in most businesses, are wont to grumble about the regulations and rules they must operate under, particularly (and understandably) when those new regulations require them to recalibrate some of the carefully worked-out customs and strategies for doing business. Oil and gas producers maintain that regulations that lengthen the permitting process, restrict access, curb drilling practices, or add large additional costs to operations will stifle the industry and drive operators and jobs to friendlier regulatory fields. The oil and gas executives who gathered at the COGA meeting cited several new or looming regulations, particularly the new Colorado Oil and Gas Commission rules and the possibility that the federal government will soon regulate hydraulic fracturing, in this onerous category.

Especially worrisome in their view is the threat to fracking, the use of which, in Questar CEO Keith Rattie's memorable phrase, is responsible for the "tsunami of supply" coming from unconventional gas plays and thus the foundation of any optimistic vision for the industry's future.<sup>3</sup> Despite the natural gas industry's vigorous defense of fracking as an environmentally benign process that enables operators to tap an environmentally friendly energy resource, the practice has recently drawn increased environmental and legislative scrutiny arising from questions about its impact on groundwater.

More than 90 percent of the fracking fluid is water, but companies also add undisclosed proprietary mixes of chemicals formulated to facilitate the process. Some environmentalists and local residents are concerned that, although the fracking fluid is pumped back out before gas production begins, a small portion of the chemicals from the fluid may be left in the ground and

find their way into drinking water supplies. The industry contends that fracking is already closely regulated by states, which have consistently determined that the practice poses no threat to their residents, and that additional regulation would serve only to erect such onerous regulatory barriers to gas development that the industry would not be able to maintain the pace of drilling needed to sustain a steady gas supply. All sides point to evidence that they believe supports their position.<sup>4</sup>

With constructive dialogue hung up on data disputes, the controversy over fracking is liable to be decided in the political arena. Those who favor greater regulatory oversight have found a champion in Colorado Representative Diana DeGette, who has led an effort in Congress to regulate hydraulic fracturing under the Safe Drinking Water Act.<sup>5</sup> The oil and gas industry has not traditionally lacked for its own legislative champions – as the exemption of fracking from Safe Drinking Water Act regulations included in the 2005 Energy Policy Act demonstrates – but the shifting political terrain of the New Energy Economy has scrambled traditional constituencies and shaken old alliances.

For an innovative group of dynamic thinkers within the natural gas industry, many of whom were prominent at the COGA conference, this recalibration presents an opportunity. As they see it, the best hope to defend fracking may be found in the prospects the New Energy Economy presents to cultivate unconventional constituencies and build novel alliances.

### **A Complementary Opportunity**

A forward-looking cadre within the industry contends that the growing clout of the renewable energy sector should be understood as a strategic advantage for the gas industry rather than a competitive threat. They point out that an increasing number of states are adopting Renewable Portfolio Standards that require utilities to generate a growing portion of their energy portfolio from renewable sources such as wind and solar. As these renewables occupy an increasingly prominent position in the national energy portfolio, their inherent drawbacks become proportionately more apparent and consequential.

Chief among these shortcomings is variability. When the wind dies and the skies cloud over, the ability to generate renewable power from these resources is unavailable. A person can't get blood from a stone or (to propose an update in platitudes) generate electricity from a becalmed turbine or a shaded solar panel. Solutions for better energy storage are in the works, but until someone devises a reliable remedy to smooth out this variability, utility companies will need to pair renewable projects with additional energy sources that can be brought online at a moment's notice to keep the power grid stable.

Natural gas is ideally suited to be this necessary companion for renewable energy. Unlike coal-fired power plants, which take a great deal of time to fire up and produce electricity, certain types of gas-fired power plants can be activated and brought onto the grid quickly. This rapid-response capability makes gas well-suited to give electric utilities the flexibility needed to compensate for sudden drops in renewable generation or to meet spikes in energy demand that exceed a system's renewable generation abilities even on the sunniest and windiest of days.

By embracing the legislative push toward renewable energy and promoting gas as a necessary failsafe supply to insure the nation's electric grid against variability and peaking load spikes, natural gas producers can connect themselves to the most promising sector of the energy industry and assure a steady demand for their expanding gas supply into the foreseeable future. As Lynn Coles of the National Renewable Energy Laboratory pointed out at the COGA conference, this association with renewables promises to ensure the gas industry's continued relevance long past the time when coal and oil find themselves pushed out into the margins of the energy mix.<sup>6</sup>

### **Opportunity in the Air**

In his lunchtime keynote address to the COGA conference, Tim Wirth, former Colorado senator and current president of the United Nations Foundation, told members of the natural gas industry that they had "the most to gain and the most to offer" as the world's governments take action to curb global warming.<sup>7</sup> He was referring to the prospect that carbon regulation, either in the form of a cap and trade system or a carbon tax, will form the core of climate change legislation in the US and throughout the world. This is a prospect that favors the increased use of lower-carbon energy sources until carbon-free renewables are ready to shoulder the load, and natural gas stands out among current energy options as a significantly less carbon-intense fuel than coal and oil.

Natural gas burns much more cleanly than its fossil fuel counterparts, emitting about half as much carbon dioxide as coal and approximately 30 percent less than fuel oil to produce the same amount of energy.<sup>8</sup> The carbon dioxide savings may be even greater, up to 75 percent, when the efficiency of gas-fired power plants versus coal-fired power plants is factored in, according to Peter Tertzakian of ARC Financial Corporation.<sup>9</sup> Next to these flabby fossil fuel counterparts, natural gas's emissions profile looks alluringly fit and trim and ready for the spotlight that carbon regulation will shine on traditional energy resources.

In addition to these advantages in emissions, the infrastructure needed to shift a substantial portion of the nation's electric generation to natural gas already exists. Gas-fired power plants throughout the country stand underutilized and ready for immediate action. According to Keith Rattie, CEO of Questar, of the 1 million megawatts of electricity generation capacity currently installed in America, 40 percent of it has been designed to burn natural gas, but only 25 percent of this gas generation ability is being utilized. Lower-cost coal-fired power plants continue to provide the bulk of the nation's electricity.<sup>10</sup>

The advent of carbon regulation may convert this idle capacity into a tremendous asset for the gas industry. As Michael Ming of the Research Partnership to Secure Energy for America (RPSEA) put it, with its available distribution and generation network, natural gas is the only lower-carbon energy option ready to be adopted on a large scale today. And with its trim emissions profile, gas has the potential to address climate change faster, more substantially, and more economically than any other option currently available.<sup>11</sup>

Electricity generation provides the most immediate opportunity to replace a dirtier fossil fuel source with natural gas, but gas can also provide a cleaner option for transportation fuel than oil. Jim Cannon of Energy Futures, an energy policy research organization, made a case for the

industry to focus on integrating compressed natural gas (CNG) vehicles into the transportation sector. At the moment, less gas infrastructure exists for transportation than for electricity generation, but the widespread displacement of oil with CNG offers benefits worth working toward. Not only would cleaning up tailpipes reduce a major source of greenhouse gas emissions, it would also reduce the nation's reliance on oil imported from governments that are too often hostile to our national interests.<sup>12</sup>

With its cleaner-burning nature and national security advantages, natural gas is poised to be a critical component of effort to reduce greenhouse gas emissions and hold climate change in check. In the memorable phrase of David Fleischaker, CEO of Jolen Operating Company and Oklahoma's former energy secretary, natural gas is "the champagne" of hydrocarbon fuels.<sup>13</sup> And the passage of carbon regulation should be the occasion of a cork-popping celebration within the natural gas industry.

### **Footprints on the Land**

Although natural gas is attractive as a cleaner-burning alternative to coal and oil that has the ability to make an immediate and significant impact in the effort to mitigate climate change, it is still a fossil fuel and therefore does still produce its share of greenhouse gas emissions. This troublesome fact gives zero-emission renewable energy sources the long-term edge as policymakers map out our nation's energy future. However, a variety of speakers at the COGA conference expressed the belief that renewable energy's emissions advantage is offset to a degree when regulators turn their attention from the atmosphere to the ground.

Renewable energy operations may leave no trace in the air once they are built and installed, but they can have a heavy footprint on the landscape, requiring considerable acreage and installing sizeable equipment that will occupy the land permanently. And as increasing numbers of proposed renewable projects – particularly large-scale wind and solar projects and the transmission lines needed to bring their electricity to market – go through the permitting process and are evaluated according to the same environmental impact standards applied to oil and gas projects, many gas producers believe that their operations compare favorably and may even have a competitive advantage in some cases.

Kate Fay, the Colorado Department of Public Health and Environment's Energy Manager, assured those at the conference that, while there is clearly a push for renewables at the federal policy level, the state is not playing favorites in the permitting process and all proposed energy projects are evaluated on a "level playing field" as the state conducts environmental impact studies. This commitment to egalitarian evaluation in Colorado and around the country is evident as renewable projects have begun to come under the same scrutiny from local stakeholders, environmentalists, and permitting agencies that their fossil fuel counterparts are used to receiving.<sup>14</sup>

As a sign of just how quickly views on renewable energy are changing, Andy Spielman of the law firm Hogan and Hartson called attention to the controversy earlier this year over California Senator Diane Feinstein's proposal to prohibit solar panels across a large swath of the Mojave Desert. Spielman suggested that such a controversy would have been unthinkable five years ago,



and the fact that it can happen today speaks both to the success of Renewable Portfolio Standards in advancing the renewable energy industry and the growing split within the conservation community over how to appraise the costs and benefits of renewable projects.<sup>15</sup>

The climate-friendly advantages of renewable energy projects should not be allowed to obscure their consequences for the landscape and ecosystems they impact, explained Tim Sullivan of the Nature Conservancy. The Nature Conservancy works to ensure that the world suffers no net loss of biodiversity due to human activities. By defining biodiversity in terms that can be quantified and measured – a controversial notion within some segments of the environmental community – the organization has created a metric that allows it to calculate exactly which tradeoffs it believes will optimize the balance between energy development and conservation.

Within this framework, natural gas and renewable operations carry different advantages and drawbacks. Gas may not offer the same carbon-free emissions profile presented by renewables, but gas operations that utilize directional drilling and initiate numerous wells from a single well pad often have a smaller footprint on the land than large-scale renewable projects. And gas operations, in which equipment is removed and the site restored once the gas is gone or the lease is up, represent a less permanent surface disturbance than renewable installations. The Nature Conservancy believes that, in order to protect biodiversity, all forms of energy development must be reckoned on the basis of their impact on both the climate and the landscape. If the specter of climate change is allowed to ride roughshod over all other energy policy considerations, Sullivan concluded, it sets up a trap by which “we’re trying to reduce climate change in order to save nature, but we’re going to destroy nature in order to do it. That’s not a good path forward.”<sup>16</sup>

Sharon Buccino, director of the Public Lands Program at the Natural Resources Defense Council, also spoke about the tension within the environmental community as it grapples with the difficult choices raised by renewable energy projects. Environmental organizations, she said, are willing to acknowledge that “in some circumstances the comparative impacts clearly may favor natural gas.” But she cautioned that this measured support should not be interpreted as a license to drill wherever the gas is found.<sup>17</sup>

## **How to Win Friends and Influence Policymakers**

Given the many advantages the natural gas industry has going for it in terms of supply, energy security, and climate friendliness, one might think that many Americans would welcome it with tickertape parades and celebrity-studded tribute concerts on the National Mall. But there have been no parades, no concerts, and in fact not much recognition at all among the public or policymakers of the natural gas industry’s ability to play a major role in the nation’s energy future.

The technological breakthroughs that have brought so much unconventional gas into the energy mix over the past decade have generally gone unnoticed by consumers and lawmakers. Many of those who have heard the news are skeptical and twice-shy, recalling a history of widely heralded potential bonanzas that didn’t pan out, such as the deepwater Gulf of Mexico plays in

the 1990s, and extreme price volatility, including a spike that abruptly doubled prices in summer 2008, that makes people wary of relying too heavily on natural gas.

Possessing the resource is only half the solution. The mission now is to find or create outlets for the new supply, explained David Trice, the chairman of Newfield Exploration Company speaking at COGA for the American National Gas Association (ANGA), a newly formed trade group that seeks to increase demand and promote greater gas use.<sup>18</sup> With the help of groups like ANGA, the natural gas industry must now convince people that gas is the right choice for the next phase in the nation's energy future.

### **Building New Alliances**

One way for the natural gas industry to inspire a friendlier attitude toward its newfound supply is to make new friends.

“In order to increase natural gas use, we have to take advantage of the low-carbon fever that's sweeping the world, and one way to do that is to come up with new alliances,” said conference organizer Fred Julander to his colleagues in the industry.<sup>19</sup> Julander has the environmental community primarily in mind as he talks about new alliances, and a significant portion of the conference program was devoted to prospecting for understanding and common ground that might be the basis of such partnerships.

But such alliances do not come easily. Howard Boigon of the law firm Hogan and Hartson pointed out that in conflicts between the natural gas industry and environmental organizations, everyone feels like the victim: “Each side sees the other as intractable and extreme. Industry sees environmentalists as antidevelopment, out to shut them down by making access and operations too uncertain and expensive to carry out. Environmentalists see industry as resistant to regulation, insensitive to impacts of their operations, and unwilling to spend the time and resources to address these impacts.”<sup>20</sup>

Are there factors at work that can begin to change this dynamic? Might the potential for natural gas to reduce carbon emissions and facilitate the adoption of renewable technologies be common ground to build upon? To explore these questions, COGA convened an innovative conference panel entitled “A Dialogue, Not a Shouting Match: Seeking Common Ground With Environmentalists.” On the day before they addressed the conference, the panel members took a trip together to see work being done at Questar's natural gas operation in the Pinedale Anticline in Wyoming, giving them – literally – a piece of common ground to structure their dialogue around.

Paul Matheny, Questar's vice president for the Rockies region, was the host of the trip and gave an overview of the company's pioneering approaches to drilling in sensitive deer winter range. To mitigate its environmental impact on the deer herd and protect the area's spectacular scenery and pristine air quality while carrying on drilling operations year round, Questar has employed subsurface wellheads and installed a gathering system that substantially reduces truck traffic to the wells. After an initial decline in the deer population, the company's actions seem to have taken hold, and the herd has recently appeared to be stable and healthy. Protecting winter air

quality has proved to be a challenge, and in several of the past five years high levels of ozone were detected around the gas operation. However, no such air quality violations were recorded this past winter, and Matheny is hopeful that the measures the company has put in place to safeguard against air pollution have been perfected to the point that they will eliminate future threats.

Although Questar's efforts have achieved a degree of success, the frustration voiced by Matheny over the negative press coverage that the operation has received is evidence of how far apart the industry and environmentalists might be from collaboration. Matheny suggested that, as far as he could observe, environmental NGOs work in collusion, operating behind a screen of friendly media and influential individuals rather than contacting companies forthrightly, and rely heavily on misinformation, fear, and emotion when making their case. He concluded that "if industry and conservation groups are going to work together to find common ground and work together to ensure that clean-burning, abundant, and currently cheap natural gas is going to play its rightful role in America's energy future, we need to stop the misinformation, stop the fear, and have the dialogue."<sup>21</sup>

Michael Ming, president of the Research Partnership to Secure Energy for America (RPSEA), agreed that the dialogue, in order to be productive, needs to be removed from the media and carried on in one-on-one conversations that allow the industry to explain its advantages directly to consumers, environmentalists, and policymakers. In order for industry to engage in a productive dialogue with environmental organizations, Ming suggested that operational issues such as access, taxes, and regulation – and the frustration that often accompanies them – need to become secondary in public policy discussions to selling people on the merits of natural gas. "If the public and policymakers aren't sold on gas," he reasoned, "they're not going to make any concessions on those three things."<sup>22</sup>

Jay Still, Executive Vice President of Pioneer Natural Resources, contended that while the industry does have undeniable environmental impacts, as a whole it deserves greater recognition for the investments it has made in efforts aimed at understanding and improving the environment that natural gas producers operate in. The idea of environmental "improvement," which is laudable for the underlying notion that the industry recognizes a responsibility to develop resources in the most sensitive and thoughtful ways possible, carries connotations of humans' central and superior position in the natural world that are anathema to many environmental organizations. It is a mindset that again demonstrates the complexities of this alliance-building endeavor.<sup>23</sup>

Sharon Buccino, director of the Public Lands Program at the Natural Resources Defense Council, made the trip to Pinedale as a representative of the environmental community, and she acknowledged the good efforts being made by Questar to develop energy in a responsible manner. She made it clear that she does see a compelling basis for a potential alliance between the natural gas industry and the environmental community. "We do need to tap into the gas that's there. We need it for our climate solution," she told conference-goers. But, she added, there's a caveat: "we need to acknowledge the impacts of getting it out of the ground and address those impacts rather than walking away from them."

By recognizing those impacts and addressing them proactively, as companies such as Questar and Pioneer have done in places, operators can move forward in ways that call into question bad publicity and avoid litigation. However, in another display of the space between the industry and environmental community, Buccino concluded with a warning that many environmentalists will always consider certain places, particularly wilderness and roadless areas, too special to develop, no matter how much resource they may hold and how responsible the operator is. “You’re guaranteed a fight, and you’re guaranteed a big fight,” she cautioned, “if you pick those areas to drill.”<sup>24</sup>

The leaders of the natural gas industry and the environmental community may not yet – or ever – see entirely eye to eye, but the leaders of COGA recognize that they are natural allies. And that potential for building an alliance is why COGA creates events like this to encourage dialogues that may eventually help establish a beachhead on common ground.

### **Convincing the Deciders**

Its trim emissions profile and compatibility with renewable energies like wind and solar give natural gas the positioning to become a major player in the New Energy Economy. Its level of involvement will depend on policy decisions being made in Washington. Several speakers addressed the fact that, despite the efforts of trade groups to lobby on its behalf, the industry has not been a notable participant in Congress’s efforts to craft the cap and trade program that will be the centerpiece of US climate legislation.

Tim Wirth, who called the natural gas industry the energy sector best positioned to prosper under a new carbon regulation regime, declared in no uncertain terms that the industry had blown an opportunity with the Waxman-Markey bill (officially titled the American Clean Energy and Security Act) that had passed the house shortly before the conference convened. “The natural gas industry missed the biggest national commitment to generate a host of new energy jobs, to move toward a low carbon economy, to sharply grow the industry, and become a major player in the future of energy policy,” he chastised, urging the industry to rally and try to recoup their losses in the Senate version of the bill. Though “the hour is late,” he reminded the industry leaders gathered at the COGA conference that “the stakes are too big for you to be absent.”<sup>25</sup>

Others were also confounded by the industry’s limited presence in the debate in Washington. Governor Ritter urged the industry to get involved with the legislative process, calling the cap and trade legislation the “playbook” for the nation’s energy policy.<sup>26</sup> Energy policy analyst Randy Udall asked if the industry is “going to play this hand?”<sup>27</sup> And numerous speakers from the industry urged their peers to look to their own interests by engaging in the legislative process before it is too late. Even if embracing cap and trade and other political realities of the New Energy Economy requires some members of the industry to recalibrate long-held strategies and personal convictions, David Fleischaker of Jolen Operating Company urged his colleagues to see it in pragmatic terms, not as a retreat but as “advancing in another direction.”<sup>28</sup>

Tim Wirth speculated on why lawmakers had not remedied the industry’s absence by taking it upon themselves to speak up for natural gas during the legislative process. He listed a variety of common misperceptions that make many legislators and their constituents skittish about natural

gas. Wirth suggested that many in Congress do not understand the tremendous scarcity-banishing scale by which the breakthroughs in unconventional gas plays have expanded the supply, and thus there are broad but unjustified apprehensions about gas's reliability as a source of power generation or transportation fuel. Much of the public remains unaware that gas is a domestic resource – that much of the gas consumed would be produced close to home – except insofar as disputes over drilling offshore and on public lands make them wary of gas development's environmental impacts. The industry doesn't do itself any favors either, Wirth asserted, by continuing to allow itself to be “wrapped together with coal and oil” when it should be differentiating gas as significantly less carbon intensive than its fossil fuel counterparts.<sup>29</sup>

Melanie Kenderdine, Associate Director for Strategic Planning at the MIT Energy Initiative, added another possible explanation, asserting that the natural gas industry “the natural gas industry is so fractured and rudderless” that it has been largely absent from energy policy discussions in Washington for nearly the past nine years. In her view, the lack of attention to natural gas in the massive Waxman-Markey bill and the Obama Administration's proposed budget are only the most notable consequences of a long-term failure by the industry to effectively engage in public policy discussions.<sup>30</sup>

The industry needs to find effective ways to overcome these common misperceptions and its internal fragmentation if it wants to persuade legislators to see it as one of the cornerstones of the New Energy Economy. Tim Wirth urged the assembled members of the industry to come together and reach out beyond traditional supporters to recruit new champions. Such a preponderance of concerns and misunderstandings will be difficult to counter without a broad coalition of supporters.<sup>31</sup> As David Flieschaker pointed out, perhaps drawing on his own experience in politics as Oklahoma's Secretary of Energy, that if they are approached in the right spirit, “elective officials are highly receptive to those collaborations.”<sup>32</sup>

Despite the missed opportunities with the House energy legislation, efforts by COGA's leaders to build alliances based on natural gas's compatibility with the New Energy Economy may already be paying off. In his speech at the convention, Colorado Governor Ritter declared natural gas to be “mission critical” to the state's New Energy Economy and announced that he had asked Representative Diana DeGette, a fellow Colorado Democrat, to hold off on her fracking bill and “consider authorizing a comprehensive study of this issue instead of jumping directly to a new and potentially intrusive regulatory program.”<sup>33</sup>

### **Is Anyone Buying What You're Selling?**

The natural gas industry's ability to successfully play to its strengths in the New Energy Economy will be a key factor in determining its long-term economic health. While the fallout from the global economic downturn is likely to fill the next few years with economic challenges, carbon regulation should be the basis of a bright financial future for the industry. That was the message delivered by keynote speakers Jen Snyder, head of North American Gas Research for Wood MacKenzie, and Kevin Petak, Vice President of Gas Market Modeling for ICF International.

The breakthroughs that gave the industry the capability to dramatically increase the nation's gas supply arrived on the scene at the same time that the global credit crisis sent economies worldwide lurching into recession. The hard times have reduced the overall demand for power as people look for ways to reduce household expenses and industrial production slows down accordingly, leaving little free space in the power generation market for operators looking to expand their share. Jen Snyder expects that any demand that does exist will be met by a wave of liquid natural gas projects, commissioned years earlier when the gas market was tight, crests in 2010 and '11 and a series of coal-fired power plants already under construction continue to come online through 2012. These new supplies will hold down demand for natural gas until 2012 or '13 while the economy – and power demand – slowly recovers.<sup>34</sup>

Kevin Petak told conference participants to make no mistake: Carbon regulation will be good for the natural gas industry. As power demand gains strength with the overall economic revival, carbon regulation will discourage the construction of additional coal-fired power plants, leaving room for gas to claim a greater share of the power generation market. Assuming that people return to their prerecession electricity consumption habits, Petak sees gas-fired generation growing from providing 20 percent of the US electric load to nearly 30 percent over the next two decades.<sup>35</sup>

Such steady growth of the US market will allow producers to move out from the easiest and lowest-cost unconventional gas plays like the Haynesville shale in Louisiana and develop more technically challenging and costly plays such as the tight sands waiting untapped in Colorado's Piceance Basin, Jen Snyder said. Pushed to the margins of economic viability when gas prices were low, these postponed plays now constitute a ready supply cushion that will allow the industry to meet additional demand prompted by carbon regulation and other policy initiatives without a sharp increase in the price of gas.<sup>36</sup>

These plays have different break-even prices, meaning that they become economical to produce at different gas prices. Porter Bennet, CEO of Bentek Energy, urged his colleagues to combat market misperceptions about the economics of natural gas by curtailing the industrywide habit of speaking in generalities about single price points that make gas production viable or cost-prohibitive. Instead, he advised them to discuss the individual break-even prices from one play to the next. By focusing on the unique break-even prices of individual plays, gas producers can inspire greater confidence in their ability to adapt to market fluctuations by drawing upon a variety of plays suited to different gas prices. As Jen Snyder put it, with a large number of plays ready to be economically produced at different price points, the gas industry is currently sitting on a "bank of prospective plays set to meet demand without exposing the market to the kind of painful price spikes that we experienced early this decade." And that available resource cache gains even greater flexibility as increased production efficiencies and technological advances drive break-even prices down over time, eventually turning plays that were once unconventional due to their high cost into the new conventional plays and helping to keep the gas supply steady and the price stable.<sup>37</sup>

Stabilizing price and supply will be critical if the gas industry hopes to capture more of the power generation market. Price fluctuations make utilities nervous, and gas prices have a history of dramatic swings said Kurt Haeger, Managing Director of Resource Planning for Xcel Energy,

the largest electric utility in Colorado. He explained that utilities do recognize the role of natural gas as a swing fuel to insure against the variability of renewable energy and to replace coal in an effort to replace carbon targets in the near term, but that utilities also have an eye on the day when gas will compete with renewables. As carbon regulations make coal a less attractive energy source, utilities will likely have to choose between gas or renewable energy to fill the gap in their portfolios. Unless natural gas producers make changes necessary to stabilize the gas price, when that day of decision comes – and Haeger said that Xcel is beginning the process of planning for it soon – wind and solar energy will possess an advantage not only in their emissions profile but also in their ability to deliver be delivered on long-term contracts at consistent prices.<sup>38</sup>

The natural gas industry is already aware that the new paradigm being ushered in by renewable energy technology will require changes to its own business practices, explained Don McClure, Vice President of Government and Stakeholder Relations and Legal for Encana USA as well as the Chair of the COGA Board. In order to remain competitive and exploit the opportunities presented by the shift toward a New Energy Economy, he suggested that the industry should focus on maintaining steady production levels and managing risk in order to meet the need for long-term contracts with utilities. By implementing models designed to provide a continuous level of production from a variety of plays rather than chasing high prices with increased production until the price or the play collapsed, producers can assure a steady supply of gas over a long horizon rather than perpetuating the boom and bust cycles that have historically stymied the industry. This focus on longer horizons will demand even more attention to risk management in order to smooth out the impacts of forces beyond industry control, such as hurricanes, tornados, or the vagaries of the commodity futures market.<sup>39</sup>

If the natural gas industry can effectively calibrate the variety of plays now available to produce a steady supply of gas at a reliable price, the economic future looks bright as carbon regulations drive greater demand for gas in the transition to the New Energy Economy.

### **An Abundance of Solutions**

Natural gas offers a variety of benefits that align with the policy priorities of the New Energy Economy. Abundant throughout the United States, natural gas can create jobs and add vitality to many sectors of the American economy, enhance the security of the national energy supply, and extricate the nation from complicated relationships with overseas suppliers. When operated with the greatest consideration of environmental concerns, gas development's relatively limited and temporary footprint on the land could cause its impact on ecosystems to compare favorably with large-scale renewable projects. Its ability to generate electricity quickly makes it an attractive complement and even partner to current technologies in renewable energy. And its slim emissions profile among fossil fuels means that, until the day comes when renewable technologies can fully power the world, gas offers significant environmental advantages over the current reliance on coal and oil in developed and developing nations.

At the COGA conference, Jen Snyder put this last point succinctly: "If reducing carbon dioxide emissions is a policy priority, gas is a solution." Her statement is an adaptable proclamation that

could become a catchphrase for leaders of the natural gas industry as they engage in deeply consequential policy discussions in the coming months:

*If a reliable energy supply is a policy priority, natural gas is a solution.*

*If promoting national energy security is a policy priority, natural gas is a solution.*

*If addressing climate change is a policy priority, natural gas is a solution.*

*If managing energy development's footprint is a policy priority, natural gas is a solution.*

*If facilitating renewable energy is a policy priority, natural gas is a solution.*

Gas cannot be the *only* solution for these issues, and the solutions it offers are not without significant tradeoffs and complications. But its strength rests on the many ways in which it aligns with the policy priorities of the New Energy Economy.

This is the message that emerged over three summer days at the Colorado Oil and Gas Association's Energy Epicenter conference in 2009.

This is the message that gives members of the natural gas industry reason to hope that they will indeed change the world.



## **About COGA**

Founded in 1984, the Colorado Oil & Gas Association's (COGA) purpose is "to foster and promote the beneficial, efficient, responsible and environmentally sound development, production and use of Colorado oil and natural gas." COGA is a nationally recognized trade association that aggressively promotes the expansion of Rocky Mountain natural gas markets, supply and transportation infrastructure through its growing and diverse membership. With Denver as a central focus of the region's growing gas industry, our association is at the forefront of the legal, legislative and regulatory issues facing our member companies.

For more information about COGA, please visit [www.coga.org](http://www.coga.org).

## **About the Center of the American West**

The Center of the American West at the University of Colorado at Boulder is one of the region's most creative and innovative organizations in identifying and addressing such crucial issues as multiculturalism, community building, fire policy, and natural resource use. Enterprising and inclusive in its embrace of a wide range of disciplines and strategies of communication, the Center strives to illuminate the challenges and opportunities facing this complicated geographic and cultural area. Ultimately, we want to help citizens of the West become agents of sustainability – citizens who recognize that their actions determine the region's future and who find satisfaction and purpose in that recognition.

For this publication, the Center was hired by COGA to produce a summary of the Energy Epicenter 2009 conference. The authors have had full editorial independence.

For more information about the Center of the American West, please visit [www.centerwest.org](http://www.centerwest.org).

## Notes

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<sup>1</sup> Colorado School of Mines, “Potential Gas Committee Reports Unprecedented Increase in Magnitude of US Natural Gas Resource Base,” press release, 18 June 2009. Available at <http://www.mines.edu/Potential-Gas-Committee-reports-unprecedented-increase-in-magnitude-of-U.S.-natural-gas-resource-base>. As we write, the full report has not yet been issued, but its findings have been announced.

<sup>2</sup> In a pipeline forum held at Energy Epicenter 2009 on July 9, a number of pipeline operators presented updates on their projects to the conference. Participants included Craig Coombs of El Paso Western Pipelines, John T. Dushinske of Kern River Gas Transmission Company, John Eagleton of Kinder Morgan Energy Partners, Larry Larsen of Williams Northwest Pipeline, Todd Johnson of TransCanada, and Shelley A. Wright of Questar Pipeline Company.

<sup>3</sup> Keith Rattie, presentation at Energy Epicenter 2009, Denver, Col., 7 July 2009.

<sup>4</sup> Articles produced by ProPublica, an online investigative reporting service, as part of its “Buried Secrets” series (<http://www.propublica.org/series/buried-secrets-gas-drillings-environmental-threat>) have played a lead role in raising questions about fracking. Energy In Depth, an industry-supported website, provides a number of resources in support of fracking on its “Frac In Depth” page (<http://www.energyindepth.org/in-depth/frac-in-depth/>).

<sup>5</sup> On June 9, 2009, Rep. DeGette introduced HR 2766, commonly known as the FRAC Act, proposing to “To repeal the exemption for hydraulic fracturing in the Safe Drinking Water Act.” Available online at <http://thomas.loc.gov/cgi-bin/query/z?c111:H.R.2766:>

<sup>6</sup> Lynn Coles, “Integrating Natural Gas with Wind, Solar, and Other Renewables,” presentation at Energy Epicenter 2009, Denver, Col., 7 July 2009.

<sup>7</sup> Senator Tim Wirth, “Climate and Natural Gas: The Opportunity,” keynote speech at Energy Epicenter 2009, Denver, Col., 8 July 2009.

<sup>8</sup> US Office of Fossil Energy and National Energy Technology Laboratory, *Modern Shale Gas Development in the United States: A Primer* (US Department of Energy: 2009), 5-6.

<sup>9</sup> Peter Tertzakian, “The Evolution of Our Energy Diet: Toward a Greater Use of Natural Gas,” presentation at Energy Epicenter 2009, Denver, Col., 7 July 2009.

<sup>10</sup> Rattie, presentation.

<sup>11</sup> C. Michale Ming, “The Natural Gas Industry: Doing, Not Just Saying,” presentation at Energy Epicenter 2009, Denver, Col. 8 July 2009.

<sup>12</sup> James S. Cannon, “Natural Gas Demand in the New Energy Economy,” presentation at Energy Epicenter 2009, Denver, Col., 9 July 2009.

<sup>13</sup> David Fleischaker, “A Strategy for the New Political Landscape: ‘Advancing in Another Direction,’” presentation at Energy Epicenter 2009, Denver, Col., 8 July 2009.

<sup>14</sup> Kate Fay, “Natural Gas and Renewables: Balancing Options and Impacts,” presentation at Energy Epicenter 2009, Denver, Col., 7 July 2009.

<sup>15</sup> Andrew L. Spielman, “Siting Similarities: Conventional Energy and Federal Renewable Initiatives,” presentation at Energy Epicenter 2009, Denver, Col., 7 July 2009.

<sup>16</sup> Tim Sullivan, “Balancing Future Energy Production, Renewables and Natural Gas, With Their Carbon and Ecological Footprints,” presentation at Energy Epicenter 2009, Denver, Col., 7 July 2009.

<sup>17</sup> Sharon Buccino, “Finding the Balance: The Role of Natural Gas in America’s Energy Future,” presentation at Energy Epicenter 2009, Denver, Col., 8 July 2009.

<sup>18</sup> David Trice, “Discovering America’s Clean, Abundant Natural Gas,” presentation at Energy Epicenter 2009, Denver, Col., 8 July 2009.

<sup>19</sup> Fred Julander, commentary at Energy Epicenter 2009, Denver, Col., 7 July 2009.

<sup>20</sup> Howard Boigon, moderator commentary at Energy Epicenter 2009, Denver, Col., 8 July 2009.

<sup>21</sup> J. Paul Matheny, “...Seeking Common Ground with Environmentalists: A Case Study of the Pinedale Anticline,” presentation at Energy Epicenter 2009, Denver, Col., 8 July 2009.

<sup>22</sup> Ming, “The Natural Gas Industry.”

<sup>23</sup> Jay Still, “Raton Basin Operation,” presentation at Energy Epicenter 2009, Denver, Col., 8 July 2009.

<sup>24</sup> Buccino, “Finding the Balance.”

<sup>25</sup> Wirth, “Climate and Natural Gas.” The full text of the Waxman-Markey bill, which passed by the US House of Representatives on June 26, 2009, by a vote of 219 to 212, is available online through the Library of Congress’s Thomas service (<http://thomas.loc.gov/cgi-bin/query/z?c111:H.R.2454:>).

<sup>26</sup> Gov. Bill Ritter, keynote speech at Energy Epicenter 2009, Denver, Col., 9 July 2009.

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<sup>27</sup> Randy Udall, “Holy Cross Energy: The Simple Math of Carbon Reductions,” presentation at Energy Epicenter 2009, Denver, Col., 9 July 2009.

<sup>28</sup> Fleischaker, “A Strategy for the New Political Landscape.”

<sup>29</sup> Wirth, “Climate and Natural Gas.”

<sup>30</sup> Melanie Kenderdine, “A Rational Natural Gas Policy: Carbon Mitigation Policy, Carbon Mitigation Target,” keynote address at Energy Epicenter 2009, Denver, Col., 8 July 2009.

<sup>31</sup> Wirth, “Climate and Natural Gas.”

<sup>32</sup> Fleischaker, “A Strategy for the New Political Landscape.”

<sup>33</sup> Ritter, keynote speech.

<sup>34</sup> Jen Snyder, “North American Gas Markets: A New Shale Paradigm,” keynote address at Energy Epicenter 2009, Denver, Col., 7 July 2009.

<sup>35</sup> Kevin Petak, “Gas at a Market Crossroad: What Does it Take for Gas to Succeed in Power Generation and What is the Potential?” keynote address at Energy Epicenter 2009, Denver, Col., 9 July 2009.

<sup>36</sup> Snyder, “North American Gas Markets.”

<sup>37</sup> Porter Bennet, “US Natural Gas Market Outlook, 2010 and 2011,” presentation at Energy Epicenter 2009, Denver, Col., 7 July 2009; Snyder, “North American Gas Markets.”

<sup>38</sup> Kurt Haeger, “Natural Gas and Its Role in a Renewable Electric Resource Portfolio,” presentation at Energy Epicenter 2009, Denver, Col., 9 July 2009.

<sup>39</sup> Don McClure, “Natural Gas Demand: The New Energy Economy,” presentation at Energy Epicenter 2009, Denver, Col., 9 July 2009.