

Solar, natural gas looking to have a bright 2015

This past October, at the Great Plains Empower Conference held at the Center for Excellence on the campus of Bismarck State College, I was reminded about differences in linguistic pedigree. From Robert Bryce's vocal rate to his tone to his articulation of syllables to



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his interview stance, it became obvious about two seconds into the interview he had done regularly on a national stage. In fact, my uncle Keith, the now-retired farmer who left high school at the age of 15 to work the farm, would refer to Bryce as someone who "is as polished as a shiny new dime."

Bryce has been involved in the energy communications industry for more than 30 years authoring five books on energy — "Pipe Dreams: Greed, Ego, and the Death of Enron;" "Cronies: Oil, the Bushes, and the Rise of Texas, America's Superstate;" "Gusher of Lies: The Dangerous Delusions of Energy Independence;" "Power Hungry: The Myths of 'Green' Energy" and "Smaller Faster Lighter Denser Cheaper: How Innovation Keeps Proving the Catastrophists Wrong." Bryce has appeared on dozens of TV and radio shows that have aired on variety of outlets including the Al Jazeera, BBC, CNN, Fox, Fox Business, MSNBC, NPR and PBS. He is also the author of the recent report "Coal Trumps IPCC Again" for the institute on the global coal sector.

Currently Bryce is a resident of Austin, Texas, and is a senior fellow for the

Manhattan Institute.

"It's a think tank based in New York City," Bryce said. "I work in their Center for Energy Policy and the Environment. I've been with them for about four years and it has been a great collaboration. I work with a lot of smart, ambitious, hard-working people so it's been a lot of fun."

When asked about natural gas and its recent activity in today's energy market, Bryce believes the United States is misrepresented globally and in reality is a leader in energy production and addressing environmental concerns.

"Nat gas use is growing dramatically here in the U.S., particularly in the power generation sector. It has been one of the reasons why the U.S. has been leading the world in reducing its CO2 emissions. And not by a little bit, but a lot," Bryce said. "In the last five years alone, the U.S. has reduced its CO2 emissions by about 400-million tons. That's more than six times than has been achieved over in Germany over that same time period and yet Germany is continually held up as the model the U.S. is supposed to follow."

Bryce thinks there are many possibilities, it just depends on what direction and how much capital. Transitioning from manufacturing value-added products to the world of transportation, Bryce sees natural gas continuing to capture more market share.

"So we've seen that big push in the power generation sector where natural gas is displacing coal," Bryce said. "But we are also seeing increased industrial use in fertilizer, in steel production, in petrochemicals and also in transportation. While it is making headway in transportation, let's be serious about how this feeds into the broader mix. We are using roughly 70 billion cubic-feet-a-day of gas in the U.S., transport might take a billion-feet-a-day by 2018. So in terms of overall consumption it is still a relatively small player, but it is going to be an increasingly important fuel in long haul trucking, in particular as to provide an alternative to diesel."

Bryce adds the natural gas game is really suited more for the bigger companies with access to large amounts of resources.

"When it comes to natural gas transportation, I really don't a big role for backyard entrepreneurs because of the capital requirements. They are just so large," Bryce said. "Building a natural gas refueling system or station is incredible capital intensive. Cummins is now marketing their natural gas fuel engine, 12-liter engine, which is not suitable for every long

haul truck. It lacks the kind of power it needs in the mountains. But nevertheless, Cummins in an enormous company and able to throw the type of resources needed in developing a purpose built natural gas engine."

Bryce does see countless opportunities for backyard entrepreneurs in the service and the support sector rather than in oil and gas itself, particular when talking about research and development.

"To your specific question about general or smaller backyard entrepreneurs, what we are seeing is an economic boom that is rippling throughout the entire economy," Bryce said. "So everybody from hotel owner and restaurant owner to refueling, so there are places in these booms for all kinds of people who want to start and own their own businesses. And I think it is all this economic activity is what is really allowing and providing an opportunity for a lot of people."

When asked about renewable energy and if there is any place in the near future for the resource, Bryce opined that over the years, he has learned one thing when it comes to electric cars.

"The electric car is the next big thing and it always will be," Bryce quipped. His views on solar, however, were a bit more encouraging.

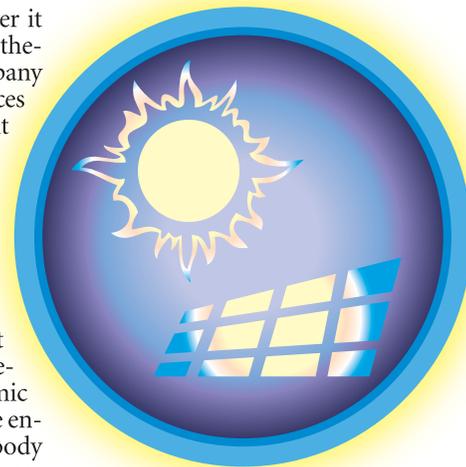
"What we have seen in the solar market in the past few years has been remarkable. The price reductions have been truly remarkable," Bryce said. "From 1980 when the cost of one watt of solar PV capacity cost over \$20 to today we are at less than a dollar a watt and by 2017 First Solar, an American company, is saying it will be less than 40-cents a watt."

Bryce continued with his views on solar by personalizing the experience then guiding the technology into the marketplace.

"This price reduction has been catalyzing incredible increases in new installations of PV. I have solar panel on my house, I have for nine years now," Bryce said. "It is very promising particularly for developing countries if they can twin solar storage capacity with batteries, then this is a very big deal. But let's keep in mind that this is starting from an extremely small base. Very, very small."

Perhaps the hottest topic in the industry surrounds importing and exporting and all the restrictions and regulations. The mood general depends on whose board room you are in and what that company's role in the market it. Bryce sees the U.S.'s role in the global energy play as something we have been driving towards for the past decade.

"My stance when it comes to importing and exporting is the market will find



the best levels with all of that," Bryce said. "It's funny, a few years ago, six or eight years ago, energy independence, this was the big cry. 'We need more corn ethanol.' 'We can't depend on the Saudis,' all these other things. And look what's happened. Remarkably, due to market forces, market forces not government edict, but entrepreneurs and people operating in North Dakota and Texas and elsewhere said we can drill for shale and produce oil and gas and make money at it. So no government intervention here to speak of. In fact, in many cases under the Obama administration active government hostility, and yet what's happened? Oil production is up by more than 30 percent just in the last few years now."

Bryce has similar views on natural gas and the direction of the natural resource.

"Natural gas the same. It is just an unbelievable turn of events. So when it comes to the issue of importing and exporting, the U.S. is already exporting roughly four million barrels per day of refined products. We are one of the biggest oil exporters in the world. Do we still import a lot? Sure we do. But we import and export a lot of thing," Bryce said. "We are country in theory that is based on free markets and free people, why would we want to be independent of the world's biggest market? The energy market. We need to be interdependent in the marketplace not independent."

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