

U.S. LNG reports: What Would Randy Udall Say?

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There has been considerable talk in the US of late about not only future energy exports but even about using an “energy weapon” against Russia. While that might be nice, it’s wishful thinking.

An energy commentator who thought in depth about the US’s energy policy back-story and the myth of oil independence was Randy Udall, who passed away suddenly in late June last year.

On March 21, 2013, during one of his last presentations, Randy delivered some remarks, accompanying a set of power-point slides, which provide the type of cautionary background that Washington insiders—including his brother Senator Mark Udall and cousin Senator Tom Udall—should heed.

His complete remarks, now posted on YouTube <http://www.youtube.com/watch?v=H9ueBIxCb-g&feature=youtu.be>, were recently transcribed by Steve Andrews; key points are listed below. The first remark about natural gas exports is actually a response to a question from the audience; the remainder is from his loosely scripted remarks. Clips are separated by (...) punctuation.

- This meme that we’ve got a 100-year supply of natural gas started at the Colorado School of Mines. They have a volunteer group there called the Potential Gas Committee, but the Potential Gas Committee is not looking at proven reserves; they’re looking at how much carbon might there be in 5000 feet of the Mancos shale.

- I look around and I start running the numbers. You know how much we've produced in this part of the world, in Weld County and Larimer County and the DJ Basin and the Wattenberg field we've been drilling for 80 years? Now, this field is primarily an oil field. But in that 80-year period of time we've produced enough natural gas to run the US for four months.
- In the Powder River Basin, with those 25,000 natural gas wells, we've produced enough natural gas to run the US for four or five months. When you look into it, there are only about six natural gas plays that are of any size; they're dominated by three or four of the big ones—the Marcellus in Pennsylvania...maybe it will end up supplying five years' of US gas demand over the next 60 or 70 years.
- The Barnett shale in Texas up to today has given us almost one year's supply of US gas demand. So in talk of 100 years, I go..."dude, you promised me 100 and you shorted me 70." When you look around you think, Piceance? We might get two or three years out of the Piceance over the next half century. I start trying to add it all up and the math doesn't work for me.
- So I think the Potential Gas Committee—John Curtis, who's a very respected geologist there—is saying this hype has gotten way out of control because if you make energy policy based on the notion that you have 100 years' supply of natural gas, enough to export... that's kind of where this rubber hits the road, when we start telling ourselves a story that we have enough to export natural gas. I'm not convinced we enough that we should export *any* natural gas.

Shale hype and Progeria

- There's been an unbelievable amount of hype recently about America striding towards energy independence, and "all of the

above”, and that we’re going to become the Saudi America of the world and that OPEC is doomed and that North America will soon be producing all of its own oil and natural gas. There’s a kernel of truth in that, surrounded by an enormous amount of hype and exaggeration and fantasy.

- As it turns out, coal-bed methane, tight gas and shale gas have ridden to the rescue. Production of conventional gas has continued its decline even to today. We had lunch yesterday with a guy named Richard Nehring who has the best database of oil and gas fields in North America. He said the largest conventional gas fields we’re finding now each year are not big enough to meet the nation’s gas needs for more than eight hours. So you would need 40 of these fields to meet two weeks’ worth of gas demand in the U.S. So even as shale gas has come in and plugged this hole, our conventional gas continues to decline. Essentially, we’ve used it. And most of the unconventional gases—90% of them—could not be produced unless they’re fracked. Essentially we’ve tied the energy future of this industrial civilization to hydraulic fracturing whether you like it or not.
- So here’s the bottom line: since 2008 the shale gas and tight oil production—the increases in these two things, when you convert it all to barrel-of-oil equivalents—is equal to about 4 million barrels of oil a day, just over the last five years. That’s more than two Prudhoe Bays. It’s the most rapid increase of energy production in American history. That’s why there’s been all this hype. That’s why there has been all this well-deserved celebration, in a sense.

If you go back even a little further, if you think where would America rank on the global energy production scale, just counting the oil and gas we were getting from shale formations and discounting all the conventional oil fields in the United States, and we just calculated what we’re producing today from wells we’ve drilled since the year 2000, the

US would be the 14th largest oil producer on the planet and we would be the second-largest natural gas producer, just from the drilling we've done into shales in the last 12 years. So this shale production is a phenomenon, it's a miracle, it's entirely unexpected.

But the miracle has a flaw. The miracle is destined to be fleeting, particularly with respect to tight oil. What people aren't talking about is this flaw. They're not talking about this mirage-like nature of these wells.

What do I mean? There's a rare disease that some young kids get; it's called progeria. It's a disease of accelerated aging. There are only a few cases a year on the planet. These wells, both the shale gas and tight oil wells, essentially have the same sort of disease of accelerated aging, accelerated depletion.

- The Haynesville is a play in Louisiana that no one had heard about as recently as 2008. In a single period of three years, with about 2500 wells, the Haynesville formation was producing more natural gas than we do in Colorado. And we have 50,000 wells. So in three years they went from a dead stop to producing more natural gas than Colorado, Wyoming or New Mexico—three states that had been in the gas business for 50 years. This is a decline curve for the normal Haynesville well. Along the bottom these are not years, these are months. This is progeria, this is a well dying as its born, producing exuberantly for a period of some months but quickly abating and becoming uneconomic. A well like this will not have a lifetime of 30 years or 20 years or 15 years; it will have a lifetime of 7 or 8 years.
- What Texas is doing right now, in terms of production, they need 800 drilling rigs to do it. And *The New York Times* is extolling what Texas is doing. Maybe it deserves to be extolled. But

Kuwait can do the same thing with 35 drilling rigs. What the Saudis are doing with 50 wells—producing a billion barrels—will take 5000 wells here in Colorado to produce the same billion barrels. So “drill, baby, drill!” is no longer optional. “Drill, baby, drill!” is destiny. In a way it’s manifest destiny.

Manifest destiny was all about an arrow pointing west, channeling this enthusiasm in America to the west coast. But I argued in a recent *Christian Science Monitor* piece that I wrote that our compass bearing is not west, it’s down. We’ve essentially chained the energy future of this country of 300,000,000 people to a drilling rig and thrown away the key.

So what does the future hold?

- We’re going to be drilling and fracking ad infinitum—probably a million more wells in the US by 2040.
- There are going to be tighter regulations on fracking because what you could do in Wyoming isn’t going to play in Pennsylvania. We’ve already begun to see that here in Colorado—more push-back from Longmont and Lyons and Fort Collins and a number of communities beginning to push back against fracking.
- Cheap gas? It won’t stay as cheap as it has been because it’s not economic, but cheap gas has created headwinds for coal and nuclear and to some degree wind and solar. It will save you some money.
- Yellowstone National Park in the northwest corner of Wyoming is a huge national park, some two million acres. Well, Anadarko, Noble, Exxon, Encana and Williams have essentially leased three Yellowstones here in Colorado. And the 50,000 active wells we have in the state may double by 2025, as a rough guess.

- And finally, what does nature want? I emailed my driller friend Charlie Brister once and I...asked Charlie what is it like drilling down into these formations where you're dealing with temperatures 300, 400, 500, 600 degrees F and these enormous pressures—what is that like, jousting with Mother Nature. And he wrote back and said “Randy, when we talk about Mother Nature we're not talking about a kindly grandmother but rather a moody capricious punk-rocker, someone we respect and fear.” And I think we're beginning to see this woman is coming ashore. We're encountering her now more frequently, in our extreme weather, in extreme droughts, the super storms, in floods, and extreme events of all kinds.

So thanks for your time tonight. I appreciate it.

*Randy Udall was an energy analyst and commentator based in
Carbondale, Colorado.*