DOE's Quadrennial Energy Review

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Good Morning. My name is Mindi Schmitz and I live in Jamestown. For the past five years I have worked in the Environmental Law and Policy Center's North Dakota office.

Thank you for arranging today's event and asking me to participate. And thank you for coming to North Dakota. Many of the issues surrounding America's energy development can be seen here.

ELPC is a non-profit organization operating throughout the Midwest and Upper Great Plains. We have offices in North and South Dakota, as well as in four Midwest states and Washington, D.C. We focus on public policies that promote energy efficiency, spur renewable energy development and create jobs while encouraging wise environmental practices.

Today, I am going to touch on two points:

- First, we need to expand our energy focus to include this state's renewable energy potential.
- Second, as oil development flourishes in our state, we need to ensure that wise policies are in place to protect public health and minimize negative environmental impacts.

Renewable Energy Potential in North Dakota

North Dakota is in the midst of an economic boom, driven to a great extent by energy production. This boom is primarily focused on Bakken oil but there are other energy development opportunities here to diversify the state's energy mix and broaden the economic expansion.

In particular, it is strategically important for the nation to expand its commitment to renewable energy. We need research and development designed to help us become a leader in alternative, sustainable energy, protecting our environment and creating myriad jobs in the process.

NREL, the department's excellent renewable energy research laboratory, has rated North Dakota's wind resource as the sixth best in the nation. However, that resource is not being tapped. Most recent data indicates that our state ranks 11th in wind energy production. There is a substantial and costly gap between the potential represented in the size of the resource and the actual represented by on-the-ground wind development.

I use the word "costly" because the failure to take advantage of this immense wind resource means a loss of jobs, landowners' lease payments, local property taxes and state and federal tax revenues. Just as our state has gained from Bakken oil development, so too could we benefit from greater wind development. It is important to remember that while the Bakken is located in one region of the state, the potential for wind is statewide.

The biggest impediment to renewable energy development in North Dakota is inadequate transmission. Like all commodities, wind-generated electricity must have a way to get to market. North Dakota has the wind resource and the potential for thousands of additional megawatts of energy but we need transmission. This is clean electricity with no pollution, no demands on water resources and no waste in need of disposal. We urge the Department to work with MISO and others to make sure adequate transmission is put in place to get our wind to market.

In addition, I wish to express support for NREL and its impressive work. In particular, I want to highlight and encourage NREL's continued work on batteries and energy storage. Research and Development is especially critical in the energy field. We must continue to fund R and D.

Attention to Wasted Energy in the Bakken and Problems with Flaring

Next, I'll turn to a wasted opportunity with serious negative economic, environmental and public health implications. As I've noted, an economic boom is underway in North Dakota driven by Bakken oil. It has produced jobs, significantly reduced unemployment, stimulated our economy, and responded to the nation's desire for domestic fuel. These developments, though, must not blind us to the harmful wastage occurring in North Dakota due to flaring and venting of natural gas.

Flaring has wasted millions of BTUs of gas that could have been added to the nation's energy production; it has also denied landowners and taxpayers of millions of dollars of revenue. Flaring is unnecessary and has harmful environmental consequences. Permit me to underscore three reasons why we should reduce flaring in the Bakken:

- First, we are wasting energy. North Dakota wastes – via flaring – about 1/3 of the gas it produces at oil wells. Although some actions are being taken to cut flaring, including the construction of new gas processing facilities and pipelines, the volume of flared gas keeps growing as the number of wells in the state rises. **In May 2014 alone,**

operators flared nearly 10 *billion* cubic feet of gas (enough to heat around 100,000 average homes for a year[1]).

Bakken natural gas is particularly rich with high quality natural gas liquids, including ethane, propane, butane or natural gasoline. Eight to twelve gallons of these liquids may be present in 1,000 cubic feet of raw natural gas, adding much value to the gas.[2]

Demand for gas and gas liquids is rising as electricity generators increasingly turn to gas for fuel. Adequate gas supply is essential to ensuring the heat and lights stay on during peak periods. As an example, during last year's harsh winter, North Dakota experienced a propane shortage that could have been alleviated, at least in part, by captured NGLs from fracking.

- Second, flaring costs the state, and nation, money. By flaring gas, we are throwing away revenue opportunities for landowners and much-needed tax revenues for local, state and federal governments. According to a report by CERES, in 2012 flaring resulted in the loss of approximately $1 billion in natural gas, and in May 2013 gas flaring cost the state about $3.6 million in lost tax revenue per day.

- Third, flaring is an environmental hazard. Gas flaring produces huge amounts of harmful, smog-forming nitrogen oxides and volatile organic compounds; greenhouse gas pollution, including carbon dioxide and methane; and toxic hazardous air pollutants.

  To put that pollution in perspective, Ceres found that flaring in North Dakota in 2012 alone amounted to the GHG emissions equivalent of adding 1 million cars to the road.

Venting natural gas – i.e., releasing toxic chemicals and methane, a powerful GHG pollutant, directly into the air, either intentionally or unintentionally through leaks – creates even more pollution than flaring.

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[1] In May 2014, operators produced 36,940,468,000 cubic feet of gas and flared 27% of that. ND Pipeline Authority Monthly Update for July 2014 (https://ndpipelines.files.wordpress.com/2012/04/ndpa-monthly-update-july-14-20141.pdf). 27% of 36,940,468,000 = 9,973,926,360 cubic feet. Per the American Gas Association, one billion cubic feet of gas "meets the needs" of 10,000 – 11,000 American homes for a year. http://www.aga.org/KC/ABOUTNATURALGAS/ADDITIONAL/Pages/HowtoMeasureNaturalGas.aspx. Thus, with nearly 10 billion cubic feet, the gas flared in May alone could meet the needs of around 100,000 American homes – or more – for a year.

[2] *See* http://thebakken.com/articles/413/aware-of-the-flare.

In addition to our objections to wasteful flaring and venting, we are also concerned about water usage demands and water contamination issues related to fracking. Water is being used for fracking in ever-larger volumes in North Dakota. Each fracking well requires millions of gallons of water per frack.

The more natural gas we waste, the more wells we will need to frack, with increasingly adverse impacts on water supply for farmers, ranchers, other businesses and public water supplies.

Upgraded, safe pipelines, rail cars, and trucks used for transporting oil and fracking wastewater are also critical to protecting our state's water supply. Already nearly a million gallons of fracking wastewater have spilled from broken pipelines and contaminated tributaries of the Missouri River.

We are especially concerned that fracking and flaring are devastating special places in North Dakota, including Teddy Roosevelt National Park. Flames from flaring obscure what were once pristine, starry night skies and pollution from flaring harms the park's plants and animals. We should not be fracking and flaring within view of the Park or any other special place.

Five Recommendations for the Department

- Adopt mandates to minimize flaring from oil/mixed oil-and-gas wells;
- Promulgate requirements to minimize methane leakage from wells, pipes and associated gas production and transport equipment;
- Pass more stringent rules for pipelines, railcars and trucks to minimize oil/wastewater spills, and strictly enforce those rules;
- Mandate that, where possible, fracking wastewater be recycled, and fund research to increase wastewater recycling; and
- Bolster protections for special places under federal control, including Teddy Roosevelt National Park, the Dakota Grasslands, and other sites with historical, archaeological and natural resource assets.

Closing comments

Thank you for this opportunity to provide input today. I hope that your visit to North Dakota is helpful and that you come away recognition that we have opportunities to broaden the energy mix. I hope, too, that you have a greater sense that along with the benefits emanating from the Bakken oil fields there are also serious environmental consequences that need attention.

ELPC believes we can have responsible energy development with immense benefits, but that also provides greater protection for North Dakota air, water and special places.