NaturEner

NaturEner USA, LLC

Presentation to:
Montana Sage-grouse Habitat Conservation Advisory Council

June 11, 2013

Objectives

- Inform you
- Make you glad
- Make you mad
- Make you think

Who: NaturEner N.A.

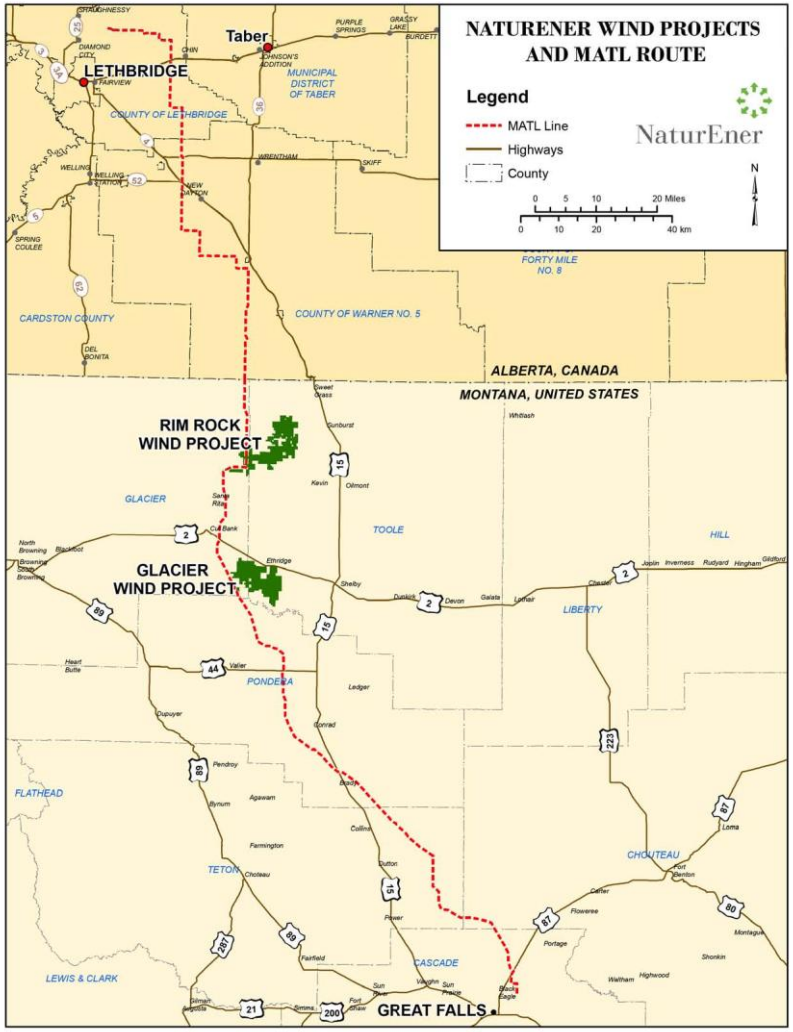
Over $800 Million Invested in North America since 2006

- Founded in Spain in 1988 with a corporate mandate to focus on renewable energy generation development
- In 2006 and 2007, the Company acquired three wind energy development companies with a portfolio of early- and mid-stage development assets in USA and Canada
- In 2008 and 2009, the Company built and placed in service its first two wind farms in the U.S.
  - Glacier 1: 106.5MW; total construction costs of approx. $250 million
  - Glacier 2: 103.5MW; total construction costs of approx. $220 million
- In 2012, the Company built and placed in service the 189MW Rim Rock wind farm in Montana
  - Total construction cost of approx. $380 million
  - Output from Rim Rock project destined for Alberta market
- Over $25 million of further equity capital invested by the Company on the development of its project pipeline
- Two North American offices: Calgary and San Francisco

Rim Rock Wind Energy Project added 189 MW of wind energy

Project Overview

- Capacity: 189 MW
  - 126 x 1.5 MW (Acciona AW77) turbines
  - Two (2) 34.5kV/230kV Substations
- Location: 25 miles northwest of Shelby, Montana
- Approx. investment: $370 million
- Interconnection: Montana Alberta Transmission Line (MATL) - Point of Interconnect: Hay Lake Switch Station
- Land: Approximately 21,000 acres secured under landowner lease agreements



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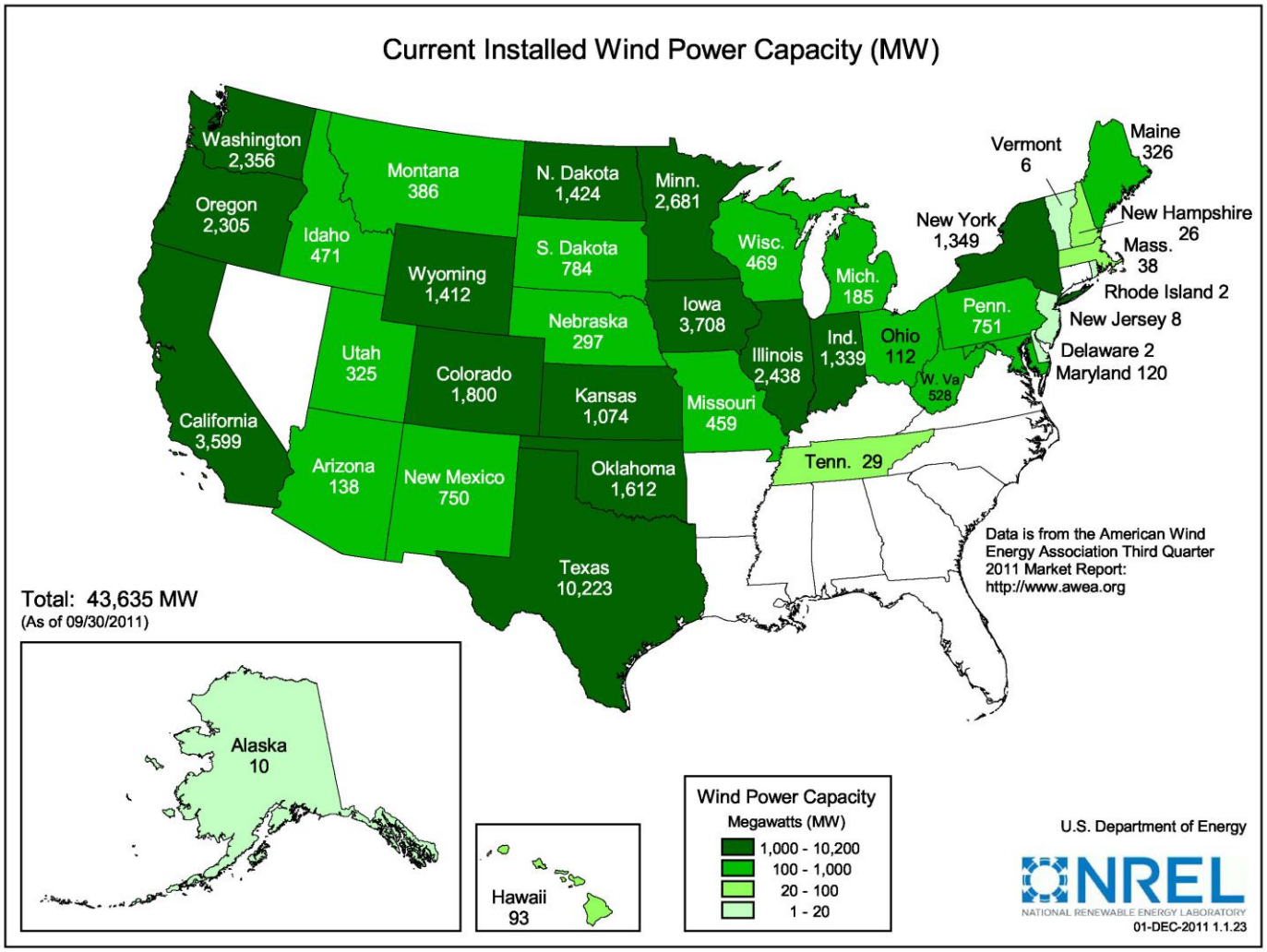
Once Rim Rock began operations, NaturEner now owns 70% of the wind generation in the State of Montana, with more than $800 mm invested



(Sep 2011 pre–Rim Rock information. Post–Rim Rock there will be 575 MW in MT)

Environmental Benefits of the Rim Rock Project

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Electricity Output:

- 189 MW averaging approximately 40% Capacity Factor
- Output = Generation MW x 8760 hours/year x % Capacity Factor
- 189 MW x 8760 hours/year x 0.40 = **662,256 MWh per year** (662 GWh per year)

Households served:

- Average U.S. household = 11.04 MWh per year (Ref: U.S. Energy Information Administration)
- 662,256 MWh / 11.04 MWh = 59,987 households
- **The Rim Rock Project will supply enough electricity for approximately 60,000 U.S. households per year**

Emissions Displaced:

- Greenhouse gas emissions average 0.7 tons per MWh
- 662,256 MWh x 0.7 tons per MWh = 463,580 tons of equivalent CO2
- **The Rim Rock Project will offset over 450,000 tons of carbon dioxide or greenhouse gas emissions per year**

Equivalent cars removed from highway:

- A car produces approx. 4.78 tons of CO2 emissions per year, on average (Ref: U.S. EPA)
- 463,580 tons of equivalent CO2 / 4.78 tons of CO2 per year = 96,983 cars
- **The Rim Rock Project will remove the equivalent emissions of over 95,000 cars from the U.S. highways each year**

Economic Benefits of the Rim Rock Project

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Jobs:

- Peak number of jobs during construction: approximately 320
- Focus is on utilizing local skilled labor and contractors; approx. 35% of the expected investment will be spent in Montana with approx. 20 % being spent in north central Montana
- Long term jobs during operation: approximately 20
- Secondary job creation in hotels, restaurants, and vehicle, equipment, and maintenance shops

Landowner Revenue and Family Farm Support:

- Wind farms are compatible with agricultural land uses and help preserve current native pasture characteristics enhancing wildlife habitat
- Annual royalty payments to landowners is expected to exceed $1.2 million/year
- Royalty payments support the viability of agricultural operations and create opportunities for generational transfer

Property Tax Revenue:

- Annual property tax payments to the various municipal authorities is expected to exceed $2.5 million/year

Montana GDP:

- Construction of the projects will contribute over $40 million to Montana's GDP
- During operation the projects will contribute annually approx. $5 million to Montana's GDP

Sage-grouse Impacts from Wind Energy Projects

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- **During Construction**
  - **Displacement**
  - **Habitat fragmentation**
  - **Non-productive nesting seasons**
- **During Operation**
  - **Displacement**
  - **Habitat fragmentation**
  - **Generational impacts**

Sage-grouse Impacts from Wind Energy Projects

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- **Long-term impacts on sage-grouse from wind energy projects has been inconclusive**
  - **Studies currently on-going**
  - **AWWI/NWCC has funded three long-term studies (intent is for seven years of post-construction monitoring**
    - **$713,000 in 2011**
    - **$533,000 in 2012**

Climate Change

- **Biological responses to climate change fall into two categories, each with a corresponding community of scientists, policymakers, and advocates:**
  - 1) **Adaptation**, or "managing the unavoidable" – developing measures that enable wildlife to survive already occurring climate change
  - 2) **Mitigation**, or "avoiding the unmanageable" – taking action to reduce the effects, reduce greenhouse gas emissions. In this context, renewables development is an important strategy)

Climate Change

- **BIOLOGICAL IMPACT OF WARMING**
  - **Biologists are already observing changes. Even if able to hold the increase in global temperature to 2°C, the implications are enormous. The 4th IPCC reports that an average global temperature increase of 2°C would result in extinction of approximately 400,000 species; an average 4°C increase would result in approximately a million species' extinction.**
- **Avoiding a 4°C world will require massive shifts of energy production.**

Climate Change

- **NREL has modeled the potential for high penetration of renewable energy.**
  - **A 2012 study, which focused on markets, cost, and infrastructure rather than on wildlife, concluded that 80% of US electricity could be generated from renewables by 2050, reducing annual emissions by nearly 81% and cumulative carbon emissions by 40 Gt CO2e.**
  - **Under this scenario as much of half of this electricity (40% of total consumption) could come from wind.**
  - **These models were neither predictive nor prescriptive, but they demonstrate the possibility of wind and other renewables making the kind of difference that would be required to mitigate temperature increases in excess of 2°C.**

Climate Change

- **The U.S. Fish and Wildlife Service is charged by Congress with enforcing the Migratory Bird Treaty Act, the Bald and Golden Eagle Protection Act, and the Endangered Species Act.**
- **We are able to measure the direct effects of wind energy facilities on raptor and bat fatalities, and are beginning to better understand the indirect effects – habitat fragmentation, displacement, and so on – that will be increasingly hard to avoid and mitigate as wind energy builds out to capacity.**
- **Despite these very real concerns, we have to ask ourselves explicitly, "To what extent do wildlife concerns delay climate change mitigation efforts?"**

Climate Change

- **As we move forward with "thinking globally and siting locally," we must address the following questions:**
  - **Can we agree on basic premises? Often the disagreements among stakeholders have to do with definitions of basic terms. For example, what do we mean by "significant" impacts?**
  - **Can we incorporate range shifts into risk assessments for projects with 30-year lifespans, given what we project about wildlife adaptation to climate change?**
  - **Are we prepared to make difficult trade-offs? One of the challenges we will have in this discussion, is that many of the species that are at greatest risk from climate change are not the same species that are most at risk from wind energy development.**
- **We need to rethink how we apply the pre-cautionary principle when we make decisions about renewable energy siting. Given the risks associated with climate change, on which side do we err – uncertainty about impacts due to development versus uncertainty about impacts of climate change if we don't act?**

Suggestions

- **Setback distances specifically defined for "core sage-grouse habitat" and setback distances defined for surrounding areas ("non-core sage grouse habitat")**
- **"Limited-term conservation easement"**
  - **For the life of a project plus 10 years**
  - **Annual landowner payments**
  - **Preserve the native pasture land-use (primary sage-grouse habitat)**
- **Mitigation option for disturbance of "non-core sage grouse habitat" (surrounding areas)**
  - **Quality factor calculation**
  - **3x, 4x, 5x times the amount of surface disturbance based on quality factor**
  - **Nearby offset similar to wetlands offset**

Questions & Discussion

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