

# Advancing the Role of Wind in Support of Department of Defense Energy Initiatives: Applying Information and Lessons Learned from the Private Sector

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# Organization

- Objective
- A Look at Wind
  - Overview & Facts
  - Lifecycle
- Regulatory Drivers
- Challenges and Opportunities
- Q & A



# Objective

- To relate an overview of the body of knowledge, expertise, and lessons learned gained from supporting private sector wind energy programs



# Wind Energy – An Overview

As an industry in the US:

- 1,695 megawatts (MW) of capacity first quarter 2012
- 48,611 MW of cumulative wind capacity
- >8,900 MW currently under construction; nearly 100 separate projects in 31 states & Puerto Rico

\*Source: <http://www.awea.org>



# Wind Energy – An Overview

- US wind industry has added over 35% of all new generating capacity over the past 5 years, second to natural gas, and more than nuclear and coal combined
- US wind power capacity represents more than 20% of the world's installed wind power

\*Source: <http://www.awea.org>



# Wind Energy – An Overview

- Emissions reduction
- Fuel use savings
- Reduced footprint
- Continued land use
- Other



# Wind Energy – A “Lifecycle”

Wind energy facilities can be thought of as having a “lifecycle”:



Opportunities and challenges may be identifiable only in certain stages of the lifecycle



# Wind Energy – A “Lifecycle”

- Prospecting
- Construction
- Operation and Maintenance
- De- or Re-commissioning





# Opportunities & Challenges

- Airspace
- Radar operations
- Homeland security
- Threatened and endangered species
- Wetlands and streams
- Cultural resources
- Noise
- Visual impacts



# Opportunities & Challenges

- An ever changing landscape
  - Federal, state, local siting requirements and regulations
  - USFWS Land-Based Wind Energy Guidelines (23 March 2012)
  - Draft USFWS Eagle Conservation Guidance



# Opportunities & Challenges

- Keeping up with the Regulations
  - Those that drive development of renewable energy (e.g., Department of Energy and Department of Defense initiatives and policies)
  - Those that govern or inform development of renewable energy (e.g., ESA, NEPA, NHPA, CWA, USFWS Guidelines, DoD Policy)



# Opportunities & Challenges Wildlife: An Example

- What are the big concerns?
  - Collision mortality (strike)
  - Habitat
  - Behavior
- What species are affected?
  - Birds
  - Bats
  - Threatened & endangered species
  - Other wildlife



# Informing Your Project

To address many of the opportunities and challenges related to wind energy development, look to:

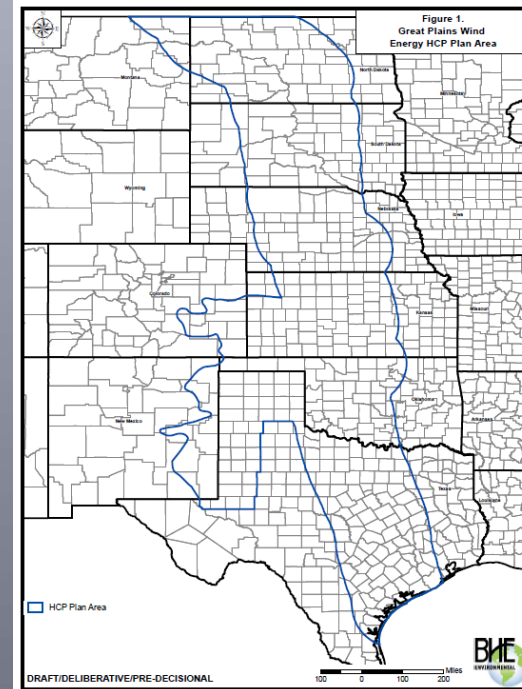
- Scientific body of knowledge related to wind and wildlife mortality, particularly birds and bats
- Agency guidance and policy



# Informing Your Project

- Ongoing industry initiatives, particularly regional

*Example:* Great Plains Wind Energy Habitat Conservation Plan – 9 states, USFWS Regions 2 and 6



# Lessons Learned

No surprise...

- “Early and Often”
  - Studies
  - Agency Coordination
- Streamline regulatory processes where possible (e.g., ESA consultation, NEPA compliance)
- Plan funding for and be prepared to complete post-construction studies, and to implement adaptive management if necessary



# Q & A





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