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Social Acceptance of Wind Energy: Managing and Evaluating Its Market Impacts

WINDPOWER 2012

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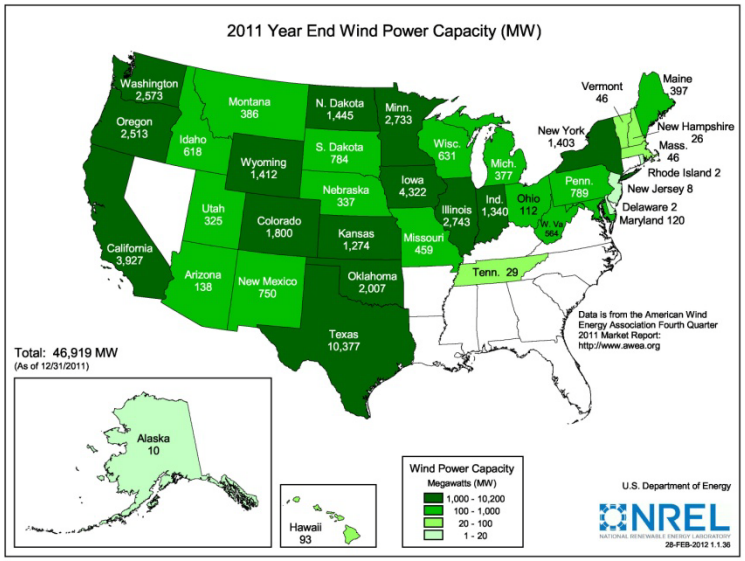
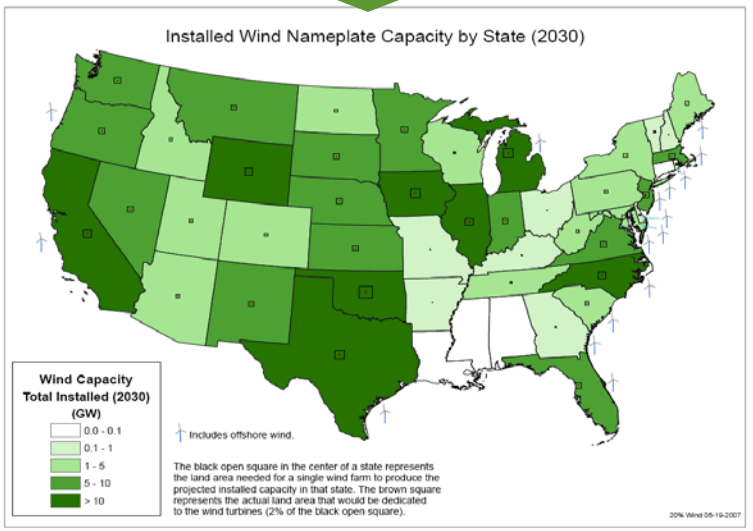
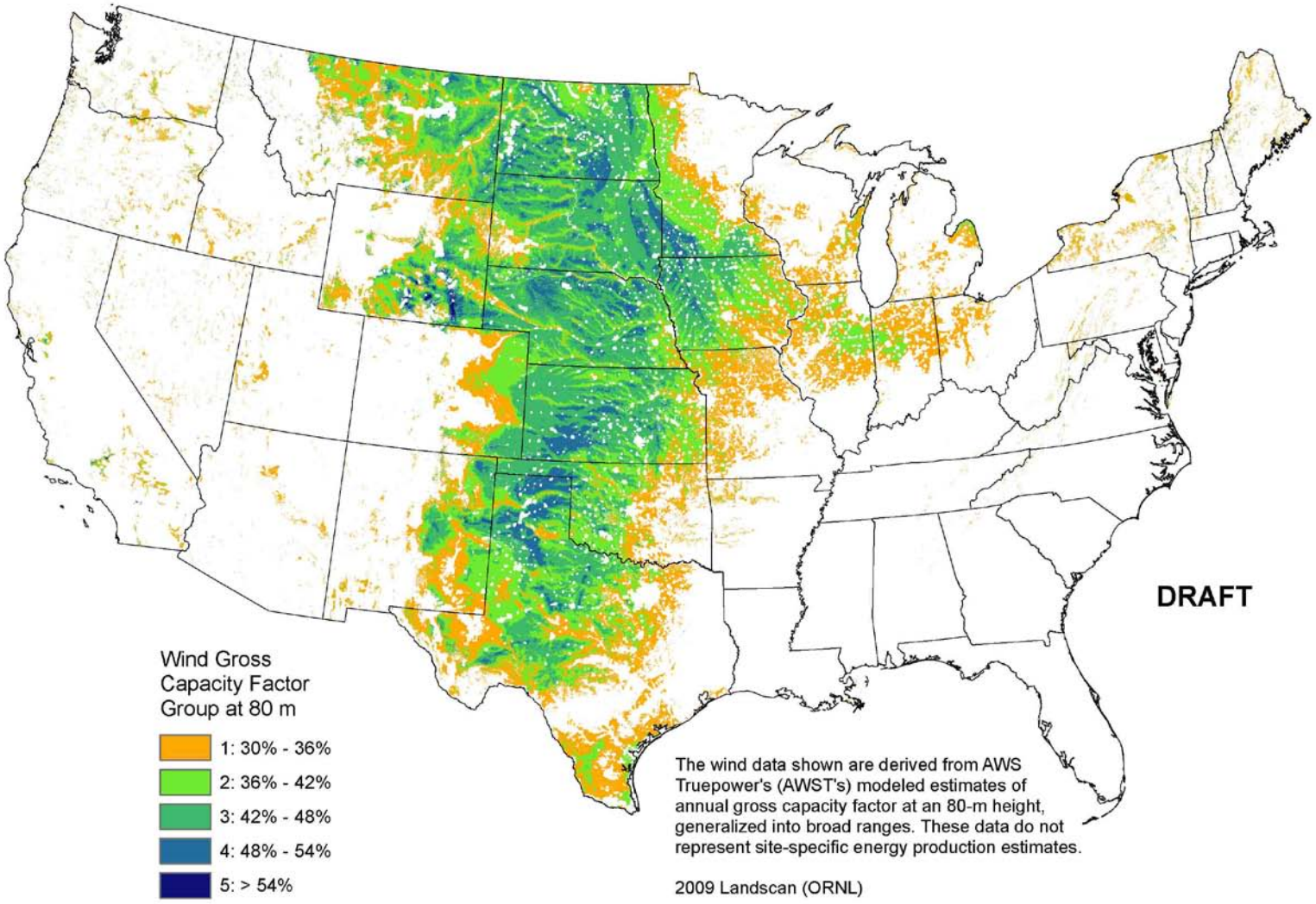
Background

- As with any industrial-scale technology, wind power has impacts.
- Responsible development requires a true understanding of the impacts wind development has on host communities and residents.
- Industry, governments, NGOs, and other stakeholders must make the effort to provide communities with the information needed to assess these impacts.
- Regardless of cost and performance, wind projects have been halted due to deployment barriers.
- As wind technology deployment becomes more widespread, a defined opposition will form as a result of fear of change and competing energy technologies.
- As the easy-to-deploy sites are developed, the costs of developing at sites with deployment barriers will increase, therefore increasing the total cost of power.
- Although the costs of addressing barriers to wind deployment are considered in the total cost, the true size and potential impact of these costs must be better quantified and understood.
- We do not know how these deployment barriers impact national development models, such as 20% wind by 2030.



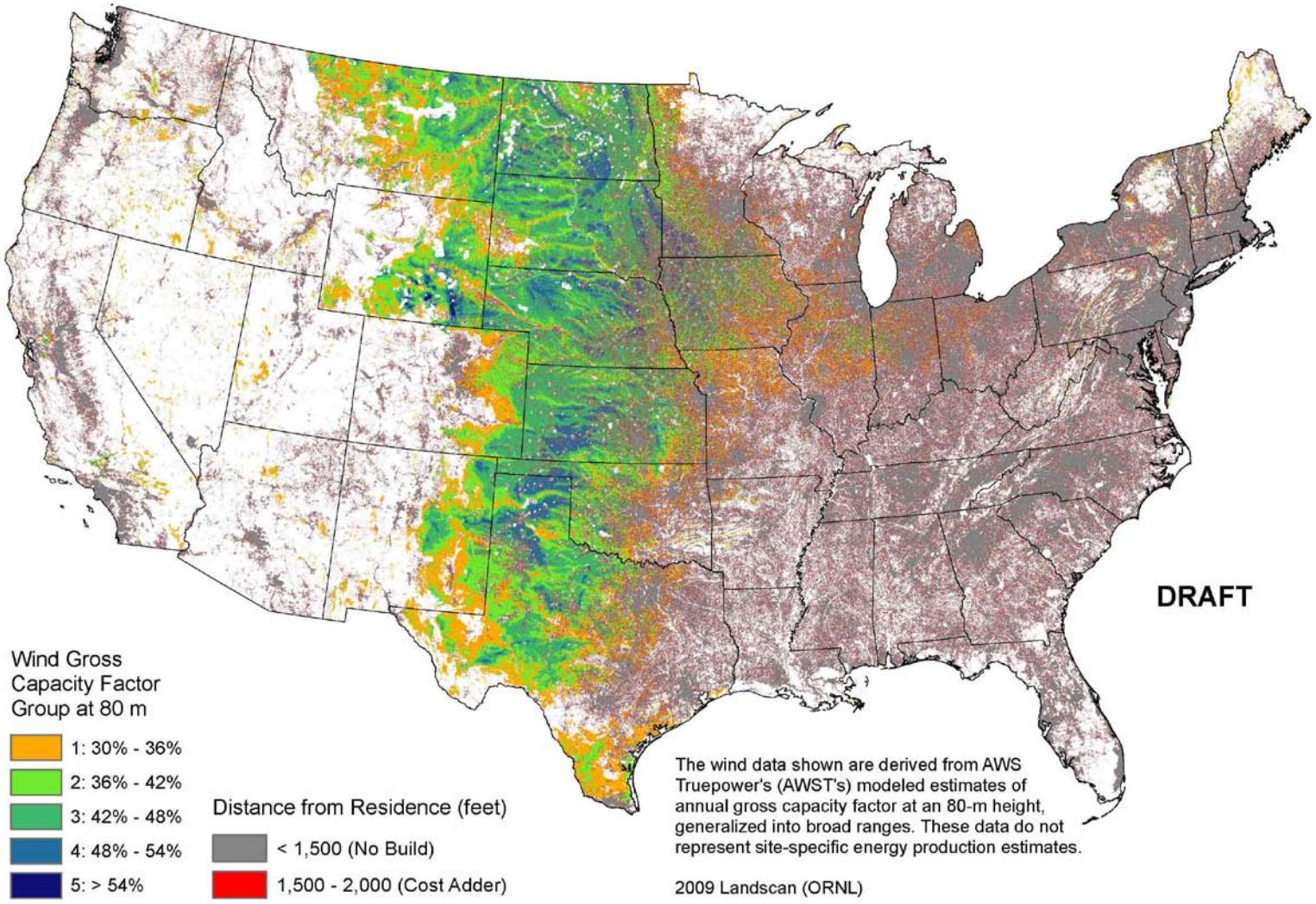


Base U.S. Available Recourse Capacity



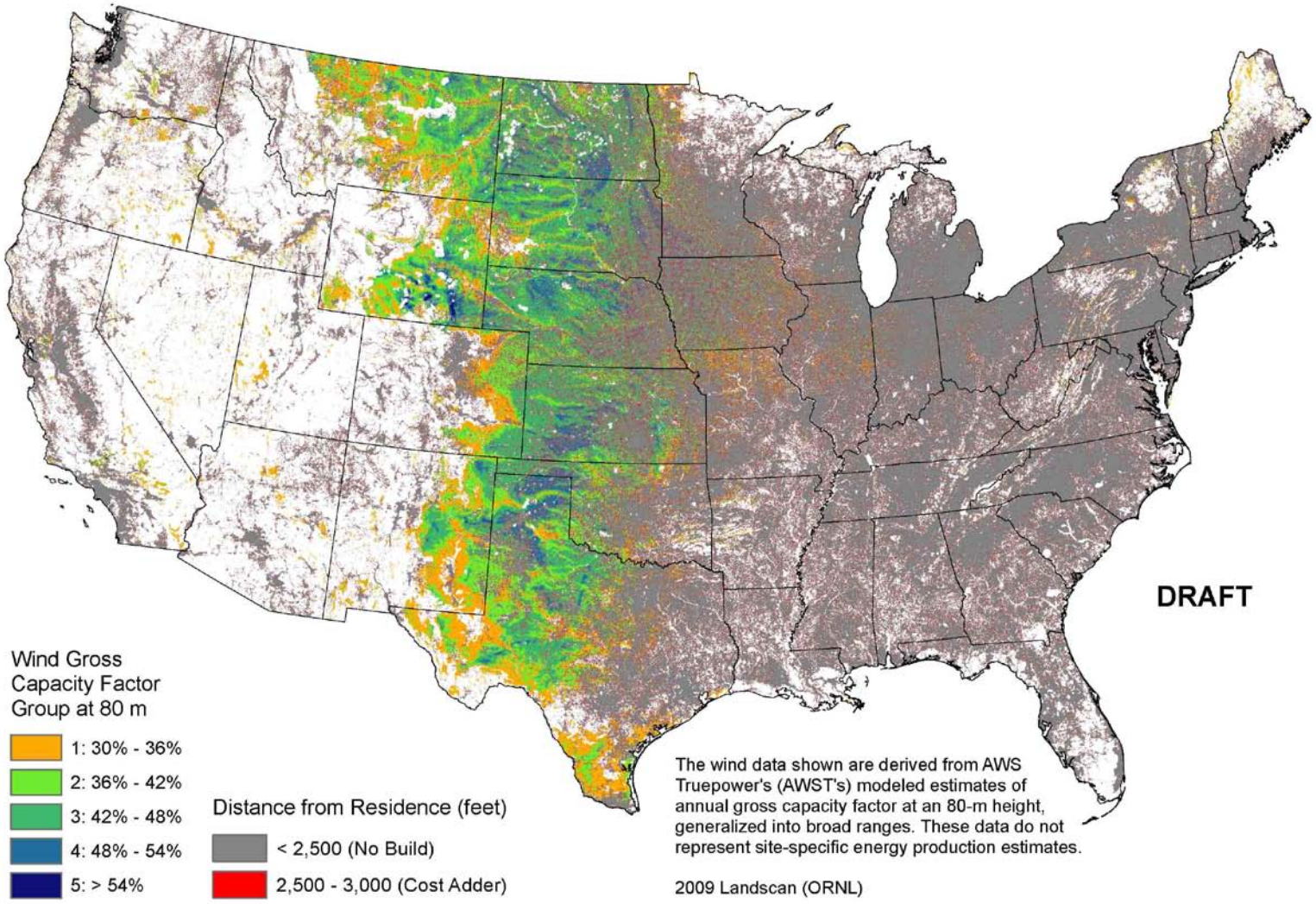
10,500 GW of total available capacity using standard set-asides and restrictions

Permitting Barriers – Medium Scenario



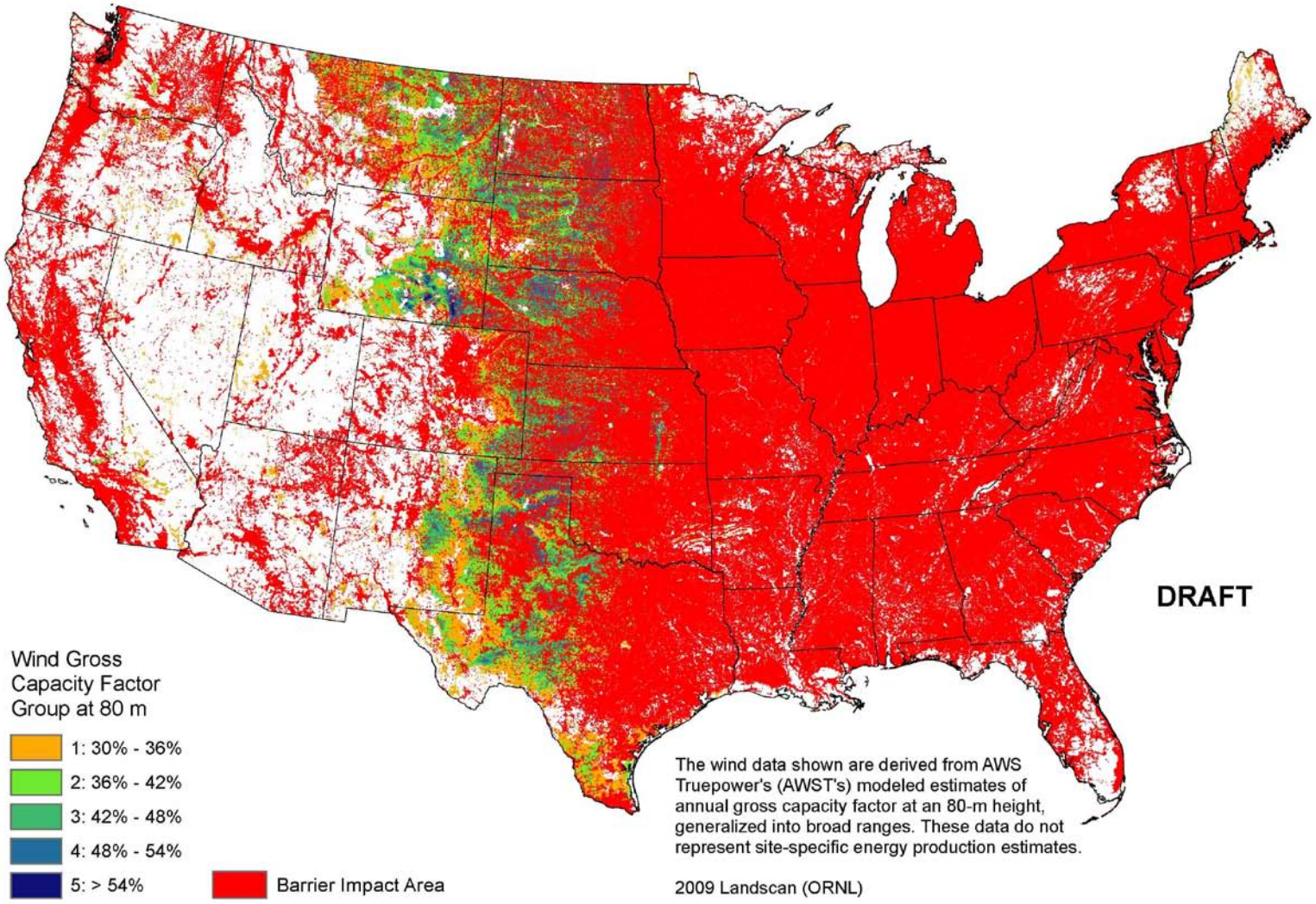
1500 ft buffer zone; ~30% reduction in potential capacity

Permitting Barriers – High Scenario



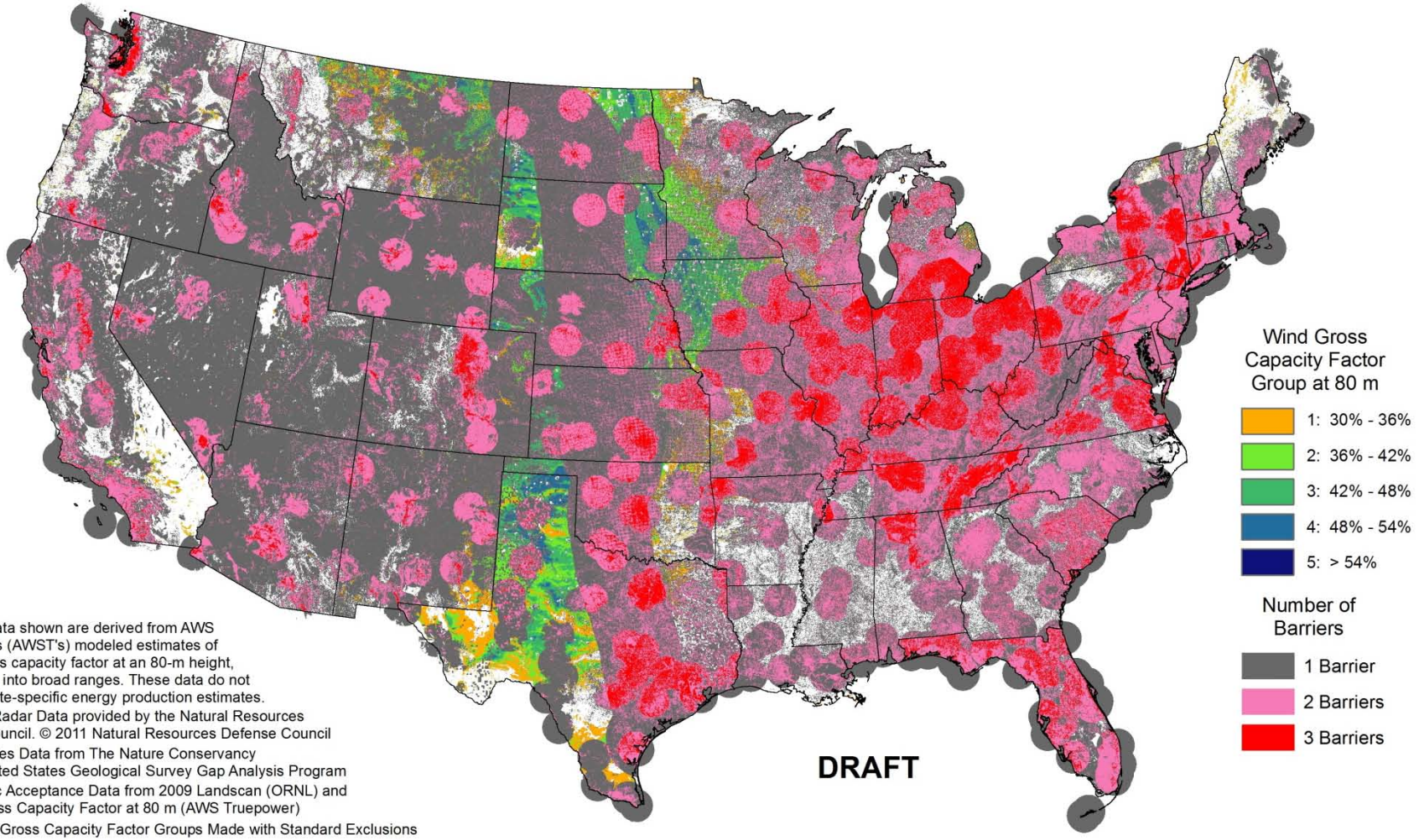
2500 ft buffer zone; ~45% reduction in potential capacity

Permitting Barriers – Extreme Scenario



1-mile buffer zones; ~65% reduction in potential capacity

Deployment Barriers – Total Impact Areas



The wind data shown are derived from AWS Truepower's (AWST's) modeled estimates of annual gross capacity factor at an 80-m height, generalized into broad ranges. These data do not represent site-specific energy production estimates.

Note: GIS Radar Data provided by the Natural Resources Defense Council. © 2011 Natural Resources Defense Council

Note: Species Data from The Nature Conservancy and the United States Geological Survey Gap Analysis Program

Note: Public Acceptance Data from 2009 Landscan (ORNL) and Annual Gross Capacity Factor at 80 m (AWS Truepower)

Note: Wind Gross Capacity Factor Groups Made with Standard Exclusions

If we combine documented deployment barriers; permitting, critical avian and bat areas, and radar – much of the nations resources will be impacted

Caveats to the Previous Graphs

These slides reflect a work in progress, are being actively refined, and are based on current insights, including discussions with industry and other stakeholders. The results have not been peer reviewed but will be formally released.

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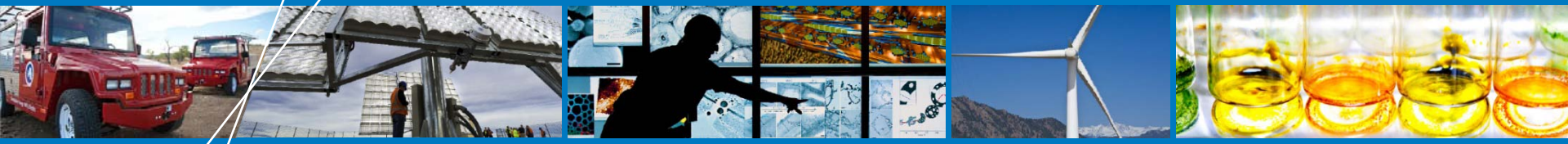

What do we Need to Understand about Stakeholder Engagement

Support from Eric Lantz of NREL, Bob Grace of Sustainable Energy Advantage LLC, and many other Wind Powering America partners

Wind Development Stakeholders

Proponents

- Their viewpoints often are perceived as having commercial interest.
- They may exaggerate the project benefits or downplay the impacts.

Undecided

- Typically most of the people in the community fall into this category, at least initially.
- They include open-minded abutters, community leaders, citizens' groups with a "what's in it for me?" or "how will this impact me?" attitude.
- They will be swayed to one side and, once decided, fall into those camps.

Opponents

- They may be "skeptics" who support wind but want it developed responsibly and don't want to be taken advantage of by another extractive industry; may require a high burden of proof.
- They may have "character of place" concerns and be in favor of wind but not here.
- They may be ideologically opposed, viewing wind as not having any potentially positive benefits. These individuals are increasingly sophisticated and networked, often from outside of the community. They use tactics ranging from legitimate questions to rhetorically brilliant disinformation.

Wind Project Development

As wind energy is implemented in an area:

- Change can be perceived as threatening.
- Public objectives can conflict with expanded development.
- Stakeholders can feel threatened by new options.

Siting and public decision-makers need:

- An accurate and objective understanding of the issues
- A consistent set of standards or knowledge on which to base decisions.

Siting and public decision-makers face:

- Conflicting info, competing claims, valid and baseless concerns
- An absence of independent (scientific, peer-reviewed) information
- A chaotic brew of fact, opinion, fear, hyperbole, disinformation, misinformation, or misunderstanding of complex systems.

How should project developers and public leaders engage the undecided majority who typically exist in the early stages of a siting process and are often key in determining the success of the initiative?

Results of a questionnaire conducted by Sustainable Energy Advantage LLC as part of the New England Wind Forum wind stakeholder workshop, funded by the U.S. Department of Energy

What are the biggest challenges to creating effective wind turbine regulations?

Results of a questionnaire conducted by Sustainable Energy Advantage LLC as part of the New England Wind Forum wind stakeholder workshop, funded by the U.S. Department of Energy

Key Takeaway Points

- Perception is reality; few people have experience with wind technology.
- Small minorities, nationally or in proximity to a project, may have undesirable impacts thrust upon them.
- A real need exists for an independent source of credible, objective info (although "objective" is in the eye of the beholder), as well as objective research to enable informed decisions.
- An entrenched industry will not easily give up ground. Consider the climate debate as an example of what to expect.

Simply – in relation to the three groups introduced previously

- Provide the proponents with accurate information while managing expectations.
- Engage the undecided with accurate and credible information while they are still willing to critically assess that information.
- Try to neutralize the opponents by being honest about the impacts and plans to make amends for those impacts.
  - Provide strong backup from independent sources before the negative claims are made
  - Understand that opponents often cultivate uncertainty (e.g., health impacts) to force consideration

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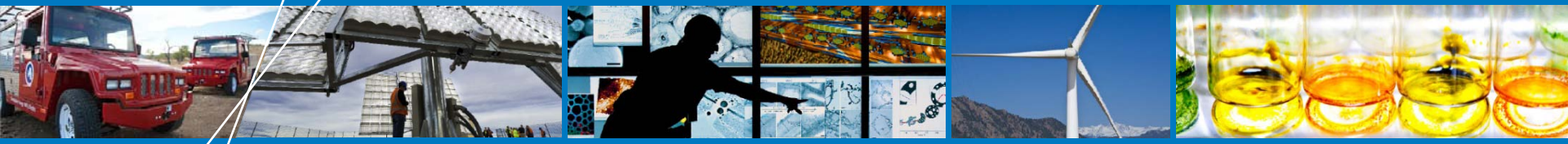


DOE Activities that Provide Wind Energy Deployment Information

Support from Jonathan Bartlett,
U.S. Department of Energy

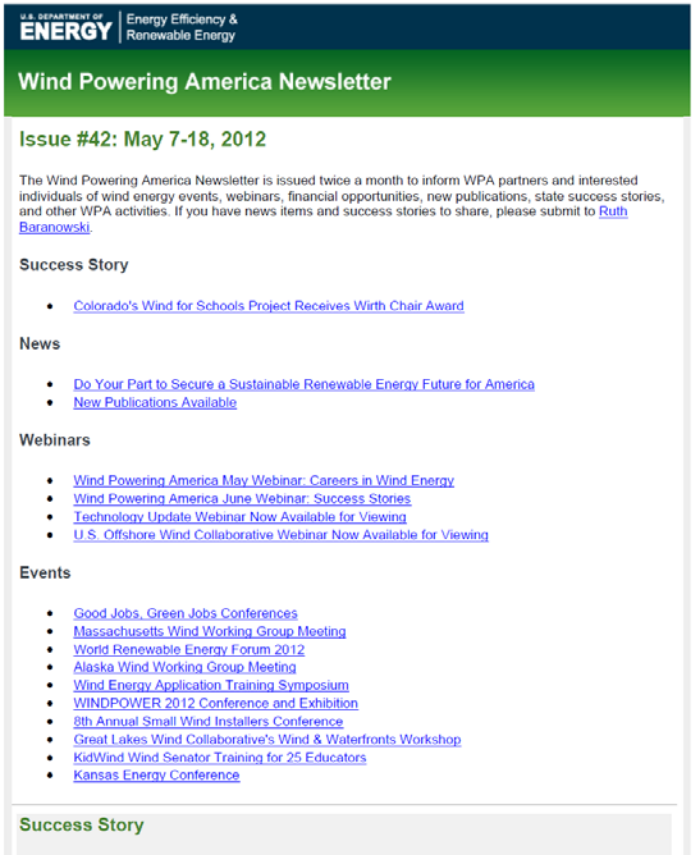
DOE Outreach Strategy

Educate, engage, and enable critical stakeholders to make informed decisions about how wind energy contributes to the U.S. electricity supply

- Disseminate accurate and needed information
- Build and support a diverse partner network
- Continually evaluate effectiveness.

Offer an extensive information platform and where we maximize the visibility of products we develop

- Publish WPA e-newsletter (~8,000 subscribers)
- Publish extensive webinar/podcast series, addressing many wind deployment issues; archive episodes for later reference
- Support regional stakeholder groups and networks
- Maintain consolidated web sites with useful information
- Develop success stories, lessons learned, and fact sheets
- Host annual All-States Summit for state and industry leaders
- Develop wind resource information for state users in different applications; utility, offshore, community and residential
- Expand the nation's educational infrastructure through workforce development and the Wind for Schools project
- Plan regional and technical workshops to bring people together
- Provide technical support to Wind Working Groups.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Wind Powering America Newsletter

Issue #42: May 7-18, 2012

The Wind Powering America Newsletter is issued twice a month to inform WPA partners and interested individuals of wind energy events, webinars, financial opportunities, new publications, state success stories, and other WPA activities. If you have news items and success stories to share, please submit to Ruth Baranowski.

Success Story

- Colorado's Wind for Schools Project Receives Wirth Chair Award

News

- Do Your Part to Secure a Sustainable Renewable Energy Future for America
- New Publications Available

Webinars

- Wind Powering America May Webinar: Careers in Wind Energy
- Wind Powering America June Webinar: Success Stories
- Technology Update Webinar Now Available for Viewing
- U.S. Offshore Wind Collaborative Webinar Now Available for Viewing

Events

- Good Jobs, Green Jobs Conferences
- Massachusetts Wind Working Group Meeting
- World Renewable Energy Forum 2012
- Alaska Wind Working Group Meeting
- Wind Energy Application Training Symposium
- WINDPOWER 2012 Conference and Exhibition
- 8th Annual Small Wind Installers Conference
- Great Lakes Wind Collaborative's Wind & Waterfronts Workshop
- KidWind Wind Senator Training for 25 Educators
- Kansas Energy Conference

Success Story

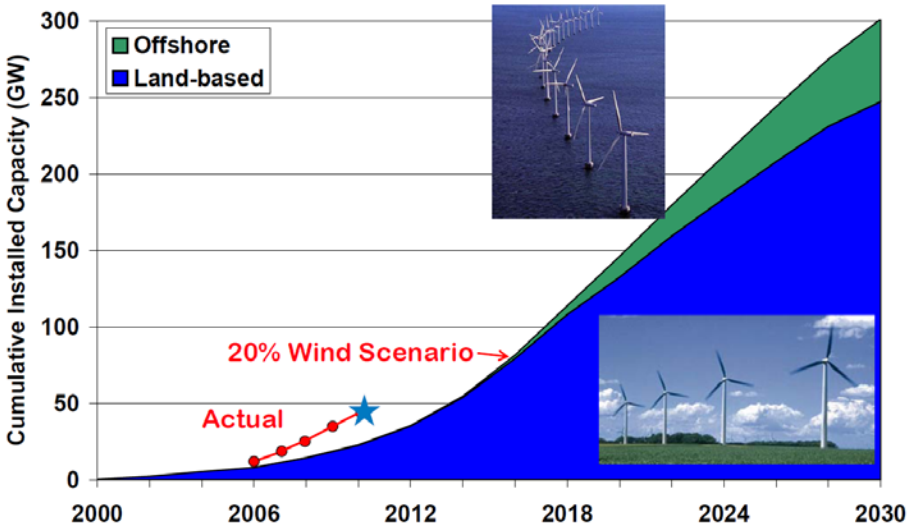
WIND POWERING AMERICA

www.windpoweringamerica.gov

Conclusions

It Will Get Harder Before It Gets Easier

- The industry is only beginning the development cycle to becoming a major energy market player.
- As wind deployment increases, the headwinds will increase as well.
- These barriers have cost and deployment impacts; failing to address them will also have a (likely larger) industry-wide cost.
- There is a role for all organizations in moving deployment forward; however, different organizations have different roles, and these roles must be understood.
- There are right ways and wrong ways to conduct stakeholder engagement; learn the right ways.
- The discussion has become sophisticated and in some regions heated, it will become more so.
- There are may flavors of opposition, assuming people are NIMBYs is not sufficient or helpful.
- There are multiple levels in the social acceptance discussion that must be addressed, from national to local.



Carpe Ventem

Photo from Iberdrola Renewables, *NREL PIX 16072*

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