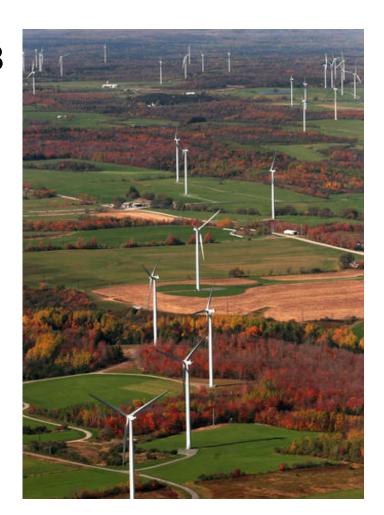
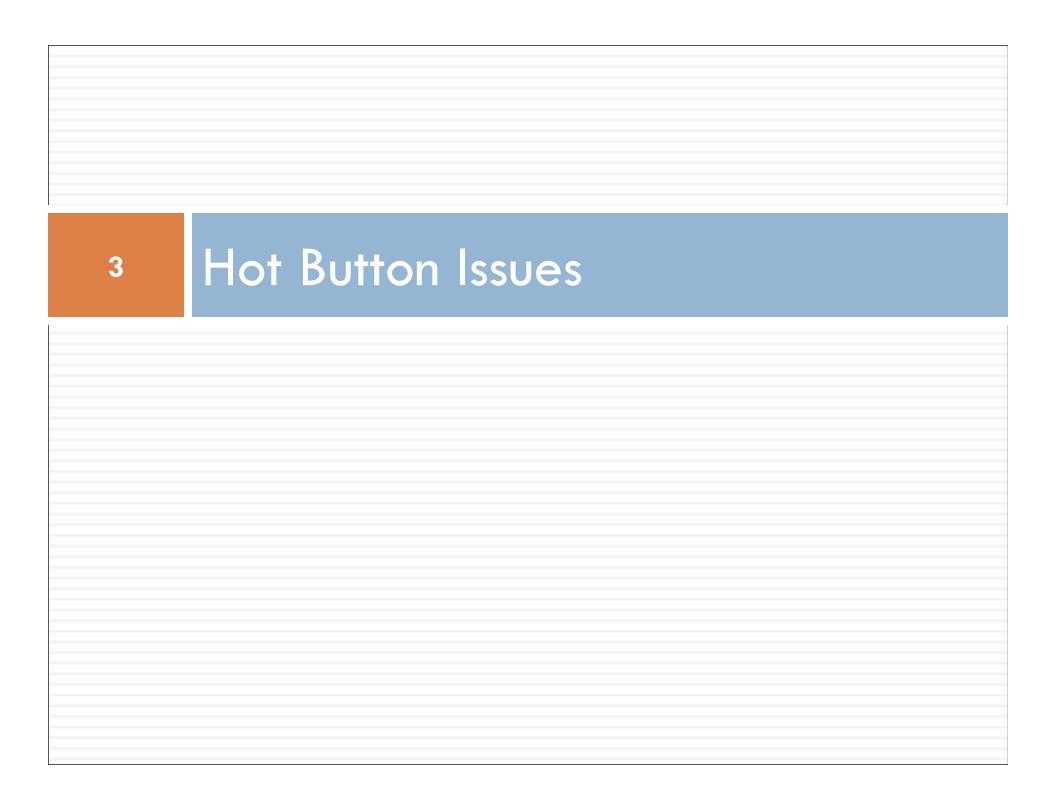


RENEWABLES SCALE UP: WIND FARMS

Wind Power on the Rise

- \Box + 8,500 MW in U.S. in 2008
- 42% of New Capacity in 2008
- □ >20% of U.S. Energy Feasible
- Technology Advancing
 - Newer farms more productive
 - More efficient designs





Hot Button Issues

- Offshore Wind in U.S.
 - Cape Wind project
 - Kennedys/public opposition
 - Wampanoag Tribes "first light"
 - Eligible for National Historic Register designation
 - Other Possible Sites in U.S.
 - Eastern seaboard
 - Great Lakes
 - Texas
 - California



Image source: Danish Wind Power Association

Hot Button Issues

- Wyoming Energy Excise Tax
 - Championed by Gov. Fruedenthal
 - Legislature Approved Feb 2010
 - 1/MWh = 3.8 M/yr
 - Split 60-40 between counties, state
 - 6% sales tax exemption expires 2010
 - WY has no income tax, 11.5% property tax



Source: BillingsGazette.com

■ Debate:

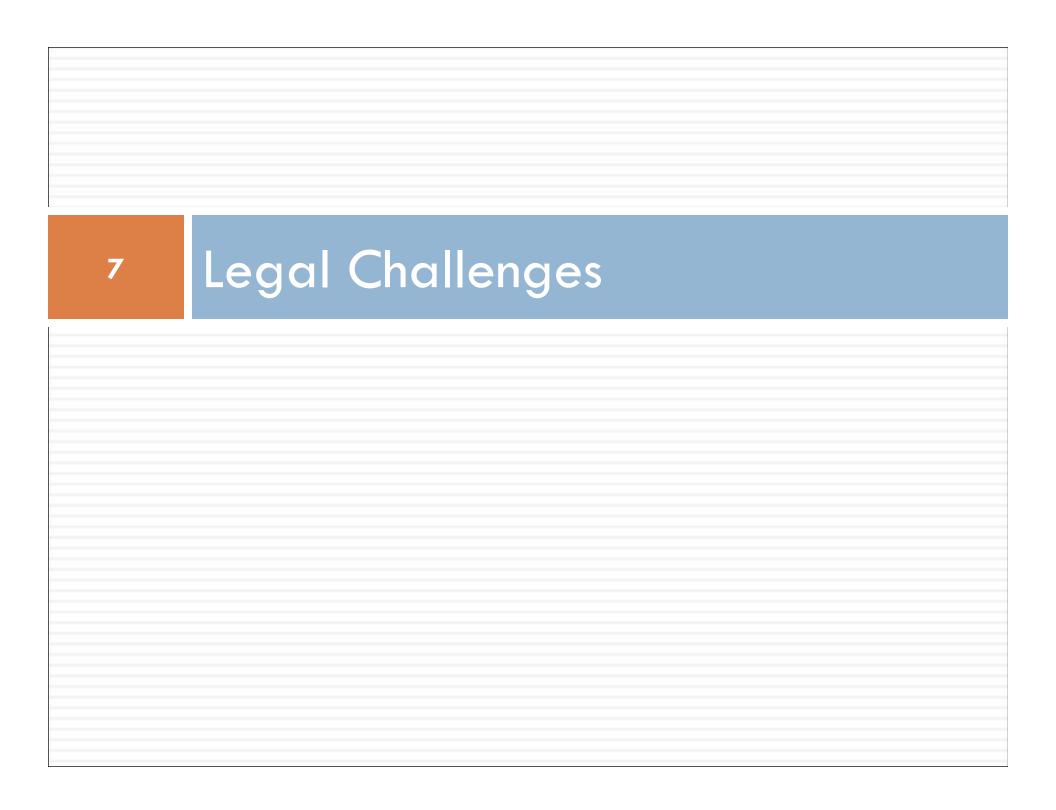
- Rate commensurate with impacts?
- Revenue opportunity vs. hobble fledgling industry

Hot Button Issues

- Financial Assurance
 - Local requirement for bond or similar guarantee
 - No precedent for lenders



- Intermittent Power Integration Charges
 - Backlash against RPS
 - FERC reviewing a request by Westar Energy
 - Reasonableness challenged by industry, advocates



Legal Challenges

- Endangered Species Act
 - Animal Welfare Institute v. Beech Ridge Energy, LLC, 2009 U.S. Dist. LEXIS 114267 (S. D. Md.)
 - Posed <u>protection of endangered species</u> against <u>development of renewable energy resources</u>. ESA prohibits the "taking" of any endangered species.
 - Challenge to proposed wind farm in Greenbrier County, WV, on grounds it would result in an unlawful "take" of endangered Indiana bat.
 - Allowed completion of 40 turbines, prevented remaining 84.
 Use of turbines allowed only during bat hibernation.
 - Court recommended "incidental take" permit.

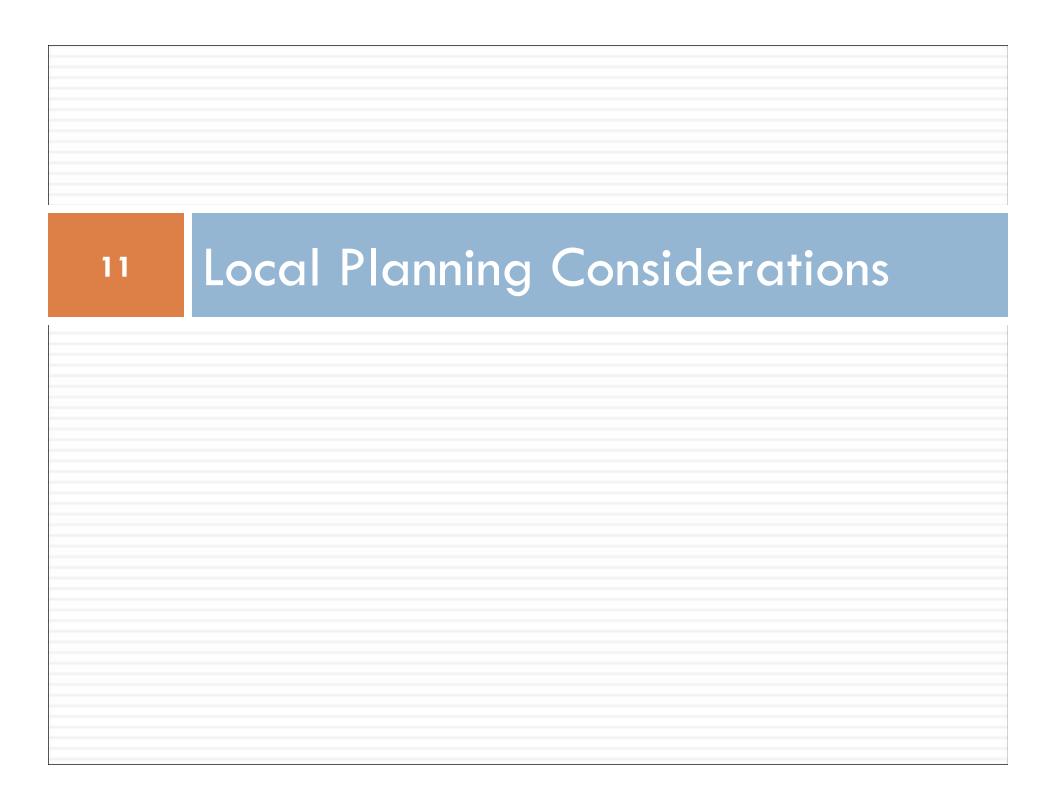
Legal Challenges

- Migratory Bird Treaty Act: potential
 - Protects migrating species from killing, incidental "takes"
 - Avian kills from wind turbines: 20-30K in 2003; $\frac{1}{4}$ million future estimate; compare to $\frac{1}{2}$ billion from buildings
 - U.S. v. Corbin Farms, 444 F. Supp. 510 (ED Cal. 1978)
 - No intent to kill required strict liability if could reasonably foresee harm due to activity. Act not limited to controlling hunting.
 - U.S. v. Moon Lake Electric Assn., 45 F. Supp. 2d 1070 (D. Col. 1999)
 - Power company liable for electrocution of raptors
 - Activity was inherently dangerous and harm foreseeable

Legal Challenges

Wind Farm Nuisance Rulings

- Burch v. Nedpower Mountain Storm, LLC, 647 S.E.2d 879(W. Va. 2007)
 - Recognized nuisance claims against an energy company proposing a wind farm approved by the state PSC: noise impacts, flicker from the blades, broken blades, ice throws, falling towers, and diminution in property values.
- Rankin v. FPL Energy, LLC, 266 S.W. 3d 506 (Tex. App. 2008)
 - Rejected nuisance claim against existing wind farm based on aesthetic impacts. Recognized that nuisance claim could be based on invasion of property by light, sound, odor, or foreign substance.



Local Planning Considerations

- Avoid Nuisance Impacts with Proper Siting
 - Noise / Flicker shadow/Ice throw separation of uses
 - Wildlife keep out of critical habitat
- Construction Impacts
 - Large, heavy vehicles on local roads
 - Site disturbance



Local Planning Considerations

- Overall Community Impacts
 - Revenues & cost of services
 - Energy generation/unit land area
 - Design of access roads
- Private Property Values
 - Studies: no decrease in area
 - Nuisance impacts can decrease
 - Leases benefit individual owners

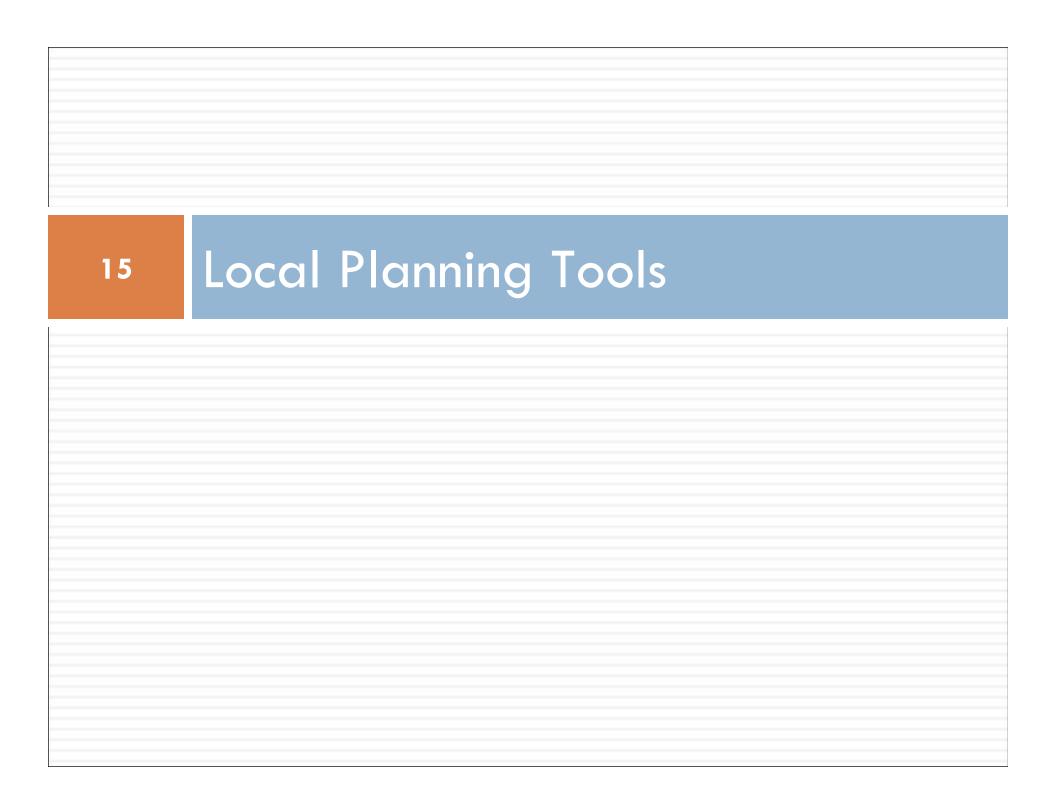




Local Planning Considerations

- Timing of Development
 - Adequate duration of approval
 - □ Flow of revenue & expenditures
 - Phases, expectations
- "Fit" with the Community
 - Existing and desired future uses
 - Views, character
 - Community Plan policies





Local Planning Tools

- Zoning Regulations
 - Zoning districts where allowed
 - Minimum use standards
 - Sound
 - Appearance
 - Location, buffers
 - Conditional use permits
 - Public notice and hearings
 - Address site-specific issues
 - Educate: dispel myths, fear



Local Planning Tools

- Development Agreements
 - Complement zoning & permits
 - Address wider range of issues
 - Timing/phasing
 - Road construction/restoration
 - Liability insurance
 - Mediation of conflicts
 - Successor owners
 - Decommissioning (controversial)



Thank You

All images
courtesy of
National
Renewable
Energy
Laboratory,
except as
otherwise
indicated

