WIND POWER SITING, INCENTIVES, AND WILDLIFE GUIDELINES IN THE UNITED STATES

Wind Farm – Sherman County, OR

ASSOCIATION of FISH & WILDLIFE AGENCIES

U.S. FISH & WILDLIFE SERVICE
DEPARTMENT OF THE INTERIOR

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Research Conducted by:

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EXECUTIVE SUMMARY

Wind energy is an increasingly important renewable energy source and offers promise for contributing to renewable energy portfolios to reduce greenhouse gas emissions from carbon-based sources. While many believe that wind energy is environmentally benign, there can be costs to wildlife and essential habitats.

This report details the current status of wind siting regulations, incentives for wind energy development, and wind siting guidelines for wildlife issues in the United States. In addition, a review was conducted on which states had "little NEPA's" (state environmental policy acts with similar environmental assessment provisions to the National Environmental Policy Act) to determine if there was any additional environmental review requirements that wind development would be subject to. The report is intended to provide baseline information about these issues as state and federal natural resource managers assess ways to proactively address concerns about the impacts to wildlife from wind development.

Because of the growing interest in renewable energy, wind power siting processes are developing rapidly with legislative or regulatory changes occurring regularly across the country. Every effort was made to make this report as accurate as possible. The contents of this report are the results of a survey of state fish and wildlife agencies as well as independent research. The results were made available for review by the state fish and wildlife agencies to verify the results and the contents are believed to be accurate as of October 26, 2007.

OVERVIEW OF STATE WIND POWER SITING PROCESSES

States vary widely in their approach to the wind power siting process. The two most common approaches are through the state's public utilities commission (or similar name) or the local communities that may or may not have zoning requirements. However, since wind development is a new issue in many cases or if there is limited wind potential in the state, there is often no specific process for wind development. Only six states – Colorado, Minnesota, North Dakota, Oregon, South Dakota and Vermont – had wind specific siting authority at the time of this review.

Typically, if a development will exceed a certain size it will fall under the jurisdiction of the utilities commission; however the threshold for consideration varies widely. In states that have a longer history of wind development, the threshold might be lower. For instance, the Public Utilities Commission in Colorado has jurisdiction over wind facilities that are greater than 2 megawatts (MW) or has a structure greater than 50 feet tall. In Minnesota, the Public Utilities Commission regulates large wind energy conversion systems which are defined as greater than 5 MW. Connecticut's Siting Council is responsible for renewable energy facilities greater than 1 MW. In contrast, New Mexico's Public Regulation Commission does not have wind-specific regulatory authority and the threshold for PRC review of energy generating facilities is 300 MW. Arizona, Massachusetts and Wisconsin also do not have wind-specific authority and the threshold for review of energy facilities in these states is 100 MW. If a facility does not fall within the threshold of consideration by the utility commission, it often will fall to local jurisdiction for review or there may be no specific siting regulation.

In nearly a quarter of states, wind siting is managed by local jurisdictions. In many cases, local zoning or planning regulations impact wind siting and often there is state-based environmental permitting as well. However, in rural counties there may be no zoning or planning authority.

OVERVIEW OF STATE ENVIRONMENTAL POLICY ACT APPLICABILITY TO WIND POWER SITING

Currently, there are sixteen states that have a state environmental policy law that requires some form of environmental assessment. The laws vary as to what types of projects trigger environmental impact analysis - some only require review for state agency or state funded projects, others also require review for any project that requires a state permit, license or certificate and some laws also impact local government projects as well. The latter two categories are the primary way that wind development would require environmental assessment, or if the development receives some state funding through one of the incentives available. A short list of these states, the name of the law, the code and the year enacted is below. A more detailed review of each of these laws and its applicability to wind is included in the wind summaries by state.

States with Environmental Policy Acts

California Environmental Quality Act - California Public Resources Code Division 13 §§21000 to 21177, CA Code of Regulations Chapter 13 §§15000 to 15387, 1970

Connecticut Environmental Policy Act - Connecticut General Statutes, Title 22a, Ch. 439, §§ 22a-1 to 22a-1i , §§ 22a-1a-1 to 22a-1a-12, 1972

Georgia Environmental Policy Act - Official Code of Georgia Annotated, Ch. 12-16 (12-16-1 to 12-16 23), Ch. 391-3-16, 1991

Hawaii Environmental Impact Statement law - Hawaii Revised Statutes, Ch. 343, Hawaii Administrative Rules (HAR), Title 11, Ch. 200, 1974

Indiana Environmental Policy Act - Indiana Code Title 13, Art. 12 Ch. 4 (13-12-4-1 through -10), 329 Indiana Administrative Code (IAC) Art. 5, Rules 1

Maryland Environmental Policy Act - Annotated Code of Maryland, Natural Resources Title, Subtitle 3, §§ 1-301 to 1-305, State departments have developed their own regulations (e.g. Dept. of Transportation is COMAR 11.01.08.01 to .08), no specific guidelines in DNR title., 1974

Massachusetts Environmental Policy Act - Mass. General Laws, Title III, Ch. 30, §§61, 62-62H, 301 CMR 11.00, 1977

Minnesota Environmental Policy Act - Minnesota Statutes, Ch. 116D, Minnesota Rules, Ch. 4410, 1973

Montana Environmental Policy Act - MCA Title 75, C. 1, Pts. 1-3, Administrative Rules of Montana (ARM) Ti. 17, Ch. 4, Subch. 6: 17-4-601 through 17-4-636, 1971

New Jersey, Executive Order 215 (Kean, 1989) - §§ 7:22-10.1 to 7:22-10.12 of the NJ Administrative Code provides the guidelines on environmental assessment for projects receiving state funding, 1989

New York State Environmental Quality Review Act - Environmental Conservation Law Sections 3-0301(1)(B), 3-0301(2)(M) and 8-0113, 6 NYCRR Part 617, 1978

North Carolina Environmental Policy Act (SEPA) - North Carolina General Statutes, Ch. 113A, §§ 113A-1 to 113A-13, North Carolina Administrative Code, Title 15a, Ch. 01, Subch. 01C.0101-0411 (1 NCAC 25, 1971

South Dakota Environmental Policy Act - South Dakota Codified Laws, 34A9-1 through 34A9-13, 1974

Virginia - Code of Virginia §10.11188 through 1192, 1973

Washington State Environmental Policy Act - Revised Code of Washington 43.21C, Washington Administrative Code 197-11, 1971

Wisconsin Environmental Policy Act - Wisconsin Statutes, Ch. 1, 1.11(1) through 1.11(5), Wisconsin Administrative Code, NR 150.01 through NR 150.40, 1972

In researching state environmental review law, eight additional states had a similarly named law (e.g. [State] Environmental Quality Act, [State] Environmental Improvement Act, etc.) that did not include any provisions requiring environmental assessment. Typically these laws were created to establish the state's environmental agency and/or to establish its permitting authority. A list of these states and the code is below.

States with similarly named Acts with no assessment provisions

Arizona Environmental Quality Act - Arizona Administrative Code Title 18

Idaho Environmental Protection and Health Act - Idaho Code §39-101 et seq, 1972

Illinois Environmental Protection Act - 415 ILCS 5/, 1970

Maine Site Location of Development Law - MRSA Title 38 Chapter 3 Subchapter 1 Article 6 §§481 to 490

Michigan Natural Resources and Environmental Protection Act - Act 451 of 1994 Articles I-IV, 1994

New Mexico Environmental Improvement Act - 74-1-1 to 74-1-10 New Mexico Statutes Annotated, 1978

Oklahoma Environmental Quality Act - Oklahoma Statutes Title 27A 1-3-101, 1993

Wyoming Environmental Quality Act - Wyoming Statutes, Title 35 Chapter 11

OVERVIEW OF STATES WITH WIND/WILDLIFE GUIDELINES

In review of state fish and wildlife agency response to wind power siting, it is apparent that this is a relatively new issue for most agencies and that the majority can provide suggestions to developers but most existing guidelines are voluntary. Some states' guidelines were developed primarily by the fish and wildlife agency and focused entirely on wildlife issues, while others included wildlife recommendations among guidelines ranging from public safety and recreational considerations to sound and visual impacts.

Only three states currently have mandatory siting requirements through provisions within their power siting authority's regulations. Maryland was poised to be the fourth state with mandatory guidance, however a law passed in early 2007 exempted most wind development (projects 70 MW or less) from review by the Public Service Commission; whether Maryland's proposed guidelines will be approved by the PSC is now in question.

There are twelve States that have final or near-final voluntary guidelines that were available for review and analysis for this report. These ranged from Ohio's that outlined the Department of Natural Resources permitting authorities, to California's draft guidelines that take a comprehensive look at all stages of wind development with detailed recommendations. Four states are in the process of developing guidelines but have not made them available publicly prior to the writing of this report. And four states use the U.S. Fish & Wildlife Service's interim guidelines when addressing wind development.

Finally, five states approached siting that is largely handled by local jurisdictions by developing model zoning requirements. These documents provided recommendations or existing examples of how local governments are already approaching the issue.

Only one state, Kansas, has a position statement on wind power siting (Kansas also has existing guidelines and a model zoning publication).

States with Mandatory siting requirements through siting rules

Colorado
Oregon
West Virginia

States with Final or Near-Final Voluntary Guidelines

Arizona - *Wind Energy Development Guidelines*, Final - July 2006.

California - *California Guidelines for Reducing Impacts to Birds and Bats from Wind Energy Development* (pub # CEC-700-2006-013-SD), Final – September 14, 2007.

Iowa - *Wind Energy and Wildlife Resource Management in Iowa - Avoiding Potential Conflicts*, Final – October 2007

Kansas - *Siting Guidelines for Windpower Projects in Kansas*, Kansas Renewable Energy Working Group, Final - April 2005.

New Hampshire - *Proposed guidance for wind siting permitting process*. Preliminary draft submitted by Wind Energy Facility Siting Guidelines Working Group on May 29 2007 to NH Energy Policy Committee Wind Siting Subcommittee for review. Focuses only on guidelines for permitting process and does not include post-construction mitigation or operational surveys.

New Mexico - *Impacts of Wind Energy Development on Wildlife*, January, 2004

Pennsylvania - *Standardized Site Assessment and Monitoring Procedures Regarding Bats/Birds and Wind Power Development; Mortality Studies Guidance*, Final

South Dakota - *Siting Guidelines for Wind Power Projects in South Dakota*, Final

Vermont - *Guidelines for the Review and Evaluation of Potential Natural Resources Impacts from Utility-Scale Wind Energy Facilities in Vermont*, Draft - April 2006

Washington - *Washington State Wind Power Guidelines*, Final - August 2003

Wisconsin - *Considering Natural Resource Issues in Wind Farm Siting in Wisconsin*, Final – August 2005.

Guidelines in place but do not include prescriptive siting recommendations

Ohio - The Ohio Department of Natural Resources' (DNR) guidance is a comprehensive list of DNR authorities that may be related to the location and operation of wind power generating facilities. For larger projects, a report containing detailed location maps, construction activities, an environmental/biological assessment is usually sent to the DNR by Ohio's Power Siting Coordinator in the Public Utilities Commission of Ohio.
Final - August 29, 2005

States with Model Zoning

Hawaii
Kansas
Massachusetts
Michigan - *Michigan Siting Guidelines for Wind Energy Systems*, Final - December 2005
Oregon

States that use the US Fish and Wildlife Service interim guidelines or other state's guidelines

Nevada
Montana
North Dakota
Oklahoma

States with Draft Guidelines not available for review

Indiana
Maine
New York
Texas

States with Wind Position Statements

Kansas

Notes:

State Data on Installed Utility-Scale Wind Power Capacity from the **American Wind Energy Association** as of June 30, 2007 (http://www.awea.org/projects/).

State Data on Renewable Portfolio Standards and Renewable Energy Incentives from **Database of State Incentives for Renewable Energy** (www.dsireusa.org).

ALABAMA

BACKGROUND

Contact: Gary Moody, Gary.Moody@dcnr.alabama.gov

Installed Utility Scale Wind Power: None

INCENTIVES FOR WIND DEVELOPMENT

Renewable Portfolio Standard: No

Incentives for Industrial or "Big Wind" Production:
None

Incentives for Residential and "Small Wind" Production:
TVA Green Power Switch Partners Program - $500 plus $.15/kWh (residential/small-commercial) or $0.20/kWh (large commercial) to purchase entire production of renewable power including wind; systems must be 50 kW or less.

Interconnection and Net Metering Standards:
No net-metering/interconnection standards

ENERGY SITING PROCESS

Power Siting Authority: No state agency regulates wind power in the state. Wind potential is limited and not a focus of the state renewable energy program. Utilities seeking to build a generation plant have to file with the Alabama Public Service Commission for a Certificate of Public Convenience and Necessity. The jurisdiction of the Commission is limited to investor-owned utilities providing retail service to the public. However, air permits are required from the Department of Environmental Management.

Wind Specific Siting Authority? No

WILDLIFE GUIDELINES FOR WIND

Wildlife Guidelines for Wind Power Siting: No Guidance

ALASKA

BACKGROUND

Installed Utility Scale Wind Power: 2 MW

INCENTIVES FOR WIND DEVELOPMENT

Renewable Portfolio Standard: No

Incentives for Industrial or "Big Wind" Production:
Power Project Loan Fund - Loans from state to local governments, local utilities and independent power producers for development or upgrade of small scale power production facilities that use renewables including wind.

Incentives for Residential and "Small Wind" Production:
Golden Valley Electric - Sustainable Natural Alternative Program (SNAP) - up to $1.50/kWh to purchase all power from small (max 25 kW) systems including wind.

Interconnection and Net Metering Standards:
No net-metering/interconnection standards.

ENERGY SITING PROCESS

Power Siting Authority: Regulatory Commission of Alaska provides a Certificate of Public Convenience and Necessity to any utility that provides electricity (and other utility service) to ten or more people. This is not a siting review, but if a facility was to be used commercially without choosing to be unregulated it would need to go through this process. Smaller facilities or city utilities would be regulated at the municipal level. Most siting decisions would also be made at the local level.

Wind Specific Siting Authority? No

WILDLIFE GUIDELINES FOR WIND

Wildlife Guidelines for Wind Power Siting: No Guidance

ARIZONA

BACKGROUND

Contact: Ginger Ritter, Arizona Game and Fish Dept.-WMHB, 602-789-3606, GRitter@azgfd.gov

Installed Utility Scale Wind Power: None

INCENTIVES FOR WIND DEVELOPMENT

Renewable Portfolio Standard: Yes -15% by 2025

Incentives for Industrial or "Big Wind" Production:
Corporate (commercial, industrial, schools, etc.) tax credit of 10% of installation cost up to $25,000 per building and $50,000 in total credits in one year.

Incentives for Residential and "Small Wind" Production:

- Sales tax exemption for the retail sale and installation by contractors of "solar energy devices" which is defined to include wind electric generators and water pumps.
- Arizona's Solar Energy Credit provides an individual taxpayer with a credit for installing a solar or wind energy device at the taxpayer's Arizona residence, a credit of 25% of the cost of a solar or wind energy device, with a maximum limit of $1,000 is allowed against the taxpayer's personal income tax.

Interconnection and Net Metering Standards:
The state's utilities individually developed distributed generation interconnection agreements prior to the Arizona Corporate Commission's current proceeding to establish statewide standards. The utilities' net-metering varies by utility, but generally relates to systems of 10 kW or less.

ENERGY SITING PROCESS

Power Siting Authority: Arizona Power Plant and Transmission Line Siting Committee provides a Certificate of Environmental Compatibility (CEC) to build power plants of 100 MW or more. Smaller facilities are handled at the county level.

Wind Specific Siting Authority? No

Code or Regulations: APPLSC Authority: Arizona Revised Statute - 40-360.01. Criteria for Certificate for Environmental Compatibility - ARS § 40-360.06

Role of State Fish & Wildlife Agency: The Arizona Game & Fish Department reviews all CECs. However most proposed wind facilities are less than 100 MW, which does not require a CEC.

Therefore, the Department is working with counties and the AZ State Land Department to get wildlife concerns incorporated into decisions.

How are wildlife laws applied: Same as any other development project; plans are analyzed for consistency with Commission and Department policies, management plans, and programs regarding the protection and conservation of fish and wildlife resources. The state provides project specific recommendations but does not have the authority to require mitigation.

WILDLIFE GUIDELINES FOR WIND

Wildlife Guidelines for Wind Power Siting: Wind Energy Development Guidelines

Lead Agency on Guidelines: Arizona Game & Fish Department

Status of Wildlife Guidelines: Final - July 2006

Summary of Guidelines: Voluntary guidelines provide recommendations for minimizing the potential impacts of wind development on wildlife and their habitats. The guidance recommends a three year baseline survey, at various times of the year, prior to construction to assess the level of impact to wildlife and their habitats as well as an invasive species management plan. Outlines considerations for site placement, habitat fragmentation, power transmission, tower configuration, and tower design that should be addressed in the pre-construction phase. Describes steps to undertake during construction to reduce disturbance to habitats and wildlife including siting on previously disturbed areas, avoiding building during breeding periods, etc. Post-construction recommendations include conducting a three-year monitoring plan to assess movement, mortality, behavior changes, and abundance of local species for potential future facility design modifications to reduce impacts.

Web site for Guidelines: http://www.azgfd.gov/hgis/pdfs/WindEnergyGuidelines.pdf

	Detailed Summary of Arizona's Voluntary Guidelines
Pre-construction survey	Requires a three-year baseline survey to assess the level of impact to wildlife (local and migrating populations) and their habitats. Conduct surveys at various times of the year to assess breeding, wintering, and migrating wildlife use (raptors, bats, songbirds, etc.). Avoid developing in areas of high-density breeding birds or wintering raptors, in high wildlife use areas, or in migration corridors. Create an Invasive Species Management Plan during planning and development of project to address potential impacts from the introduction or spread of invasive species.

Design/Operation Recommendations	Recommends using underground power lines and raptor protective devices on above ground wires. Suggests development in cluster and/or string designs with non-bladed pylons at the ends of large cluster strings. Use tubular towers with lower blade reaches higher than 100 feet and upper blade reaches less than 400 feet tall, unless site-specific observations indicate more optimal tower and blade dimensions. Utilize the minimum blade rpm. Consider reducing the blade rpm during spring and fall bird migration, and nights. Minimize lattice towers with guy wires and use bird flight diverters when guy wires are necessary. Utilize white strobe lights with no more than 24 pulses/minute and a longer "off" phase between the flash phases of the light pulses. Paint the ends of the blades to minimize motion smear. Avoid riprap around towers to reduce prey species that attract raptors.
Site Development Recommendations	Recommends maximizing the use of flat land and gentle slopes; when ridges, canyons, cliffs, and fissures are within the project vicinity, offset the turbines at least 50 meters from the geologic features. Avoid placing strings or clusters of towers close to prairie dog colonies. Minimize the number of new roads constructed and maximize use of existing corridors and roads. Close and rehabilitate any unnecessary roads after completion of the project. Roads and rights-of-way that provide access to critical wildlife habitat should be designed for easy and effective closure. Gates should be installed at onset of construction and closed immediately after completion of the project. Temporary roads should be obliterated and re-vegetated immediately after construction. If possible, use agriculture lands or other disturbed areas.
Consultation with wildlife agency, USFWS	Recommends that developers of wind towers on private property should consider entering into a Habitat Conservation Plan with the U.S. Fish and Wildlife Service (USFWS) for the possibility of violating the Endangered Species Act, Migratory Bird Treaty Act, and the Bald and Golden Eagle Protection Act. Also recommends consulting with AZ Department of Agriculture to minimize impacts to native plants.
Mitigation requirements	None
Post-Construction/ Operational Surveys	A three-year monitoring plan should be developed to assess movement, mortality, behavior changes, and abundance of local species. Developers should control noxious weeds using approved herbicides and eliminate use of rodenticides to reduce concentrations of rodent populations on the perimeter of the facility. Current research recommends development of a Fire Management Plan.
Decommissioning	

ARKANSAS

BACKGROUND

Installed Utility Scale Wind Power: 0.1 MW

Renewable Portfolio Standard: No

INCENTIVES FOR WIND DEVELOPMENT

Incentives for Industrial or "Big Wind" Production:
None

Incentives for Residential and "Small Wind" Production:
None

Interconnection and Net Metering Standards:
Net-metering program that allows interconnection of residential renewable systems up to 25 kW and nonresidential systems up to 300 kW.

ENERGY SITING PROCESS

Power Siting Authority: Small wind power is regulated by local jurisdictions through zoning and land use regulations. Major utility facility construction is authorized by a Certificate of Public Convenience and Necessity issued by the Arkansas Public Service Commission.

Wind Specific Siting Authority? No

Code or Regulations: Arkansas Public Service Commission siting authority: (Ark, Code Ann. §23-3-201 et seq.)

WILDLIFE GUIDELINES FOR WIND

Wildlife Guidelines for Wind Power Siting: No Guidance

CALIFORNIA

BACKGROUND

Contact: Scott Flint, California Department of Fish & Game, sflint@dfg.ca.gov

Installed Utility Scale Wind Power: 2376 MW

INCENTIVES FOR WIND DEVELOPMENT

Renewable Portfolio Standard: Yes - 1% increase per year to achieve 20% by 2010 - Governor has set goal of 33% by 2020.

Incentives for Industrial or "Big Wind" Production:
The California Energy Commission awards production-based incentives, referred to as Supplemental Energy Payments (SEPs), to eligible renewable energy generators for the above-market costs of renewable resources selected by investor-owned utilities – PG&E, SDG&E, and SCE – to fulfill their Renewables Portfolio Standard (RPS) obligations. Funded at approximately $70 million per year.

Incentives for Residential and "Small Wind" Production:
- Emerging Renewable Program - The California Energy Commission provides cash incentives for the installation of grid-connected small wind turbines (up to 50 kW): $2.50/W for first 7.5 kW and $1.50/W for increments > 7.5 kW and < 30 kW.
- Self-Generation Incentive Program provides incentives to customers who produce their own power, includes wind turbines (minimum of 30 kW) @ $1.50/W.

Interconnection and Net Metering Standards:
California specifies standard interconnection, operating and metering requirements for distributed generation (DG) systems up to 10 megawatts (MW) in capacity, including renewables, with separate simplified rules for small renewables under 10 kilowatts (kW). Net metering in California applies to renewable-energy systems up to 1 MW in capacity and includes provisions for time-of-use (TOU) net metering.

ENERGY SITING PROCESS

Power Siting Authority: Local agencies issue land use permits for wind energy

Wind Specific Siting Authority? No

Code or Regulations: California Environmental Quality Act (CEQA) requires state and local agencies to assess environmental impacts of proposed actions they undertake or permit.

Role of State Fish & Wildlife Agency: For wind energy projects subject to CEQA, lead agencies are required to consult with the California Department of Fish and Game (CDFG). In addition to CDFG's responsible and trustee roles in the CEQA process, direct consultation with CDFG is required to ensure that a proposed project will meet the intent of Fish and Game Code statutes for protection of wildlife species, including the California's Fully Protected Species Act and the California Endangered Species Act. CDFG cannot approve or disapprove a project but lead agencies are required to consult with the Department.

How are wildlife laws applied: Plans are analyzed for consistency with Commission and Department policies, management plans, and programs regarding the protection and conservation of fish and wildlife resources.

STATE ENVIRONMENTAL POLICY ACT

California Environmental Quality Act - California Public Resources Code Division 13 §§21000 to 21177, CA Code of Regulations Chapter 13 §§15000 to 15387, 1970

Overview:
An Environmental Impact Report (EIR) is required if there is a fair argument based on substantial evidence that the project may have a significant effect on the environment. An EIR is a detailed statement that describes and analyzes the significant environmental effects of a project and discusses ways to mitigate or avoid the effects. CEQA requires that an EIR consider a range of feasible alternatives that meet most of the objectives of the project and that the significant effects on the environment be mitigated to the extent feasible.

Projects Affected by Law:
Applies to public works (on state land or using state money, etc.) as well as private projects that require a permit from the state.

Public Participation Provisions:
CEQA requires that the public have notice and an opportunity to comment on any negative declaration, mitigated negative declaration, or EIR prepared under CEQA. If an EIR is prepared, the lead agency must prepare written responses to the comments.

Applicability to Wind Development?
Local Governments have wind siting jurisdiction and are subject to CEQA

Implementing Agency:
CEQA is a self-executing statute. The Resources Agency is charged with the adoption of CEQA Guidelines and may assist public agencies in the interpretation of CEQA, but does not enforce CEQA, nor does it review the many state and local agency actions which are subject to CEQA for compliance with the law.

WILDLIFE GUIDELINES FOR WIND

Wildlife Guidelines for Wind Power Siting: California Guidelines for Reducing Impacts to Birds and Bats from Wind Energy Development (pub # CEC-700-2006-013-SD)

Lead Agency on Guidelines: California Energy Commission in collaboration with CA Dept. of Fish & Game

Status of Wildlife Guidelines: Final – September 14, 2007

Summary of Guidelines: Voluntary guidelines provide information to help reduce impacts to birds and bats from new development or repowering of wind energy projects in California. Provides science-based reference for CA counties, cities and public utilities that permit wind energy projects. Include recommendations on preliminary screening of proposed wind energy project sites; assessing direct, indirect, and cumulative impacts to birds and bats in accordance with state and federal laws; developing avoidance and minimization measures; establishing appropriate compensatory mitigation; facilitating completion of the permitting process; and operations monitoring, analysis and reporting methods.

Web site for Guidelines: http://www.energy.ca.gov/2007publications/CEC-700-2007-008/CEC-700-2007-008-CTF.PDF

	Detailed Summary of California's Voluntary Guidelines
Pre-construction survey	Recommends a site-screening and a pre-permitting study plan to assess the site's sensitivity and species-specific data to evaluate a wind energy project's potential impacts to birds and bats. From site screening, sites will fall into one of four categories 1) project sites with available wind-wildlife data, where pre-siting evaluations could be completed in less than one year 2) project sites with little existing information and no indicators of high wildlife impacts, where pre-permitting surveys should last a minimum of one year 3) project sites with high or uncertain potential for wildlife impacts, where surveys in excess of one year are likely to be needed and 4) project sites inappropriate for wind development. Outlines detailed standards for acceptable surveys including bird use counts and raptor nest searches for diurnal birds, radar, acoustic monitoring, and visual monitoring for nocturnal migratory birds, and one year of acoustic monitoring for resident or migratory bats.
Design/Operation Recommendations	Provides recommendations for developing infrastructure at facilities to reduce or avoid impacts including appropriate turbine design and layout, reducing artificial habitat for prey at turbine base area, avoiding lighting that attracts birds and bats, minimizing power line impacts by placing lines under ground whenever possible, avoiding using structures with guy wires, and decommissioning non-operational turbines.

Site Development Recommendations	Recommends minimizing fragmentation and habitat disturbance. Suggests establishing buffer zones to minimize collision hazards (for example, avoiding placement of turbines within 100 meters of a riparian area).
Consultation with wildlife agency, USFWS	Recommends consultation with the U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Game (CDFG), CEQA lead agency, and other appropriate stakeholders during the site-screening, pre-permitting assessment phase in order to gather information and establish contacts with key individuals and organizations. For development of effective compensation measures, the guidelines recommend involving the CEQA lead agency, project proponent, wildlife agencies, and the affected public stakeholders through the CEQA process.
Mitigation requirements	Where planning and construction measures are insufficient to avoid or minimize estimated impacts to birds and bats, compensation can be used to mitigate or offset the impacts, including cumulative impacts. Recommends consultation with CDFG, USFWS, and species experts to develop site-specific ratios and fees to use for compensation formulae. Compensation typically involves purchase of land through fee title or conservation easements and the permanent protection of the biological resources on these lands. Recommends establishing a range of compensatory mitigation options to offset high levels of unexpected fatalities that consider operational and facility changes such as habitat modification, seasonal changes to cut-in speed, limited and periodic feathering of wind turbines during low wind nights, seasonal shutdowns, or removal of problem turbines.
Post-Construction/ Operational Surveys	In most situations, two years of operations monitoring is needed so that carcass counts and bird and bat use data can be collected in spring, summer, fall, and winter and capture variability between years. Category 1 projects need a minimum of one year of operations monitoring to assess whether pre-permitting impact estimates were as low as expected, and to evaluate the effectiveness of mitigation measures. Category 2 and 3 projects need the full two years of operations monitoring. Results of the first year of data should be assessed to determine whether modifications to the second year of study are warranted. Outlines specific survey needs for number of carcass search plots (at least 30% or turbines), search plot size (search width is equal to the maximum rotor tip height), search protocol, frequency of carcass searches (generally every 2 weeks for 2 years), searcher efficiency trials, seasonal carcass removal (scavenging) trials, bird and bat metrics, monitoring reports, bird use counts and bat acoustic monitoring.

Decommissioning	As part of permitting applications, developers should submit a decommissioning and reclamation plan that describes the expected actions when some or all of the wind turbines at a wind energy project site are non-operational. Decommissioning a project typically involves removal of turbine foundations to three feet (one meter) below ground level and removal of access roads, unnecessary fencing, and ancillary structures. The decommissioning plan should also include documentation showing financial capability to carry out the decommissioning and restoration requirements, usually an escrow account, surety bond, or insurance policy in an amount (approved by the lead agency) sufficient to remove the wind turbines and restore the site.

COLORADO

BACKGROUND

Contact: Tom Blickensderfer, CO Department of Natural Resources, (303)866-3157, t.blick@state.co.us

Installed Utility Scale Wind Power: 366 MW

INCENTIVES FOR WIND DEVELOPMENT

Renewable Portfolio Standard: Yes - 3% for 2007; 5% for the years 2008 to 2010; 10% for the years 2011 to 2014; 15% for the years 2015 to 2019 and 20% for 2020 and beyond.

Incentives for Industrial or "Big Wind" Production:
Renewable-energy facilities installed are assessed property taxes as though their installed costs were comparable to those of nonrenewable-energy facilities. The incremental value of the renewable facilities above the nonrenewable facilities is disregarded. 2007 Assessment Cost Threshold is $627/kW up to 100 MW and $533/kW between 100 and 250 MW.

Incentives for Residential and "Small Wind" Production:

- Counties and municipalities are authorized to offer property or sales tax rebates or credits to residential and commercial property owners who install renewable energy systems on their property (enacted in April 2007).
- Gunnison County Electric Association provides a loan of up to $25,000 over 10 years for installation of renewable energy including wind.
- Holy Cross Energy's WE CARE (With Efficiency, Conservation And Renewable Energy) Program offers a $2.00-per-watt DC incentive for renewable energy generation including wind. Payments are not to exceed 50% of actual installed costs, and the maximum rebate per installation is $50,000.
- LaPlata Electric Renewable Generating Program provides one-time cash rebate to residential customers installing grid-connected renewable energy including wind - $2 per watt up to $2000.
- Qualified schools (criteria are statutory) may apply to the Wind for Schools grant program if authorized by their local board of education, through the Office of Energy Management and Conservation (adopted in 2007), for up to $5000 total to offset the costs of generating electricity for schools using wind turbines.

Interconnection and Net Metering Standards:
The Colorado Public Utilities Commission (PUC) net metering and interconnection standards apply to all qualifying retail utilities (QRUs) that serve 40,000 or more customers. Systems up to two megawatts (MW) in capacity that generate electricity using qualifying renewable-energy resources are eligible for net metering.

ENERGY SITING PROCESS

Power Siting Authority: Public Utilities Commission regulates 1) "Eligible Renewable Energy Resources" (as defined CCR Sub Document 3650(f)); 2) Larger than 2 MW; 3) Structure exceeding over 50 feet in height. Counties have addressed siting through County Master Plans. Included in this are master planning statutes for "location and extent" of public utilities, access to alternate energy facilities and location of "areas containing…..endangered or threatened species"

Wind Specific Siting Authority? Yes

Code or Regulations: Code of Colorado Regulations for Public Utilities Commission; 4 CCR 723-3656(b)(c),Colorado State Statutes re: County Master Plans: 30-28-106(3)(a)(III) C.R. S.; 30-28-106(3)(a)(VI) C.R.S.; 30-28-106(3)(a)(XI)(B) C.R.S

Role of State Fish & Wildlife Agency: PUC is required to consult with Colorado Division of Wildlife and U.S. Fish & Wildlife Service.

How are wildlife laws applied: Broad statutory authority to the Colorado Wildlife Commission and the Colorado Division of Wildlife to investigate populations and habitat needs of species and to promulgate rules and regulations to implement management programs in order to insure perpetuation of wildlife species. State can require mitigation for wildlife (game, non-game and threatened, endangered, and species of concern).

WILDLIFE GUIDELINES FOR WIND

Wildlife Guidelines for Wind Power Siting: Siting Authority serves as specific requirements for wildlife impact studies.

Lead Agency on Guidelines: CO Division of Wildlife

Status of Wildlife Guidelines: Current

Summary of Guidelines: Mandatory guidelines contained within PUC Rule require consultation with Colorado Division of Wildlife and U.S. Fish and Wildlife Service. Developers must provide certification of site-specific avian surveys conducted on facility site and verification that surveys are used in design, placement and management of facilities for state or federal listed species, sites shown to be local bird migration pathways and critical habitat and areas where birds or other wildlife are highly concentrated and are considered at risk.

Web site for Guidelines: www.sos.state.co.us/CCR

	Detailed Summary of Colorado's Siting Rule
Pre-construction survey	Before achieving commercial operation, the Qualified Retail Utility's Renewable Energy Supply Contract requires project developers to certify that the developer has performed and made publicly available site specific avian and other wildlife surveys conducted on the facility's site prior to construction. Developers are required to certify that they used the survey results in the design, placement, and management of the facilities to ensure that the environmental impacts of facility development are minimized to state and federally listed species and species of special concern, sites shown to be local bird migration pathways, critical habitat and areas where birds or other wildlife are highly concentrated and are considered at risk. These rules only apply to energy resources larger than 2 MW with any wind turbine structures extending over 50' in height.
Design/Operation Recommendations	None
Site Development Recommendations	None
Consultation with wildlife agency, USFWS	Qualified Retail Utilities must require project developers to include written documentation that consultation occurred with appropriate governmental agencies (for example, the Colorado Division of Wildlife or the U.S. Fish and Wildlife Service) responsible for reviewing potential project development impacts to state and federally listed wildlife species, as well as species and habitats of concern.
Mitigation requirements	None
Post-Construction/ Operational Surveys	None
Decommissioning	None

CONNECTICUT

BACKGROUND

Contact: Greg Chasko, Assistant Director, CT DEP - Wildlife Division, 860-424-3494, Greg.Chasko@po.state.ct.us, 79 Elm Street, Hartford, CT 06106

Installed Utility Scale Wind Power: None

INCENTIVES FOR WIND DEVELOPMENT

Renewable Portfolio Standard: Yes - 27% by 2020: 20% Class I resources (including wind); 3% Class I or Class II resources; 4% Class III resources by 2010

Incentives for Industrial or "Big Wind" Production:

- Connecticut Clean Energy Fund (CCEF) Project 100 Initiative requires the state's two electric distribution companies to obtain a total of at least 100 megawatts (MW) of "Class I" renewable energy (projects of at least 1 MW). Pricing under these contracts includes a premium of up to 5.5¢ per kilowatt-hour (kWh).
- The Connecticut Clean Energy Fund (CCEF) Operational Demonstration Program enables early-stage companies to demonstrate the effectiveness of their own near-commercial, clean-energy technologies (capacity of at least 1 kW) that have a high likelihood of developing into a commercial product within a reasonable period of time, projects must have a front-loaded 25% cash cost-share for any funding provided and the maximum amount of funding for each individual award is $750,000.

Incentives for Residential and "Small Wind" Production:

- Connecticut provides a property tax exemption for Class I renewable energy sources installed for the generation of electricity for private residential use provided such installation occurs on or after October 1, 2007 (was not mandatory exemption prior to 10/1).
- CCEF - On-Site Renewable Distributed Generation (DG) Program provides grants to support the installation of systems (including wind - $3.60 per watt; 15-year evaluation timeframe) that generate electricity at commercial, industrial and institutional buildings - maximum individual project award is $4 million.
- Connecticut offers grants and loans to retail end-use customers of electric distribution companies for the installation of customer-side distributed resources (no more than 65 MW, includes small wind turbines) - $450/kW for baseload projects ($500/kW if sited in southwest CT); $200/kW for emergency generators ($250/kW if sited in southwest CT).
- Single-family and Multi-Family Energy Conservation Loans are available through the Connecticut Housing Investment Fund (CHIF), loans range from $400 - $25,000 (1-4 family units) and $2,000 - $60,000 (multi-family of 5+ units); interest rates vary in accordance with the borrower's family size and income and the loan may be repaid over ten years.

Interconnection and Net Metering Standards:
Connecticut has interconnection rules and procedures for all distributed generation (DG) technologies up to 25 megawatts (MW) in capacity. Connecticut requires investor-owned utilities to provide net metering to customers that generate electricity using Class I renewable energy sources up to two megawatts (MW) in capacity, there is no stated limit on the aggregate capacity of net-metered systems in a utility's service territory.

ENERGY SITING PROCESS

Power Siting Authority: Connecticut Siting Council provides a Certificate of Environmental Compatibility and Public Need for electricity generating facilities and regulates facilities 1 MW or larger that are fueled by renewable energy sources. Town planning and zoning will also impact development. State environmental permitting affects development; requirements will vary by location, for example, offshore sites would be governed by Coastal Zone Management authorities.

Wind Specific Siting Authority? No

Code or Regulations: CT Siting Council - General Statutes § 16-50i, Environmental statutes: various sections of Connecticut General Statutes - Titles 22a26 would apply.

Role of State Fish & Wildlife Agency: Towns can consult with CT Dept. of Environmental Protection

How are wildlife laws applied: Energy facility applications must include "a description of the effect that the proposed facility would have" on ecological integrity, wetlands and watercourses, and wildlife and vegetation, including rare and endangered species, critical habitats, and species of special concern, with documentation by the Department of Environmental Protection Natural Diversity Data Base. State can require mitigation if a state permit is required, state listed endangered or threatened species can overrule other factors

STATE ENVIRONMENTAL POLICY ACT

Connecticut Environmental Policy Act (CEPA) **-** Connecticut General Statutes, Title 22a, Ch. 439, §§ 22a-1 to 22a-1i, §§ 22a-1a-1 to 22a-1a-12, 1972

Overview:
For each State action covered by CEPA, the sponsoring agency must make a detailed written evaluation of its environmental impact before deciding to undertake or approve the action. Environmental Impact Evaluations (EIEs) must examine the direct, indirect, and cumulative environmental consequences of the proposed action, and any reasonable alternatives to it. The regulations list a number of factors the sponsoring agency must consider, including impacts on public water supply systems, effects on natural land resources and formations, use of pesticides or toxic or hazardous materials, a substantial increase in traffic, and substantial esthetic or visual effects.

Projects Affected by Law:
Applies to activities (1) proposed by a state department, institution, or agency or (2) funded in whole or in part by the state, that could have a major impact on the state's land, water, air, historic structures and landmarks, existing housing or other environmental resources, or could serve short term to the disadvantage of long-term environmental goals.

Public Participation Provisions:
The legislature added a public "scoping" process to CEPA in 2002 that allows the public to comment on a proposed action before an agency begins the formal EIE process. After completion of an EIE, it is made available for public review; the public has 45 days to comment on an EIE. A public hearing may be held during the public scoping process but it is required if requested by 25 people or a group representing 25 people.

Applicability to Wind Development?
Only if wind project is receives state funding (the state does have incentives for wind power development) or it is on state land.

Implementing Agency:
Department of Environmental Protection, Office of Environmental Review

WILDLIFE GUIDELINES FOR WIND

Wildlife Guidelines for Wind Power Siting: No Guidance

DELAWARE

BACKGROUND

Installed Utility Scale Wind Power: None

INCENTIVES FOR WIND DEVELOPMENT

Renewable Portfolio Standard: Yes - 20% by 2019

Incentives for Industrial or "Big Wind" Production:
The Technology and Demonstration Program, through Delaware's Green Energy Fund, provides grants to projects that demonstrate the market potential for renewable technologies and accelerate the commercialization of these technologies in Delaware; individual grants cannot exceed 25% of the cost of the eligible equipment for a renewable energy technology project and will not exceed $200,000 per project

Incentives for Residential and "Small Wind" Production:
Delaware Green Energy Program Incentives - provides rebate of 50% of installation cost for renewable energy up to $22,500 for residential small wind turbines or $100,000 for non-residential.

Interconnection and Net Metering Standards:
Delmarva and Delaware Electric Cooperative (DEC) offer net metering to residential and small commercial customers with renewable-energy systems up to 25 kilowatts (kW) in capacity, there is no statewide limit on the aggregate capacity of net-metered systems.

ENERGY SITING PROCESS

Power Siting Authority: Delaware's utility grade wind power potential is primarily offshore, this would likely fall under the jurisdiction of the Delaware Department of Natural Resources and Environmental Control (DNREC) through the Coastal Zone Act. Small wind power generation is governed by local zoning ordinances.

Wind Specific Siting Authority? No

Role of State Fish & Wildlife Agency: Permits from Department of Natural Resources and Environmental Control required for components of wind siting.

WILDLIFE GUIDELINES FOR WIND

Wildlife Guidelines for Wind Power Siting: No Guidance but DNREC has included a recommendation in their State Wildlife Action Plan to work with industry to develop standards for the siting of wind towers.

FLORIDA

BACKGROUND

Contact: Julie Rowland, Legislative Affairs Office, Florida Fish & Wildlife Conservation Commission, 850-487-3795, julie.rowland@MyFWC.com, 620 South Meridian Street, Tallahassee, FL 32399-1600

Installed Utility Scale Wind Power: None

INCENTIVES FOR WIND DEVELOPMENT

Renewable Portfolio Standard: Florida does not have an RPS standard in place, but in July, 2007 Florida Governor Charlie Crist signed Executive Order 07-127, entitled "Immediate Actions to Reduce Greenhouse Gas Emissions within Florida". The executive order establishes reduction targets for Greenhouse Gas emissions and requests that the Florida Public Service Commission initiate rulemaking by September 1, 2007 to require that utilities produce at least 20% of their electricity from renewable sources with a strong focus on solar and wind energy.

Incentives for Industrial or "Big Wind" Production:
Florida Renewable Energy Production Tax Credit is a corporate tax credit of $.01/kWh for production of renewable energy (including wind) that is sold to an unrelated buyer.

Incentives for Residential and "Small Wind" Production:
The Renewable Energy Technologies Grants Program provides renewable energy matching grants for demonstration, commercialization, research, and development projects relating to renewable energy technologies. Eligible recipients (must be in-state) include municipalities and county governments; businesses; universities and colleges; utilities; not-for-profit organizations; and other qualified entities; ranking criteria for grant awards includes availability of matching funds, economic development potential, technical feasibility, innovation, long-term production potential, and public visibility, among others.

Interconnection and Net Metering Standards:
Current interconnection and net-metering only applies to photovoltaic systems.

ENERGY SITING PROCESS

Power Siting Authority: There is not significant wind power potential at this time, so no current regulations and local governments would most likely have jurisdiction for small scale projects. Florida DEP, Siting Coordination Office has broad authorities for certification of power plants - these are currently defined as traditional as well as solar power plants 75 MW or greater. Should utility scale wind power opportunities increase, this would be the most likely authority.

Wind Specific Siting Authority? No

Code or Regulations: The Power Plant Siting Act (PPSA), §§ 403.501-.518, F.S.

Role of State Fish & Wildlife Agency: Florida Fish & Wildlife Conservation Commission has joint environmental review with Department of Environmental Protection for utility projects.

How are wildlife laws applied: Same as any other development project. The agency is authorized to collect development-of-regional-impact wildlife mitigation contributions pursuant to § 372.074(2), Florida Statutes, which are directed to the purchase and management of lands important to the conservation of fish and wildlife.

WILDLIFE GUIDELINES FOR WIND

Wildlife Guidelines for Wind Power Siting: No Guidance

GEORGIA

BACKGROUND

Contact: Jim Ozier, Georgia DNR, (478) 994-1438, jim_ozier@dnr.state.ga.us, 116 Rum Creek Drive, Forsyth, GA 21029

Installed Utility Scale Wind Power: None

INCENTIVES FOR WIND DEVELOPMENT

Renewable Portfolio Standard: No

Incentives for Industrial or "Big Wind" Production:
None

Incentives for Residential and "Small Wind" Production:
TVA Green Power Switch Partners Program - $500 plus $.15/kWh (residential/small-commercial) or $0.20/kWh (large commercial) to purchase entire production of renewable power including wind; systems must be 50 kW or less.

Interconnection and Net Metering Standards:
Georgia allows residential electricity customers with photovoltaic systems, wind-energy systems or fuel cells with a maximum capacity of 10 kilowatts (kW), and commercial facilities up to 100 kW, to connect to the grid. A utility is not required to enroll customers beyond 0.2% of its peak load for the previous year.

ENERGY SITING PROCESS

Power Siting Authority: Voluntary review of projects, local governments (through zoning authority or county planning boards) have primary authority. Environmental regulations apply to construction.

Wind Specific Siting Authority? No

Role of State Fish & Wildlife Agency: Department of Natural Resources has a memorandum of understanding with environmental regulator for project review and will provide joint environmental review. May be asked for integrated resource planning.

How are wildlife laws applied: Same as any other development project, State cannot require mitigation.

STATE ENVIRONMENTAL POLICY ACT

Georgia Environmental Policy Act - Official Code of Georgia Annotated, Ch. 12-16 (12-16-1 to 12-16 23), Ch. 391-3-16, 1991

Overview:
The Georgia Environmental Policy Act (GEPA) requires that any proposed governmental action which may "significantly adversely affect the quality of the environment", including the state's air, water, land, plants, and animals, requires an Environmental Effects Report (EER). As outlined in the Act, an Environmental Effects Report describes the environmental impact and any adverse environmental effects of the action, alternative actions, mitigation measures proposed to avoid or minimize impact, and other effects of the action.

Projects Affected by Law:
GEPA applies to state government agency actions, defined in the law to include any state agency action or activity of a city or county whose cost is covered by more than 50 percent with funds from a state government agency or is provided a grant of more than $250,000 by a state agency.

Public Participation Provisions:
At least 45 days before making the decision on the EER, the responsible official must publish in the county where an action is to occur that an EER has been prepared; they must make the report available to the public on request. GEPA allows the responsible official to hold a public hearing at their discretion, however a public hearing is mandatory if at least 100 residents send a written request for a meeting within 30 days of the publication of the EER.

Applicability to Wind Development?
Unlikely since Georgia does not currently have any state funding programs for wind energy incentives.

Implementing Agency:
Department of Natural Resources

WILDLIFE GUIDELINES FOR WIND

Wildlife Guidelines for Wind Power Siting: No Guidance

HAWAII

BACKGROUND

Contact: Paul Conry, Administrator, Division of Forestry and Wildlife, (808) 587-0166, Paul.J.Conry@hawaii.gov

Installed Utility Scale Wind Power: 63 MW

INCENTIVES FOR WIND DEVELOPMENT

Renewable Portfolio Standard: Yes - 20% by 2020

Incentives for Industrial or "Big Wind" Production:
Hawaii Energy Tax Credit - Commercial tax credit of 20% for installation costs of wind systems (up to $500,000 for commercial property).

Incentives for Residential and "Small Wind" Production:
Hawaii Energy Tax Credit - Residential tax credit of 20% for installation costs of wind systems (up to $1500 for single-family units or $200 each for multi-family units).

Interconnection and Net Metering Standards:
Hawaii has simplified interconnection net metering rules for residential and "small commercial" customers (including government entities) with solar, wind, biomass and hydroelectric systems up to 50 kW in capacity. Net metering is available on a first-come, first-served basis to eligible customers until total net-metered capacity equals 0.5% of each utility's peak demand.

ENERGY SITING PROCESS

Power Siting Authority: Most wind facilities are currently small in scale and addressed by local government through zoning. Facilities subject to standard environmental regulating.

Wind Specific Siting Authority? No

Role of State Fish & Wildlife Agency: Permits are required from Hawaii Department of Land and Natural Resources. The State Department of Forestry and Wildlife (DOFAW) will provide general comments to potential site data that can be used to plan renewable energy projects. Historically, DOFAW reviews projects based on its environmental impacts to endangered flora and fauna since most requests occur outside of its primary forestry and wildlife management responsibilities.

STATE ENVIRONMENTAL POLICY ACT

Environmental Impact Statement law - Hawaii Revised Statutes, Ch. 343, Hawaii Administrative Rules (HAR), Title 11, Ch. 200, 1974

Overview:
An environmental review document must be prepared for any proposed project or activity, if one or more of nine specific conditions (called "triggers") is present, and circulated to the public for review. The environmental assessment (EA) is a written evaluation to determine whether the action may have a significant effect on the environment. If the EA finds that the proposed action may have a significant effect on the environment, then an environmental impact statement (EIS) must be prepared. An EIS must, at a minimum, identify environmental concerns, obtain various relevant data, conduct necessary studies, receive public input, evaluate alternatives, and propose measures for minimizing adverse impacts.

Projects Affected by Law:
The Environmental Impact Statement Law has 9 specific "triggers". These include, projects that propose the use of: state or county lands or funds; land in the conservation district; land in the shoreline setback area; any historic site or district; or land in Waikiki must be subject to an environmental review prior to its implementation. Also, any proposed reclassification of conservation land; amendment to a county general plan, any new or expanded helicopter facility; any new or expanded fossil-fueled power generating facility; certain types of facilities (waste-to-energy facilities; landfills, etc.; power generating facilities are included in this list of actions) may trigger an environmental review.

Public Participation Provisions:
The public has 30 days to review and comment on a draft environmental assessment; if there is a finding of no significant impact, the public may challenge an agency's determination within 30 days of the notice of this finding by filing suit in circuit court. A draft EIS is subject to a 45 day review by the public and government agencies after publication in The Environmental Notice of an acceptance or non-acceptance determination of a final EIS by either the accepting authority or the approving agency initiates a 60-day legal challenge period.

Applicability to Wind Development?
Yes, through the actions that list "power-generating facilities" as a trigger for the Enviromental Impact Statement Law.

Implementing Agency:
Office of Environmental Quality Control

WILDLIFE GUIDELINES FOR WIND

Wildlife Guidelines for Wind Power Siting: Guidelines for siting in Conservation District. Hawaii Revised Statutes, Chapter 183C, Hawaii Administrative Rules (HAR), Title 13, Subtitle 1, Chapter 5, Conservation District. These are model zoning guidelines.

	Detailed Summary of Hawaii's Model Zoning Guidelines
Pre-construction survey	The model zoning language includes specific requirements for permits for conservation district land use including construction of any structures including wind energy facilities. The administrative rules require that the applicant demonstrate that the proposed land use will not cause substantial adverse impact to existing natural resources within the surrounding area, community or region and this typically requires preparation of a draft environmental assessment or environmental impact statement. The environmental assessment would identify and assess any potential impacts on the natural environment including, but not limited to threatened and endangered species, wetlands and other fragile ecosystems, historical and cultural sites, and antiquities. Where appropriate, surveys for endangered plants, bats, seabirds, and general avian use should be conducted.
Design/Operation Recommendations	Typically recommends that guide wires and lighting be minimized to avoid light attraction and collision impacts to endangered bats, endangered birds, and seabirds.
Site Development Recommendations	Recommends that clearing of natural vegetation shall be limited to what is necessary for the construction, operation and maintenance of the wind facility and all efforts should be taken to avoid impacts to endangered plant species.
Consultation with wildlife agency, USFWS	Where there are endangered and protected species, requires consultation with State Division of Forestry and Wildlife, and if applicable, receipt of a Habitat Conservation Plan or other take permits from State and U.S. Fish and Wildlife Service (USFWS).
Mitigation requirements	Requires the applicant take appropriate measures to minimize, eliminate or mitigate adverse impacts to the environment, wildlife, threatened and endangered species that are identified in the permit process.
Post-Construction/ Operational Surveys	Can require applicant to conduct post construction and operational surveys for take of any T&E listed species, and report on mitigation efforts.
Decommissioning	The applicant is typically required to restore the site at the end of project life.

IDAHO

BACKGROUND

Contact: Gregg Servheen, Wildlife Program Coordinator, Idaho Department of Fish and Game, 208-287-2713, gservheen@idfg.idaho.gov, 600 South Walnut, PO Box 25, Boise, ID 83707

Installed Utility Scale Wind Power: 75 MW

INCENTIVES FOR WIND DEVELOPMENT

Renewable Portfolio Standard: No

Incentives for Industrial or "Big Wind" Production:

- Bonneville Environmental Foundation provides grants up to 33% of the capital costs for installation of renewable energy, including wind to local governments, non-profits and tribal governments; emphasis is on large grid-connected projects.
- Renewable Energy Project Bond Program allows independent renewable energy producers to apply for financing from the Idaho Energy Resources Authority, the state bonding authority created to finance the construction of electric generation and transmission projects by electric.

Incentives for Residential and "Small Wind" Production:

- Residential Alternative Energy Tax Deduction - income tax deduction for installation of alternative energy (including wind) - 40% deduction for the cost of the system in the year it is installed, 20% each year for three years thereafter; maximum deduction in any one year is $5,000 and a total maximum deduction of $20,000.
- Renewable Energy Equipment Sales Tax Refund - Purchasers of equipment used to develop a renewable facility or a project capable of generating at least 25 kW of electricity can apply for a refund of the sales tax from the Idaho Sales Tax Commission.
- Idaho Department of Water Resources provides low-interest energy loans (4% over 5 years), can include the installation of wind for residential or commercial purposes (up to $100,000); energy produced can not be sold, renewable must be least-cost alternative.
- The Northwest Solar Cooperative (NWSC) offers to purchase the rights to the environmental attributes or "Green Tags" derived from grid-connected solar PV- or wind-generated electricity at a rate of $0.05/kWh through December 31, 2009; systems up to 25 kW are automatically approved; > 25 kW approved on case-by-case basis.

Interconnection and Net Metering Standards:

Idaho has not established uniform interconnection rules and procedures either for net-metered systems or for larger distributed-generation (DG) systems that are not net-metered; net metering is generally available to customers who generate electricity using a renewable-energy system up to 25 kilowatts (kW) in capacity. However, through their respective tariffs, each of the state's three

investor-owned utilities – Avista Utilities, Idaho Power and Rocky Mountain Power – has established guidelines for the interconnection of small renewable-energy systems and larger DG.

ENERGY SITING PROCESS

Power Siting Authority: Wind power is currently unregulated at any level of government - local zoning may impact siting but this is variable. State energy siting legislation has been proposed this year but it may not pertain to wind project but rather only very large energy projects such as coal fired and nuclear power plants.

Wind Specific Siting Authority? No

Role of State Fish & Wildlife Agency: Idaho Department of Fish & Game has no formal role in the siting process.

How are wildlife laws applied: Same as any other development project, State cannot require mitigation.

WILDLIFE GUIDELINES FOR WIND

Wildlife Guidelines for Wind Power Siting: No Guidance

ILLINOIS

BACKGROUND

Contact: Todd Rettig, Manager, Division of Ecosystems and Environment, Illinois Department of Natural Resources, 217-557-0877, todd.rettig@illinois.gov, One Natural Resources Way, Springfield, IL 62702

Installed Utility Scale Wind Power: 305 MW

INCENTIVES FOR WIND DEVELOPMENT

Renewable Portfolio Standard: Yes - 25% by 2025, 75% of renewable energy must be from wind

Incentives for Industrial or "Big Wind" Production:

- Illinois provides a property tax exemption for renewable energy systems for residential, industrial or commercial use.
- The Illinois Department of Commerce and Economic Opportunity provides Wind Energy Production Development grants of up to $25,000 for systems greater than .5 MW; non-profit, schools, commercial, government, agricultural and institutional applicants are eligible.

Incentives for Residential and "Small Wind" Production:

- The Illinois Clean Energy Community Foundation (ICECF) provides private, competitive grants for developing renewable energy in schools, non-profits or local governments.
- Illinois provides a property tax exemption for renewable energy systems for residential, industrial or commercial use.
- Illinois Department of Commerce and Economic Opportunity provides grants for small wind (1 to 50 kW) development up to 50% of cost up to $25,000; all sectors are eligible.

Interconnection and Net Metering Standards:
Commonwealth Edison (ComEd), an investor-owned utility serving Chicago and surrounding areas, established interconnection and net-metering for photovoltaic (PV) and wind-energy systems up to 40 kW. The program is available to all customer classes. The total installed capacity of all net-metered systems is limited to 0.1% of the utility's annual peak demand.

ENERGY SITING PROCESS

Power Siting Authority: There are no specific authorities for regulating siting at the State level. Most projects would currently fall under the jurisdiction of local governments through county-level zoning or building permits.

Wind Specific Siting Authority? No

Role of State Fish & Wildlife Agency: Decisions to grant zoning changes and building permits is subject to the Illinois Endangered Species Act (520 ILCS 10/1 – 11) and the Illinois Natural Areas Preservation Act (525 ILCS 30/1-26). These two statutes set up a consultation process that involves the Illinois Department of Natural Resources (IDNR) evaluating impacts to protected natural resources and making recommendations (if necessary) to avoid or mitigate any adverse impacts. Units of local government are not required to adopt any IDNR recommendations during their zoning or permitting process. The consultation process is detailed in regulations at 17 Ill. Adm. Code Part 1075.

How are wildlife laws applied: Same as any other development or utility project; State cannot require mitigation unless threatened or endangered species are adversely affected.

WILDLIFE GUIDELINES FOR WIND

Wildlife Guidelines for Wind Power Siting: No Guidance

INDIANA

BACKGROUND

Contact: Jon Eggen, Environmental Supervisor, DNR Division of Fish and Wildlife, (317) 233-4666, jeggen@dnr.IN.gov

Installed Utility Scale Wind Power: None

INCENTIVES FOR WIND DEVELOPMENT

Renewable Portfolio Standard: No

Incentives for Industrial and Residential Wind Production:
Renewable Energy Property Tax Exemption - all renewable energy systems, including wind, are exempt from property taxes for years that the system is functioning; the entire renewable energy system and affiliated equipment, including equipment for storage and distribution, are exempt. Applies to commercial, industrial and residential sectors.

Interconnection and Net Metering Standards:
The Indiana Utility Regulatory Commission (IURC) has net-metering rules requiring the state's investor-owned utilities (IOUs) to offer net metering to residential customers and K-12 schools. The rules, apply to solar, wind and hydroelectric projects with a maximum capacity of 10 kilowatts (kW) with a limit on the aggregate amount of net-metering (nameplate) capacity to 0.1% of its most recent summer peak load. Net-metered systems must comply with interconnection standards.

ENERGY SITING PROCESS

Power Siting Authority: Wind power facilities are regulated but only at the local level and siting requirements vary by location.

Wind Specific Siting Authority? No

Role of State Fish & Wildlife Agency: Department of Natural Resources (DNR) provides comments and recommendations if requested, but counties are under no obligation to seek input.

How are wildlife laws applied: Same as any other development project. DNR can require mitigation under certain circumstances through regulations that apply to all construction projects but are not specific to wind power. The Flood Control Act regulates construction in a floodway and allows for mitigation.

STATE ENVIRONMENTAL POLICY ACT

Indiana Environmental Policy Act - Indiana Code Title 13, Art. 12 Ch. 4 (13-12-4-1 through -10), 329 Indiana Administrative Code (IAC) Art. 5, Rules 1

Overview:
All state agencies are required to do an environmental assesment (EA) to determine if an action will have a significant impact on the environment. The EA must assess both primary and secondary consequences of short term and long term duration as well as impacts of a complex of projects that might have considerable cumulative impacts or projects that may be highly controversial. If the impacts are found to "significantly affect the quality of the human environment," a detailed report on the environmental impact of a proposed action, listing adverse environmental effects which cannot be avoided should the action be implemented, alternatives to the proposed action, any irreversible and irretrievable commitments of resources which would be involved, the growth-inducing aspects of the proposed action, effects of the proposed action on the use and conservation of energy resources, the rationale for selecting the final proposed action, and other information will be required.

Projects Affected by Law:
Relates to state agency action or projects that are funded all or in part by the state - law specifically states that projects requiring licenses or permits from state agencies are not required to do an EIS.

Public Participation Provisions:
Local, state, and federal agencies and the general public (deemed by the agency to have an interest in the proposed action) have 30 days after the draft environmental impact statement is made publie submit comments on the proposed action. After receipt of comments, the agency shall determine by vote of the governing body whether or not to conduct a public hearing on the environmental impact of the proposed action.

Applicability to Wind Development?
Unlikely since Indiana does not have any state funding programs for wind energy incentives.

Implementing Agency:
Indiana Department of Environmental Management

WILDLIFE GUIDELINES FOR WIND

Wildlife Guidelines for Wind Power Siting: Draft guidelines

Lead Agency on Guidelines: Department of Natural Resources, Environmental Section

Status of Wildlife Guidelines: Internal draft, not available to public yet, they will be voluntary.

IOWA

BACKGROUND

Contact: Douglas C. Harr, Wildlife Diversity Program Coordinator Iowa Dept. of Natural Resources, Doug.Harr@dnr.iowa.gov

Installed Utility Scale Wind Power: 967 MW

INCENTIVES FOR WIND DEVELOPMENT

Renewable Portfolio Standard: Yes - 105 MW

Incentives for Industrial or "Big Wind" Production:

- Iowa has two Renewable Energy Production Tax Credits that can be applied to wind energy facilities that have been approved by the Iowa Utilities Board. First under Iowa Code § 476C is a production tax credit of 1.5¢ per kilowatt-hour available for energy generated and sold by eligible wind energy generators and other renewable energy facilities for 10 years after they enter into production - there are specific ownership eligibility requirements for this credit, and the maximum total amount of wind generating capacity eligible for this credit is 180 megawatts (MW). Second, under Iowa Code § 476B, a production tax credit of 1.0¢ per kilowatt-hour is available for electricity generated and sold by eligible wind energy facilities for 10 years after they enter into production, there are no specific ownership or capacity criteria for individual projects; however, facility owners may not own more than two eligible facilities, and must have an executed power purchase agreement or interconnection agreement, and this credit is not available to facility owners who have received the state's property tax exemption for renewable energy systems, the local option special assessment of wind energy devices, or the sales tax exemption for wind energy equipment. The maximum total amount of generating capacity eligible for the credit is 450 MW.
- Iowa's Energy Replacement Generation Tax Exemption allows wind energy conversion properties to be exempt from the state's replacement generation tax of 0.06 cents ($0.0006) per kWh (the tax imposed in lieu of property tax).
- Iowa's Local Option Special Assessment of Wind Energy Devices allows any city or county to pass an ordinance assessing wind energy conversion equipment at a special valuation for property tax purposes, beginning at 0% of the net acquisition cost in the first assessment year and increasing annually by five percentage points to a maximum of 30% of the net acquisition cost in the 7th and succeeding years.
- In Iowa, the market value added to a property by a solar or wind energy system is exempt from the state's property tax; there is no maximum limit on the size of the system. Iowa also exempts from the state sales tax the total cost of wind energy equipment and all materials used to manufacture, install or construct wind energy systems.
- The Alternate Energy Revolving Loan Program (AERLP) provides low-interest loan funds, 50% of the total loan at 0% interest, with a maximum of $250,000, to individuals and organizations that seek to build renewable energy production facilities in Iowa.

Incentives for Residential and "Small Wind" Production:

- Residential and small wind producers in Iowa are also eligible for the Renewable Energy Production Tax Credits, the Local Option Special Assessment of Wind Energy Devices, the Alternate Energy Revolving Loan Program described above.
- In Iowa, the market value added to a property by a solar or wind energy system is exempt from the state's property tax; there is no maximum limit on the size of the system. Iowa also exempts from the state sales tax the total cost of wind energy equipment and all materials used to manufacture, install or construct wind energy systems.
- Iowa's Energy Bank Program provides financing for public and some non-profit organizations for energy analysis and energy improvements that will pay for themselves within their useful lives; financing is available via a pre-arranged, low-interest capital loan note or lease purchase-agreement with a local or regional investment bank.
- Independence Light & Power provides a Renewable Energy Rebate, customers with qualifying wind-energy systems rated 20 kW or less will receive a rebate equal to 25% of the system's cost, with a maximum incentive of $10,000; customers may also receive a rebate for 75% (up to $375) for a renewable energy site assessment and 50% rebate (up to $2,500) for both routine maintenance, as well as major system repairs.

Interconnection and Net Metering Standards:
Iowa allows net metering (generally up to 500 kW) for renewable-energy systems, but no uniform interconnection standards are currently in place either for small renewables or for larger distributed generation.

ENERGY SITING PROCESS

Power Siting Authority: In Iowa, zoning and permitting is handled on a county and/or city level. Each county or city may have different guidelines and application procedures to follow. The Iowa Department of Natural Resources (DNR) has developed a *Wind Energy Checklist* for small-scale wind turbine project in Iowa. (http://www.iowadnr.com/energy/renewable/files/windchecklist.pdf). The Iowa Utilities Board provides a certificate of public convenience, use, and necessity for electric power generating plant or a combination of plants at a single site, owned by any person, with a total capacity of 25 MW of electricity or more. However it has been argued successfully that wind does not always have to go through the Board since it is typically individual generating units connecting to several different lines. Exemptions have been authorized in part because wind is a renewable energy source that the Board has been required to promote.

Wind Specific Siting Authority? No

Code or Regulations: Iowa Code §§ 476A.1 to 19

Role of State Fish & Wildlife Agency: All projects are reviewed and subject to environmental regulation by the Department of Natural Resources (DNR). The Utilities Board often defers to the DNR on environmental and land use factors. Counties are not required to consult with DNR. DNR is monitoring wind farms for avian mortality.

WILDLIFE GUIDELINES FOR WIND

Wildlife Guidelines for Wind Power Siting: Wind Energy and Wildlife Resource Management in Iowa - Avoiding Potential Conflicts, Final. The DNR has also developed a map of "Areas of Concern for Wind Farm Sitings" that highlights protected natural resource and wildlife areas where developers may want to take extra precautions when developing wind farms.

Lead Agency on Guidelines: Iowa Department of Natural Resources

Status of Wildlife Guidelines: Final – October 2007

Summary of Guidelines: The guidelines were developed from a variety of sources including the U.S. Fish & Wildlife Service Interim Guidelines for siting and construction of wind energy facilities, and recommendations from the National Wind Coordinating Committee. Guidelines recommend that a site study plan and description of turbine structural and lighting design be submitted to Iowa DNR well in advance of final siting decisions, for review by staff wildlife experts and advisements on acceptability or suggestions for modifications and/or monitoring. A baseline inventory of wildlife and evaluation of habitat should be considered for every site under serious consideration for windfarm development. Special attention should be paid to Spring and Fall migration seasons, reviewing migrational use of the proposed site by raptors, waterfowl, shorebirds, gulls, songbirds and bats. Upon completion and startup of wind energy generation, monitoring wildlife populations and migrations should be conducted for at least 2-3 years.

Web site for Guidelines: http://www.iowadnr.com/energy/wind/windwildlife.html

	Detailed Summary of Iowa's Voluntary Guidelines
Pre-construction survey	A baseline inventory of wildlife and evaluation of habitat should be considered for every site under serious consideration for windfarm development. Special attention should be paid to Spring and Fall migration seasons, reviewing migrational use of the proposed site by raptors, waterfowl, shorebirds, gulls, songbirds and bats.
Design/Operation Recommendations	Guidelines recommend using tubular support towers with pointed tops, rather than lattice supports, and avoiding placement of permanent external ladders or platforms on tubular towers to reduce opportunities for birds to perch or nest upon the structures. Avoid use of guy wires for turbine or meteorological tower supports. Any existing guy wires should be marked with recommended bird deterrent devices. The minimum amount of pilot warning and avoidance lighting necessary should be used, and unless otherwise required by the Federal Aviation Administration, only white strobe lights should be used at night. Electric power lines should be placed underground wherever possible, or should utilize insulated, shielded wire when placed above ground, in order to reduce bird perching and electrocution. Where the height of rotor-sweep area produces high wildlife collision risks, tower heights should be adjusted to lower risks.

Site Development Recommendations	Recommends using map of Iowa, denoting areas of particular concern for possible adverse effects by wind turbines upon wildlife and habitat developed by DNR. Avoid placing turbines in areas known to have federally protected threatened or endangered species. Avoid placing turbines in or near recognized bird concentration areas or migration pathways. Avoid placement of turbines in or near areas where highly "area-sensitive" wildlife species, such as prairie-chickens (recommends at least 5 miles from known leks) are known. Avoid placing turbines near documented bat hibernation, breeding or nursery colonies and in migration corridors or between known colonies and feeding areas. Avoid placement of multiple turbines in close proximity to one another or perpendicular to known migration pathways (typically north-south); consider possible cumulative regional effects of multiple wind energy projects. Reduce or eliminate availability of carrion within wind farms, to reduce chances of attracting eagles, vultures and other raptors colliding with turbine blades. Place wind turbines in areas already fully developed for agriculture, especially row-crop farming, where there is minimal extant wildlife habitat.
Consultation with wildlife agency, USFWS	Recommends submitting a site study plan and description of turbine structural and lighting design to Iowa DNR well in advance of final siting decisions, for review by staff wildlife experts and advisements on acceptability or suggestions for modifications and/or monitoring. Recommends contacting the Iowa Department of Natural Resources Endangered Species Coordinator or Wildlife Bureau staff for areas known to have federally protected endangered species
Mitigation requirements	If wildlife habitat losses or fragmentation must be mitigated, develop a plan to create or restore habitat away from the wind farm site. This will serve to attract birds, bats and other wildlife away from the development and reduce collisions. Wherever possible, coordinate habitat mitigation sites with other public or private wildlife lands, to connect, enlarge or enhance those areas.
Post-Construction/ Operational Surveys	Upon completion and startup of wind energy generation, monitoring wildlife populations and migrations should be conducted for at least 2-3 years. If wind turbine facilities absolutely must be located in areas known for high seasonal concentration of birds, a bird monitoring program must be established, with at least three years of data collected to determine peak use periods. Data may be collected by direct observation, radar, infrared or acoustic methods. When birds are highly concentrated in or near the site, turbines should be shut down until birds have dispersed.
Decommissioning	None

KANSAS

BACKGROUND

Contact: Jim Hays, Kansas Department of Wildlife and Parks, jamesh@wp.state.ks.us

Installed Utility Scale Wind Power: 364 MW

INCENTIVES FOR WIND DEVELOPMENT

Renewable Portfolio Standard: No

Incentives for Industrial and Residential Wind Production:
Kansas has a Renewable Energy Production Tax Credit that exempts renewable energy equipment (including wind) from property taxes for both commercial and residential facilities.

Interconnection and Net Metering Standards:
No net-metering/interconnection standards.

ENERGY SITING PROCESS

Power Siting Authority: The authority to regulate land use in Kansas is under the purview of local governments through the state's planning and zoning statutes. Wind energy siting and permitting requirements vary from county to county based largely on whether or not a county is zoned. Currently, statewide regulations for siting wind projects do not exist. Kansas Energy Council provides coordination with counties and the Kansas Renewable Energy Working Group has developed siting guidelines to assist the counties' in their planning efforts.

Wind Specific Siting Authority? No

Code or Regulations: Planning & Zoning Statutes: (K.S.A. 12-741 et seq.)

Role of State Fish & Wildlife Agency: The guidelines suggest that counties have developers contact the Kansas Department of Wildlife and Parks to outline potential impacts to wildlife and habitat.

WILDLIFE GUIDELINES FOR WIND

Wildlife Guidelines for Wind Power Siting: Kansas Department of Wildlife and Parks has a position statement on wind projects. In addition, the Kansas Energy Council has developed a Wind Energy Siting Handbook, and the Kansas Renewable Energy Working Group has developed guidelines.

Lead Agency on Guidelines: Kansas Department of Wildlife and Parks, Kansas Renewable Energy Working Group, Kansas Energy Council

Status of Wildlife Guidelines: Final - April 2005

Summary of Guidelines: Wind Siting Handbook provides voluntary guidelines on all aspects of wind power siting based on existing regulations in four counties (land use regulation is solely under the purview of local government in Kansas) and recommends requiring environmental assessment in siting decisions. Recommends developers contact appropriate agencies to assess impacts to potentially sensitive land uses and encourages avoidance of rare or disappearing ecosystems. Outlines biological and environmental assessment prior to development (encourages use of biological and environmental experts, including agency or university personnel. Recommends requiring resource management agency be contacted early in process and careful review of legally protected species' use of area. Provides specific recommendations including burying power lines, minimizing perching areas on turbines and siting away from known migratory routes. Outlines mitigation options for unavoidable impacts which may include ecological restoration, conservation easements, and long-term management agreements.

Web site for Guidelines: Kansas Wind Position Statement: (www.kdwp.state.ks.us search for 'wind power' - see 'wind power position')

The Kansas Department of Wildlife and Parks Wind Power Position Statement:

1) That wind power facilities should be sited on previously altered landscapes, such as areas of extensive cultivation or urban and industrial development, and away from extensive areas of intact native prairie, important wildlife migration corridors, and migration staging areas.
2) To recommend adherence to the siting guidelines for wind power projects Siting Guidelines for Windpower Projects in Kansas produced by the Kansas Renewable Energy Working Group (www.kansasenergy.org/Kansas_Siting_Guidelines.PDF).
3) To support the study of and establishment of standards for adequate inventory of plant and animal communities before wind development sites are selected, during construction, and after development is completed (Manes et al., in review). The resultant improvement in available knowledge of wind power and wildlife interactions obtained through research and monitoring should be used to periodically update guidelines regarding the siting of wind power facilities.
4) That mitigation is appropriate only if significant ecological harm from wind power facilities cannot be adequately addressed through proper siting.
5) To support the establishment of processes to ensure a comprehensive and consistent method in addressing proposed wind power developments.
6) To advocate the direct coupling of energy conservation and efficiency programs with any new measures aimed at increasing energy supply whether renewable or conventional.

Kansas Wind Siting Guidelines:
http://www.naseo.org/energy_sectors/wind/kansas_siting_guidelines.pdf;

	Detailed Summary of Kansas' Voluntary Guidelines
Pre-construction survey	Guidelines from the Kansas Renewable Energy Working Group focus on broad aspects of wind development including natural/biological considerations. Recommends that developers consider the biological setting early in the project evaluation and planning process and to use biological and environmental experts to conduct preliminary reconnaissance of the prospective site. Landscape-level examinations of key wildlife habitats, migration corridors, staging/concentration areas, and breeding and brood-rearing areas should be used to develop general siting strategies. Recommends careful review of rare, threatened or endangered species as well as those species that may not have special protection but are in decline. Recommends considering cumulative regional impacts of multiple wind farm developments when making environmental assessments and mitigation decisions.
Design/Operation Recommendations	Design recommendations include not allowing perching areas on nacelles of turbines and towers should not be lattice-type or other designs that allow perching. Recommends addressing potential adverse effects of warning lights on migrating birds.
Site Development Recommendations	Guidelines recommend focusing on areas where native vegetation is scarce or absent and avoiding native, unfragmented areas in tallgrass, sandsage, mixed grass and short grass habitats. Power lines should be buried, when feasible, and roads and fences should be minimized. In areas where periodic grassland burning is practiced, infrastructure should be built to withstand fire. Turbines should be situated so they do not interfere with important wildlife movement corridors or staging areas. Avoid siting on steep slopes to avoid erosion and try to construct during winter or when soils are dry and native vegetation is dormant.
Consultation with wildlife agency, USFWS	Recommends contacting the appropriate resource management agencies early in the process to determine if there are any resources of special concern in the area under consideration.
Mitigation requirements	When it is impossible to avoid significant ecological damage from wind siting, recommends mitigation for lost habitat including ecological restoration, long-term management agreements, and conservation easements to enhance or protect sites with similar or higher ecological quality to the developed site.

Post-Construction/ Operational Surveys	None
Decommissioning	Recommends anticipating and making provisions for future site decommissioning and restoration.

Kansas Model Zoning: http://www.kansasenergy.org/KEC/documents/wind_siting_handbook.pdf

	Detailed Summary of Kansas Model Zoning Guidelines
Pre-construction survey	Provides voluntary guidelines on all aspects of wind power siting based on existing regulations in four counties (land use regulation is solely under the purview of local government in Kansas) and recommends requiring environmental assessment in siting decisions. Recommends considering the biological setting during zoning or approval process and encourages the use of biological and environmental experts to conduct preliminary reconnaissance of the prospective site area. Recommends requiring careful review if legally protected wildlife, such as threatened and endangered species, are present or potentially present at a wind development site and to recognize that other seriously declining or vulnerable species that have no legal protection may also be present.
Design/Operation Recommendations	No perches should be allowed on the nacelles (the enclosure located at the top of a wind turbine tower that houses the gearbox, generator, and other equipment); towers should not utilize lattice-type construction or other designs that provide perches for avian predators. Potential adverse effects of turbine warning lights on migrating birds should be addressed.
Site Development Recommendations	Suggests discouraging development in large, intact areas of native vegetation. Power lines should be buried when feasible. In regions where grassland burning is practiced, infrastructure should be able to withstand periodic burning of vegetation. Roads and fences should be minimized. Turbines should be situated in a way that does not interfere with important wildlife or livestock movement corridors and staging areas.
Consultation with wildlife agency, USFWS	Recommends requiring that the appropriate resource management agencies be contacted early in the planning process to determine if there are any resources of special concern in the area under consideration.

Mitigation requirements	When it is impossible to avoid significant ecological damage in the siting of a wind power facility, mitigation for habitat loss should be considered. Appropriate actions may include ecological restoration, long-term management agreements, and conservation easements to enhance or protect sites with similar or higher ecological quality to that of the developed site.
Post-Construction/ Operational Surveys	None
Decommissioning	Recommends anticipating and requiring provisions for future site decommissioning and restoration. A decommissioning and reclamation plan should include: when and under what circumstances decommissioning and reclamation occurs; the expected end of the project life; and how the decommissioning and reclamation plan is secured (e.g. bonds, contract).

KENTUCKY

BACKGROUND

Contact: James Bush, Division of Renewable Energy & Energy Efficiency, (502) 564-7192, James.Bush@ky.gov, 500 Mero Street, 12th Floor, Capital Plaza Tower, Frankfort, KY 40601

Installed Utility Scale Wind Power: None

INCENTIVES FOR WIND DEVELOPMENT

Renewable Portfolio Standard: No

Incentives for Industrial or "Big Wind" Production:
None

Incentives for Residential and "Small Wind" Production:
TVA Green Power Switch Partners Program - $500 plus $.15/kWh (residential/small-commercial) or $0.20/kWh (large commercial) to purchase entire production of renewable power including wind; systems must be 50 kW or less.

Interconnection and Net Metering Standards:
Current net-metering rules only apply to photovoltaic systems.

ENERGY SITING PROCESS

Power Siting Authority: In general, Kentucky has low wind speeds and therefore limited wind energy potential. Most likely development would be for individual use which would be regulated by local zoning. If there were utility grade wind power developments, the Kentucky State Board on Electric Generation and Transmission Siting (Siting Board) or the Public Services Commission would likely have authority. The Siting Board reviews generating facilities that sell power on the wholesale market and are commonly known as merchant power plants. Siting Board approval is required for merchant plants with a generating capacity of 10 MW or more.

Wind Specific Siting Authority? No

Code or Regulations: KRS 278.700 to 278.716

Role of State Fish & Wildlife Agency: The Secretary of the Environment and Public Protection Cabinet is one of 7 members of the Siting Board. Siting board review covers environmental matters not covered by permits issued by the Kentucky Department for Environmental Protection. The Department issues permits for air emissions, water withdrawals and discharges and solid waste disposal. The Siting Board review covers matters such as noise and visual impacts, among others.

WILDLIFE GUIDELINES FOR WIND

Wildlife Guidelines for Wind Power Siting: No Guidance

LOUISIANA

BACKGROUND

Contact: Erik Baka, Biologist Manager, LA Dept. of Wildlife and Fisheries, Avian Nongame Program, (225) 765-2359, ebaka@wlf.louisiana.gov, PO Box 98000 Baton Rouge, LA 70898-9000

Installed Utility Scale Wind Power: None

INCENTIVES FOR WIND DEVELOPMENT

Renewable Portfolio Standard: No

Incentives for Industrial or "Big Wind" Production:
None

Incentives for Residential and "Small Wind" Production:
None

Interconnection and Net Metering Standards:
Net-metering program that allows interconnection of residential renewable systems up to 25 kW and nonresidential systems up to 100 kW.

ENERGY SITING PROCESS

Power Siting Authority: Onshore wind power generation is very limited in Louisiana. Offshore development has more potential in Louisiana and possible siting might be on abandoned oil and gas platforms. This development would likely be regulated through Coastal Zone Management Act or Coastal Use Permits implemented by the LA Department of Natural Resources.

Wind Specific Siting Authority? No

Role of State Fish & Wildlife Agency: LA Dept. of Fisheries and Wildlife is in negotiations to have joint environmental review but this is not finalized yet.

How are wildlife laws applied: Same as any other utility project, State can require mitigation

WILDLIFE GUIDELINES FOR WIND

Wildlife Guidelines for Wind Power Siting: No Guidance

MAINE

BACKGROUND

Contact: Tom Hodgman, Wildlife Biologist, MDIFW - Bird Group, (207) 941-4482, tom.hodgman@maine.gov, 650 State St., Bangor, ME 04401

Installed Utility Scale Wind Power: 42 MW

INCENTIVES FOR WIND DEVELOPMENT

Renewable Portfolio Standard: Yes - 10% new renewable energy capacity by 2017

Incentives for Industrial or Residential Wind Production:
Maine's Renewable Resources Matching Fund (RRMF), provides matching grants for renewable energy demonstration projects by non-profit organizations, as well as research and development of renewable energy technology; provides 50% of cost up to $50,000 for projects less than 100 MW

Interconnection and Net Metering Standards:
Net metering is available to owners of qualified cogeneration and small power-production facilities with a maximum capacity of 100 kW.

ENERGY SITING PROCESS

Power Siting Authority: The Department of Environmental Protection regulates the construction of large structures and developments with a footprint exceeding 20 acres through "Site Law".

Wind Specific Siting Authority? No

Code or Regulations: Maine Site Law - Title 38, Chapter 3, §§ 481-490

Role of State Fish & Wildlife Agency: Department of Inland Fisheries & Wildlife (DIFW) is specifically responsible for Threatened and Endangered species impacts. DIFW has joint environmental review with Department of Environmental Protection (DEP) and Land Use Regulatory Committee (for projects in state's unorganized territories) and advises regulatory agency on issues regarding the fish and wildlife resource.

How are wildlife laws applied: Projects that exceed a certain threshold for size (i.e., footprint) or occur in regulated habitats trigger review. Review includes occurrence of rare, threatened or endangered species and an assessment that the proposed development does not adversely impact Fish and wildlife life cycles. Biological review can overrule other factors and prevent permit issuance. DEP provides a specific guidance on factors considered during wind power development at: http://www.maine.gov/dep/blwq/docstand/windpower.pdf. State has the authority to require mitigation.

WILDLIFE GUIDELINES FOR WIND

Wildlife Guidelines for Wind Power Siting: Proposed Guidelines

Status of Wildlife Guidelines: Stakeholders group is in preliminary stages of drafting guidelines.

Summary of Guidelines: Department of Inland Fisheries & Wildlife typically asks for studies of bird migration including radar studies of night migrants and daytime counts of raptors. Radar and acoustic surveys for migrating bats. If appropriate, surveys for rare small mammals have been conducted. Rare community and rare plant surveys are commonly conducted as well as full work up for wetlands.

MARYLAND

BACKGROUND

Contact: Gwen Brewer, Science Program Manager, MD Department of Natural Resources, (410) 260-8558, gbrewer@dnr.state.md.us, or John Sherwell, Power Plant Research Program, (410-260-8667), jsherwell@dnr.state.md.us

Installed Utility Scale Wind Power: A 40 MW project has been permitted, 2 others are in the permitting process.

INCENTIVES FOR WIND DEVELOPMENT

Renewable Portfolio Standard: Yes - Yes - Tier 1: 9.5% in 2022 and beyond; Tier 2: 2.5% in 2006 through 2018; A supplier receives 120% credit toward meeting its Tier 1 obligations through RECs associated with wind energy through December 31, 2005. Beginning in 2006 and through 2008, a 110% credit is in effect.

Incentives for Industrial or "Big Wind" Production:
The Maryland Energy Administration offers a Clean Energy Production Tax Credit of 0.85 cents/kWh against the state income tax, for a five-year period, for electricity generated by wind and other eligible renewable energy sources; the maximum amount of credit over five years is $2.5 million and all credits statewide may not exceed $25 million each year; if credit exceeds tax, the credit may be carried forward for up to 10 years.

Incentives for Residential and "Small Wind" Production:
- The MEA Clean Energy Production Tax Credit described above applies to residential and small wind production as well.
- The Montgomery County Clean Energy Rewards program provides incentives to Montgomery County residents (credit of $.01/kWh), businesses, non-profits, and congregations (credit of $.015/kWh for non-residential) for purchasing clean energy through certified suppliers; allowable project costs may not exceed $120/sq. ft. (whole/base building), $60/sq. ft. (tenant space).
- The State Agency Loan Program (SALP) is a revolving loan program through the Maryland Energy Administration to state agencies for cost-effective energy efficiency improvements in state facilities including installation of renewable energy systems (including wind).

Interconnection and Net Metering Standards:
Net metering is available in Maryland to systems up to 2 MW until the aggregate capacity of all net-metered systems reaches 1,500 MW.

ENERGY SITING PROCESS

Power Siting Authority: Public Service Commission issues a Certificate of Public Convenience and Necessity (CPCN)for construction of electricity generating facilities. Wind developments were

previously included in this process however, legislation enacted in 2007 exempts wind developments 70 MW or below from CPCN process.

Wind Specific Siting Authority? Only if a wind development will exceed 70 MW.

Code or Regulations: Siting Authority: Public Utility Companies Article, §§2-121 and 7-205—7-208, Annotated Code of Maryland; Environmental Requirements: COMAR 20.79.03.02

Role of State Fish & Wildlife Agency: Department of Natural Resources (DNR) is one of the eight State agencies that is an intervener on the application for a CPCN; DNR contributes conditions for operation and siting.

How are wildlife laws applied: Currently same as any other utility project. State endangered species law instructs other state agencies to avoid impacts for listed species. Under the Power Plant Siting Law, more specific mitigation is described.

STATE ENVIRONMENTAL POLICY ACT

Maryland Environmental Policy Act **-** Annotated Code of Maryland, Natural Resources Title, Subtitle 3, §§ 1-301 to 1-305, State departments have developed their own regulations (e.g. Dept. of Transportation is COMAR 11.01.08.01 to .08), no specific guidelines in DNR title, 1974

Overview:
State actions are first required to fill out an Environmental Assessment Form to determine if the project may have a significant impact on the environment, if yes they must prepare an Environmental Effects Report. Any proposed State action significantly affecting the quality of the environment requires an environmental effects report including, but not limited to, a discussion of: The effects of the proposed action on the environment, including adverse and beneficial environmental effects that are reasonably likely if the proposal is implemented or if it is not implemented; Measures that might be taken to minimize potential adverse environmental effects and maximize potential beneficial environmental effects, including monitoring, maintenance, replacement, operation, and other follow-up activities; and Reasonable alternatives to the proposed action that might have less adverse environmental effects or greater beneficial environmental effects, including the alternative of no action.

Projects Affected by Law:
Applies to significant state actions by state agencies or entities as well as projects funded by state money.

Public Participation Provisions:
Agencies are recommended to solicit public input based on the public notice provisions of § 10-112 of the State Government Article, but no specific requirements for public input or timelines for input are listed.

Applicability to Wind Development?
Only if wind project is receives state funding (the state does have incentives for wind power development) or it is on state land.

Implementing Agency:
Department of Natural Resources

WILDLIFE GUIDELINES FOR WIND

Wildlife Guidelines for Wind Power Siting: Maryland has drafted guidelines that would be mandatory as part of power siting regulations if enacted, however a law passed in early 2007 exempts wind power developments up to 70 MW from the Public Service Commission (PSC) process and it has not yet been determined whether or not the guidelines will still be applicable.

Lead Agency on Guidelines: Technical Advisory Group including representatives from DNR, university, federal agency, conservation organization and industry.

Status of Wildlife Guidelines: Awaiting approval by PSC, unclear if they will be approved now and would only affect projects greater than 70 MW.

Summary of Guidelines: The guidelines are comprehensive for pre-siting evaluation, design and construction recommendations, lighting issues, etc. The applicant is required to get an Environmental Review from the State's Wildlife and Heritage Service to assess species and habitats of concern. A consultation with DNR Natural Heritage biologists is required to minimize seasonal (e.g. avian and bat breeding seasons) disturbance during construction and to outline pre-construction studies (one year of monitoring, additional monitoring of species of special concern) that must be undertaken. Studies will continue during development and the developer is required to do three years of monitoring post-construction. Impacts should be avoided or minimized before seeking mitigation; the guidelines outline mitigation options and adaptive management for unforeseen impacts.

Web site for Guidelines: http://www.psc.state.md.us/psc/index.htm; Admin Docket RM24

MASSACHUSETTS

BACKGROUND

Contact: Department of Energy Resources, (617) 727-4732, DOER.Energy@State.MA.US,

Installed Utility Scale Wind Power: 4 MW

INCENTIVES FOR WIND DEVELOPMENT

Renewable Portfolio Standard: Yes - 4% by 2009 + 1% annual increase

Incentives for Industrial or "Big Wind" Production:

- Massachusetts offers a corporate or personal excise tax deduction for any income received from the sale of a patent or royalty income from a patent deemed beneficial for energy conservation or alternative energy development.
- The Excise Tax Deduction for Solar or Wind-Powered Systems allows businesses to deduct from net income, for state excise tax purposes, the costs incurred from the installation of any solar or wind powered heating/cooling system.
- The Massachusetts Technology Collaborative (MTC), as administrator of the state's Renewable Energy Trust Fund, offers loans between $500,000 and $3 million to companies that currently, or plan to, manufacture renewable energy technology products (new products, existing products or a combination of the two) in Massachusetts; the MTC will provide up to 50% of capital expenses and related spending over a 24-month window; at most 75% of funding can come from public sources, including equity, debt or grant.
- The MTC Clean Energy Pre-Development Financing Initiative offers grants and loans to support the development of grid-connected renewable energy systems (including wind) in any of the 6 New England states; funding is available for feasibility studies (up to $50,000) and for pre-development activities (up to $250,000 for wind), minimum cost-share for each project is 25%; wind systems must be at least 3 MW.
- The MTC matches funds generated by the Clean Energy Choice program (Massachusetts electric customers can choose to pay an additional premium each month to support green power) up to $2.5 million annually in matching grants (up to one dollar in funding for each dollar residents spend on clean energy) for communities, towns and cities to fund clean energy projects within their communities.

Incentives for Residential and "Small Wind" Production:

- The Renewable Energy State Income Tax Credit provides a 15% credit against the state income tax for the cost of a renewable-energy system (including installation) installed on an individual's primary residence up to $1,000; the credit may be carried over if the credit is greater than income tax liability in one year.
- The Renewable Energy Property Tax Exemption allows solar and wind powered devices used as a primary or auxiliary power system for a taxable property qualify for property tax exemptions for a period of 20 years from the date of installation.

- The Renewable Energy Equipment Sales Tax Exemption exempts solar, wind, and heat pump systems and all related equipment from the state sales tax.
- The MTC Large Onsite Renewables Initiative (LORI) provides Feasibility Study Grants (up to $40,000 with cost-share of 15%) and Design & Construction Grants (up to $400,000 or 75% of actual costs) on a competitive basis for grid-tied renewable-energy projects greater than 10 kW in capacity that are located at commercial, industrial, institutional and public facilities that will consume more than 25% of the renewable energy generated by the project on-site.
- MassHousing's Green Affordable Housing Development Program provides feasibility and design grants (up to $30,000 for feasibility; up to $50,000 for design) and grants or loans for construction (up to $500,000) to promote the construction of renewable energy generation systems, including 100 kW or more wind systems, in affordable housing developments financed by MassHousing or the Affordable Housing Trust Fund.
- The MTC Small Renewables Initiative offers rebates of up to $50,000 for design & construction of customer-sited renewable energy projects (including $2.25 per watt for wind electric systems), with a goal of supporting the installation of 400 - 500 systems statewide; projects must be located at residential (will only fund up to 3.6 kW for residential systems), commercial, industrial, or institutional facilities (will only fund up to 10 kW for non-residential systems) that are connected to one of the investor-owned electric distribution utilities in Massachusetts

Interconnection and Net Metering Standards:
Massachusetts' investor-owned utilities must offer net metering up to a maximum individual system capacity of 60 kW.

ENERGY SITING PROCESS

Power Siting Authority: Energy Facilities Siting Board regulates construction of power plants greater than 100 MW - none of Massachusetts current wind power plants would fall under this category. Smaller projects are dealt with through zoning and ordinances of cities and towns. State has developed model zoning by-laws that municipalities can enact. Offshore wind development has much greater potential in Massachusetts.

Wind Specific Siting Authority? No

Code or Regulations: Regulatory Authority for Siting Board: 980 CMR 2.00: M.G.L. c. 164, § 69H

Role of State Fish & Wildlife Agency: The Secretary of the Executive Office of Environmental Affairs is one of nine members of the Siting Board. Numerous agencies, including the Massachusetts Natural Heritage and Endangered Species program and the Department of Environmental Protection, may regulate components of the project (wetlands concerns, species concerns, etc.) no matter what government unit has final say in the project.

How are wildlife laws applied: Same as any development project.

STATE ENVIRONMENTAL POLICY ACT

Massachusetts Environmental Policy Act - Mass. General Laws, Title III, Ch. 30, §§61, 62-62H, 301 CMR 11.00, 1977

Overview:
A project is subject to Massachusetts Environmental Policy Act (MEPA) jurisdiction when it either meets or exceeds one or more review thresholds (a specific list of categories of Projects or aspects thereof of a nature, size or location that are likely, directly or indirectly, to cause damage to the environment) or the Secretary requires fail-safe review (if there is a petition by one or more Agencies or ten or more Persons, or at the initiative of the Secretary). The process begins with an Environmental Notification Form (ENF) that includes a concise but accurate description of the Project and its alternatives, identify any review thresholds the Project may meet or exceed and any Agency Action it may require, present the Proponent's initial assessment of potential environmental impacts, propose mitigation measures, and may include a proposed Scope. The The full Environmental Impact Report (EIR) requires a stand-alone description of the nature and extent of the proposed project and its environmental impact; all measures being utilized to minimize environmental damage; any adverse short-term and long-term environmental consequences which cannot be avoided should the project be undertaken; and reasonable alternatives to the proposed project and their environmental consequences.

Projects Affected by Law:
MEPA applies to a Project undertaken by an Agency; Agency actions include granting state permits or licenses, providing state financial assistance, or transferring state land. MEPA does not apply to projects needing only local approvals.

Public Participation Provisions:
MEPA review begins by preparing and filing an Environmental Notification Form (ENF) with the Secretary of Environmental Affairs. The ENF is published in the next Environmental Monitor and the MEPA Office, agencies and the public have a 20-Day review period, after which the Secretary determines if the project requires a full Environmental Impact Report. After preparation of the EIR, it is published in the Environmental Monitor and the public has 30 days to review and comment on the proposal after which the Secretary makes the final decision. If approved, the Agency or other project lead may proceed 60 days after the Final EIR is published.

Applicability to Wind Development?
Yes, if the project requires State permits.

Implementing Agency:
Executive Office of Environmental Affairs - MEPA Office

WILDLIFE GUIDELINES FOR WIND

Wildlife Guidelines for Wind Power Siting: No specific guidelines for wildlife, however the Department of Energy Resources and the Executive Office of Environmental Affairs have developed a model wind zoning by-laws to assist Massachusetts cities and towns in establishing reasonable standards for wind power development.

Lead Agency on Guidelines: Department of Energy Resources and Executive Office of Environmental Affairs

Summary of Guidelines: The recommended by-laws are voluntary and are very limited on wildlife related recommendations. The only components are for lighting, to limit non-blinking red lights to reduce attraction for wildlife, and a limited section on habitat impacts, recommending to limit the amount of ground cleared for construction.

Web site for Model County Ordinance: http://www.mass.gov/Eoca/docs/doer/renew/model-allow-wind-by-permit.pdf

	Detailed Summary of Massachusetts' Model Zoning Guidelines
Pre-construction survey	The model zoning language is limited as far as implications to habitat and wildlife specific concerns and focus more on safety and impacts to residential communities. There are some recommended provisions to reduce impacts in the pre-approval and siting time frames. Specific pre-construction components (primarily for utility-scale facilities) include a plan indicating all proposed changes to the landscape of the site, including temporary or permanent roads or driveways, grading, vegetation clearing and planting, exterior lighting, other than FAA lights, screening vegetation or structures.
Design/Operation Recommendations	Recommends that lighting for turbines should only be included if recorded by Federal Aviation Administration and lights for associated structures should have the minimum lighting for safety and operational structures. Monopole towers are recommended as the preferred structure.
Site Development Recommendations	Recommends that clearing of natural vegetation shall be limited to what is necessary for the construction, operation and maintenance of the wind facility and is otherwise prescribed by applicable laws, regulations, and ordinances.
Consultation with wildlife agency, USFWS	None
Mitigation requirements	None
Post-Construction/ Operational Surveys	None
Decommissioning	None

MICHIGAN

BACKGROUND

Contact: Karen Cleveland, Wildlife Biologist, P.O. Box 30444, Lansing, MI 48909-7944

Installed Utility Scale Wind Power: 3 MW

INCENTIVES FOR WIND DEVELOPMENT

Renewable Portfolio Standard: Proposed - 10% by 2015 and 20% by 2025

Incentives for Industrial or "Big Wind" Production:

- Michigan created the NextEnergy economic-development plan to position the state as a world leader in the research, development, commercialization and manufacture of alternative-energy technologies; NextEnergy industry recruitment programs include a non-refundable Business Activity Credit and a Refundable Payroll Credit for businesses certified by the NextEnergy Authority that locate in the NextEnergy Zone.
- The Alternative Energy Personal Property Tax Exemption includes exemptions for alternative energy systems less than 2 megawatts, or integrated combinations of alternative energy systems of no more than 10 megawatts as well as the personal property of an alternative energy technology business - The exemption applies to companies engaged in the manufacturing or research and development of alternative energy technologies and nonresidential alternative technology owners.

Incentives for Residential and "Small Wind" Production:

- The Michigan Public Service Commission (PSC) energy-efficiency grant program, funded by the state's Low-Income and Energy Efficiency Fund, supports the implementation of energy-efficiency projects and renewable-energy projects by businesses, non-profit organizations, government agencies and/or schools.
- Wisconsin Public Power, Inc. (WPPI) utilities (including these Michigan utilities: Alger Delta CEA, Baraga Electric Utility, Gladstone Power & Light, L'Anse Electric Utility, Negaunee Electric Department, and Norway Power & Light) offers rebates for renewable-energy systems to residential and small commercial customers; for qualifying wind-energy systems rated 20 kW or less, eligible customers will receive a rebate equal to 25% of the system's cost, with a maximum incentive of $10,000; customers may also receive a rebate for 75% (up to $375) for a renewable energy site assessment and 50% rebate (up to $2,500) for both routine maintenance as well as major system repairs.

Interconnection and Net Metering Standards:

The Michigan Public Service Commission (PSC) adopted interconnection standards for 5 levels of distributed generation (DG). The maximum size of electric generators eligible for net metering is less than 30 kW, unless a utility voluntarily sets its limit at less than 150 kW (to match size

categories established by the state's interconnection rules). Non-dispatchable generation (e.g. solar and wind) must be sized not to exceed the customer's annual energy needs, measured in kilowatt-hours

ENERGY SITING PROCESS

Power Siting Authority: Local Government manages land use through zoning and ordinances; Some local governmental units (i.e. townships and counties) have adopted local ordinances regarding the siting of wind power.

Wind Specific Siting Authority? No

Code or Regulations: State level: Michigan Tall Structures Act, Michigan Natural Resources and Environmental Protection Act.

Role of State Fish & Wildlife Agency: For projects requiring environmental review, the Department works with developers who contact them to avoid and minimize impacts.

How are wildlife laws applied: Same as any development project. Can require mitigation when Threatened or Endangered Species are involved or on Michigan Department of Natural Resources (DNR) lands.

WILDLIFE GUIDELINES FOR WIND

Wildlife Guidelines for Wind Power Siting: Michigan Siting Guidelines for Wind Energy Systems

Lead Agency on Guidelines: The Energy Office, Michigan Dept. of Labor and Economic Growth

Status of Wildlife Guidelines: Final – December 14, 2005

Summary of Guidelines: Voluntary guidelines provide recommended local zoning ordinances for set back requirements, sound requirements, environmental impact and avian & wildlife impact analysis, etc. Environmental Impact Analysis to assess impacts to natural environment and outline measures to minimize, eliminate or mitigate for impacts; shall comply with appropriate portions of the Michigan Natural Resources and Environmental Protection Act. Avian & Wildlife Impact Analysis, applicants shall have a third party professional to identify and assess any potential impacts on wildlife and endangered species; outlines siting that requires special scrutiny (near high concentrations of birds or bat hibernacula, etc.) must document plans to minimize, eliminate or mitigate for identified impacts. Must comply with federal and state endangered species laws. Includes guidelines for post-construction mortality study. Directs applicants to USFWS Interim Guidance on Avoiding and Minimizing Wildlife Impacts from Wind Turbines.

Web site for Guidelines:
http://www.michigan.gov/documents/Wind_and_Solar_Siting_Guidlines_Draft_5_96872_7.pdf

	Detailed Summary of Michigan's Model Zoning Guidelines
Pre-construction survey	The model zoning language includes specific requirements for habitat and wildlife specific concerns but focus more on safety and impacts to residential communities. Includes requiring an environmental impact analysis conducted by a third party, qualified professional to identify and assess any potential impacts on the natural environment including, but not limited to wetlands and other fragile ecosystems, historical and cultural sites, and antiquities. In addition requires an avian and wildlife impact assessment by a third party, qualified professional to identify and assess any potential impacts on wildlife and endangered species. At a minimum, the analysis shall include a thorough review of existing information regarding species and potential habitats in the vicinity of the project area. Where appropriate, surveys for bats, raptors, and general avian use should be conducted.
Design/Operation Recommendations	Recommends that power lines be placed underground, when feasible, to prevent avian collisions and electrocutions. All above-ground lines, transformers, or conductors should comply with Avian Power Line Interaction Committee published standards to prevent avian mortality. Recommendations for tubular towers covered under the "Visual Impact" section.
Site Development Recommendations	None
Consultation with wildlife agency, USFWS	None
Mitigation requirements	Requires the applicant take appropriate measures to minimize, eliminate or mitigate adverse impacts to the environment and wildlife that are identified in the preliminary analysis. The applicant must identify and evaluate the significance of any net effects or concerns that will remain after mitigation efforts.
Post-Construction/ Operational Surveys	The pre-siting analysis is required to indicate whether a post construction wildlife mortality study will be conducted and, if not, the reasons why such a study does not need to be conducted.

Decommissioning	The applicant is required to submit a decommissioning plan. The plan shall include: 1) the anticipated life of the project, 2) the estimated decommissioning costs net of salvage value in current dollars, 3) the method of ensuring that funds will be available for decommissioning and restoration, and 4) the anticipated manner in which the project will be decommissioned and the site restored.

MINNESOTA

BACKGROUND

Contact: Steven Colvin, Environmental Review Supervisor, DNR - Division of Ecological Resources, 651-259-5082, Steve.Colvin@dnr.state.mn.us

Installed Utility Scale Wind Power: 897 MW

INCENTIVES FOR WIND DEVELOPMENT

Renewable Portfolio Standard: Yes (goal) - 10% by 2015 + Xcel Energy mandate of 1125 MW wind by 2010

Incentives for Industrial or "Big Wind" Production:

- Minnesota issues a payment of 1.0¢ to 1.5¢/kWh for electricity generated by new wind-energy projects less than two megawatts (MW) in capacity. As of May 2006, 211 MW were operating and receiving incentive payments. An additional 13 MW are eligible to receive payments when operational. The program was closed to new applicants on January 1, 2005.
- Minnesota excludes from (real estate) property taxation the value added by solar-electric (PV) or wind systems. However, the land on which a PV or wind system is located is taxable. In addition, all real and personal property of wind-energy systems is exempt from the state's property tax. In lieu of a property tax on large wind-energy systems, a production tax was implemented in 2002. Wind systems greater than 12 MW are taxed at a rate of 0.12 cents/kWh; systems between 2 MW and 12 MW are taxed at a rate of 0.036 cents/kWh; and systems between 250 kW and 2 MW are taxed at a rate of 0.012 cents/kWh. Wind systems under 250 kW are exempt from the production tax.
- Wind-energy conversion systems used as electric-power sources are exempt from Minnesota's sales tax. Materials used to manufacture, install, construct, repair or replace wind-energy systems also are exempt from the state sales tax.

Incentives for Residential and "Small Wind" Production:

- Wind-energy conversion systems used as electric-power sources are exempt from Minnesota's sales tax. Materials used to manufacture, install, construct, repair or replace wind-energy systems also are exempt from the state sales tax.
- Minnesota has a low-interest Agricultural Improvement Loan Program by the Minnesota Rural Finance Authority (RFA) through participating individual lenders that provides loans to farmers for improvements or additions to permanent agricultural facilities including wind-energy systems with a maximum capacity of 1 MW; participation is limited to 45% of the principal amount of the loan or $200,000, whichever is less.
- Minnesota's Energy Investment Loan Program will buy down up to 50% of the loan principal to 0% interest for any specific renewable energy, energy efficiency or energy conservation "capital improvement" measure with a simple payback of 10 years or less in an existing building. Minnesota cities, counties, townships, hospitals and K-12 schools are eligible for this program.

- The Value-Added Stock Loan Participation Program through the RFA is designed to help farmers buy into wind energy and anaerobic-digestion cooperatives, the maximum size of an individual project supported by a wind-energy cooperative is 1 megawatt (MW) - the RFA purchases up to 45% of the loan with an interest rate on the RFA portion of 4.0%.
- Minnesota Power Grant Program offers grants of up to $50,000 to its commercial, industrial, and agricultural customers who use innovative technologies, improve manufacturing processes, undertake renewable electric energy projects or who need project design assistance.

Interconnection and Net Metering Standards:
Minnesota's net-metering law applies to all investor-owned utilities, municipal utilities and rural electric cooperatives. Qualifying facilities up to 40 kilowatts (kW) are eligible for net metering; there is no statewide capacity limit for net metering.

ENERGY SITING PROCESS

Power Siting Authority: Minnesota Public Utility Commission (PUC) issues a Site Permit for a Large Wind Energy Conversion System (LWECS) (> 5MW) - this regulatory authority was transferred to the PUC from the Minnesota Environmental Quality Board in July 2005. New legislation in 2007 would allow counties to assume responsibility for siting LWECSs less than 25MW. The PUC has a specific set of requirements for siting of wind energy facilities (separate from other electric generating facilities). Information on wind siting can be found at: http://energyfacilities.puc.state.mn.us/wind.html.

Wind Specific Siting Authority? Yes

Code or Regulations: Wind siting authority – Minn. Stat. §§ 116C.691-.697; Permitting requirements – Minnesota Rules Chapter 4401

Role of State Fish & Wildlife Agency: The commission requires, among other things, an analysis of the proposed facility's potential environmental and wildlife impacts, proposed mitigative measures, and any adverse environmental effects that cannot be avoided.

How are wildlife laws applied: Much of the wind power development potential is in the southwest portion of the state, so the state conducted one large 4-year avian impact study and a 2-year bat impact study in the area. On the basis of the results of the state-required studies, state and local agencies in Minnesota are not requiring post-construction studies for wind power development in this portion of the state.

STATE ENVIRONMENTAL POLICY ACT

Minnesota Environmental Policy Act - Minnesota Statutes, Ch. 116D, Minnesota Rules, Ch. 4410, 1973

Overview:
Although Minnesota does have a state environmental policy act, the analysis of environmental impacts in a Site Permit Application required through the state wind siting process (Minnesota Statutes Chapter 216F and Minnesota Rules Chapter 7836) satisfies the environmental review

requirements for Minnesota Environmental Policy Act (MEPA) - no Environmental Assessment Worksheets or Environmental Impact Statement are required for Large Wind Energy Conversion System projects. Terms and conditions are outlined in the rule as to the contents of a site permit application including, but not limited to recreational resources, land-based economics, water resources, wildlife, vegetation and rare and unique resources. Items such as pre-construction biological surveys, natural heritage reviews, impact mitigation measures, and prairie management plans are routinely included in the site permits. In addition to these permit requirements, site permit applications include resource information that inventories natural resources in the project area, identifies potential impacts, and proposes methods to avoid or minimize those impacts.

Projects Affected by Law:
The wind siting process applies to Large Wind Energy Conversion Systems, defined as a combination of Wind Energy Conversion Systems with a combined nameplate capacity of 5,000 kilowatts or more.

Public Participation Provisions:
The public has a minimum of 30 calendar days after publication of the draft site permit to provide written comments to the PUC.

Applicability to Wind Development?
No – MEPA does not set statute or rule for Wind siting.

Implementing Agency:
Public Utilities Commission

WILDLIFE GUIDELINES FOR WIND

Wildlife Guidelines for Wind Power Siting: No Guidance

MISSISSIPPI

BACKGROUND

Installed Utility Scale Wind Power: None

INCENTIVES FOR WIND DEVELOPMENT

Renewable Portfolio Standard: No

Incentives for Industrial or "Big Wind" Production:
None

Incentives for Residential and "Small Wind" Production:
TVA Green Power Switch Partners Program - $500 plus $.15/kWh (residential/small-commercial) or $0.20/kWh (large commercial) to purchase entire production of renewable power including wind; systems must be 50 kW or less.

Interconnection and Net Metering Standards:
No net-metering/interconnection standards

ENERGY SITING PROCESS

Power Siting Authority: There isn't much emphasis on wind power development in the state, and wind energy is not specifically covered by any state regulatory authority.

Wind Specific Siting Authority? No

WILDLIFE GUIDELINES FOR WIND

Wildlife Guidelines for Wind Power Siting: No Guidance

MISSOURI

BACKGROUND

Contact: Jane Epperson, Policy Coordination Unit Supervisor, Missouri Department of Conservation, 573-522-4115 ext 3351, jane.epperson@mdc.mo.gov

Installed Utility Scale Wind Power: 4 projects under construction, total of 163 MW.

INCENTIVES FOR WIND DEVELOPMENT

Renewable Portfolio Standard: Yes - Renewable Energy and Energy Efficiency Objective of 11% by 2020

Incentives for Industrial or "Big Wind" Production:
None

Incentives for Residential and "Small Wind" Production:
The Energy Center of the Missouri Department of Natural Resources provides loans for energy efficiency and renewable energy project for K-12 public schools, public higher education facilities, and city and county governments; Loan amounts are based upon projected energy savings.

Interconnection and Net Metering Standards:
Missouri enacted legislation in June 2007 (SB 54) requiring all electric utilities to offer "true" net metering (previously they had a "dual metering" system) to customers with systems up to 100 kilowatts (kW). The new law takes effect on Jan. 1, 2008 and will be available until the total rated generating capacity of net-metered systems equals 5% of a utility's single-hour peak load during the previous year.

ENERGY SITING PROCESS

Power Siting Authority: No governmental entity in the state regulates siting for wind power; the first commercial grade wind system was installed in the state less than 6 months ago. Missouri's Public Service Commission and Department of Natural Resources will likely have review/oversight but no policies are in place yet. Developments would be subject to standard environmental laws including voluntary review for threatened and endangered species through the Heritage database. Projects may be affected by local zoning if local governments have anything in place.

Wind Specific Siting Authority? No

Role of State Fish & Wildlife Agency: Department of Conservation currently has no formal role in the process but would be involved should development impact existing wildlife related laws and are in contact with Department of Natural Resources which is the agency most involved in wind power issues. State can not require mitigation.

WILDLIFE GUIDELINES FOR WIND

Wildlife Guidelines for Wind Power Siting: No Guidance

MONTANA

BACKGROUND

Contact: T.O. Smith, Montana Fish, Wildlife & Parks, 406-444-3889, tosmith@mt.gov

Installed Utility Scale Wind Power: 146 MW

INCENTIVES FOR WIND DEVELOPMENT

Renewable Portfolio Standard: Yes - 15% by 2015

Incentives for Industrial or "Big Wind" Production:

- Montana's Alternative Energy Investment Corporate Tax Credit allows a tax credit for income earned on investments of $5,000 or more in commercial and net metering alternative energy; associated facilities, manufacturing plants producing the alternative energy equipment and industries using the energy generated may use the tax credit and the credit is available to taxpayers purchasing an existing facility as well as to those building a new facility.
- The Corporate Property Tax Reduction for New/Expanded Generating Facilities allows Montana alternative renewable energy generating plants producing 1 megawatt or more are eligible for industry property tax reduction on the local mill levy during the first nine years of operation (subject to approval by the local government); the facility is taxed at 50% of its taxable value in the first five years after the construction permit is issued, the percentage increases each year until the full taxable value is attained in the tenth year. The Generation Facility Corporate Tax Exemption exempts new electricity generating facilities built in Montana with a nameplate capacity of less than 1 MW and using an alternative renewable energy source from property taxes for 5 years after start of operation.
- The Bonneville Environmental Foundation (BEF) provides up to 33% of the funding, through grants, loans, convertible loans, guarantees, and direct investments, for the capital costs for installation of renewable energy, including wind, to local governments, non-profits and tribal governments in the Pacific Northwest (OR, WA, ID, MT); grants and investments may range from a few thousand dollars for small installations, to significant investments in central station grid-connected renewable energy projects.

Incentives for Residential and "Small Wind" Production:

- The Montana Residential Alternative Energy System Tax Credit allows residential taxpayers who install an energy system using a recognized non-fossil form of energy to receive a tax credit equal to the amount of the cost of the system and installation of the system, not to exceed $500; the tax credit may be carried over for the next four taxable years.
- The Northwest Solar Cooperative (NWSC) offers to purchase the rights to the environmental attributes or "Green Tags" derived from grid-connected solar PV- or wind-generated electricity at a rate of $0.05/kWh through December 31, 2009; systems up to 25 kW are automatically approved; > 25 kW approved on case-by-case basis.
- Montana has a residential property tax exemption for recognized renewable energy generation, for single-family residential dwellings the exemption is up to $20,000, for multifamily residential

dwellings or a nonresidential structure the exemption is up to $100,000 and may be claimed for 10 years after installation of the property.
- The Alternative Energy Revolving Loan Program (AERLP) provides 10 year loans of up to $40,000 to individuals, small businesses, local government agencies, units of the university system, and nonprofit organizations to install alternative energy systems that generate energy for their own use.
- NorthWestern Energy's USB Renewable Energy Fund periodically provides funding to its customers for renewable energy projects; the incentive for wind is $2/watt to a maximum of $10,000 per customer.

Interconnection and Net Metering Standards:
Montana's net-metering law allows customers of investor-owned utilities to net meter systems that generate electricity using solar, wind or hydropower systems up to 50 kilowatts (kW). All customer classes are eligible, and no limit on enrollment or statewide installed capacity is specified.

ENERGY SITING PROCESS

Power Siting Authority: Wind power development specifically is generally unregulated at any level of government. However, components of the development may be regulated by the Department of Environmental Quality, for instance if it impacts wetlands, water quality, etc. In addition, if transmission lines greater than 69 kilovolts are necessary a Certificate of Environmental Compatibility might be necessary. Madison County has also enacted an ordinance to regulate the construction of tall towers including Wind Energy Conversion Systems.

Wind Specific Siting Authority? No

Role of State Fish & Wildlife Agency: The Department of Natural Resources and Conservation may require easements or leases when state lands are used or crossed. But Montana Department of Fish, Wildlife & Parks is not specifically included in the process unless there are Threatened & Endangered species issues.

How are wildlife laws applied: Same as any development project.

STATE ENVIRONMENTAL POLICY ACT

Montana Environmental Policy Act **-** MCA Title 75, C. 1, Pts. 1-3, Administrative Rules of Montana (ARM) Ti. 17, Ch. 4, Subch. 6: 17-4-601 through 17-4-636, 1971

Overview:
If an agency's action has a potential impact on the human environment (adverse, beneficial, or both) and if that action is neither categorically excluded (a determination, based on the rulemaking or programmatic review, that the proposed agency action satisfies all of the criteria for exclusion) nor exempt from Montana Environmental Policy Act **"**MEPA" review, then some form of environmental review is required. If it is unclear whether the proposed action may generate impacts that are significant, then an agency may prepare an Environmental Assessment (EA) in order to determine the potential significance and decide if a full Environmental Impact Statement (EIS) is necessary; an EA may also be prepared if it is clear that there will be no significant impact to the

human environment. An EIS is a more detailed evaluation of the project than the EA and should include: a description of the purpose and need for the proposed action; a description of the affected environment; a description and analysis of the alternatives, including the no action alternative; and an analysis of the impacts to the human environment of the different alternatives, including an evaluation of appropriate mitigation measures.

Projects Affected by Law:
A state "action" is defined as a project, program, or activity directly undertaken by a state agency; a project or activity supported through contract, grant, subsidy, loan, or other form of funding assistance from a state agency; or a project or activity involving the issuance of a lease, permit, license, certificate, or other entitlement for use or permission to act by an agency.

Public Participation Provisions:
Public participation is required several times in the process however public participation is discretionary during the EA review and mandatory during the EIS review. During the EIS process, the agency must invite comments on the purpose and need for the pending action (scoping); provide a 30 day comment period on the draft EIS and a 15 day review of the final EIS (all public comments and the agency's response to the comments must be included in the final EIS); and inform the public of the agency's decision and the justification for that decision.

Applicability to Wind Development?
Yes, through permitting process and likely through state funding incentives for wind development.

Implementing Agency:
Environmental Quality Council - created by MEPA, made up of 6 state senators, 6 state representatives, 4 members of the public and 1 nonvoting member representing the governor.

WILDLIFE GUIDELINES FOR WIND

Wildlife Guidelines for Wind Power Siting: Uses US Fish & Wildlife Service's interim guidelines.

Summary of Guidelines: The State Department of Environmental Quality's wind power website (http://deq.mt.gov/Energy/Renewable/WindWeb/indexWindinMT.asp) references the U.S. Fish & Wildlife Service's Interim Guidance and provides information on the Service's recommended ranking system, developed in Montana, that focuses on pre-development evaluation of proposed sites based on the potential impacts to wildlife. These are voluntary recommendations.

NEBRASKA

BACKGROUND

Installed Utility Scale Wind Power: 73 MW

INCENTIVES FOR WIND DEVELOPMENT

Renewable Portfolio Standard: No

Incentives for Industrial or "Big Wind" Production:

- Nebraska offers a production-based Renewable Energy Tax Credit (personal or corporate) to any producer of electricity generated by wind, solar, geothermal, hydropower, fuel cells or methane gas (no limit on size of facility), the credit may be used to reduce income tax liability or for a refund of state sales and use taxes; the credit ranges between $0.0005/kWh and $0.001/kWh depending on the year and can be claimed for 10 years after a facility goes into production, the total amount of renewable energy tax credits that may be used by all taxpayers is limited to $750,000.
- Nebraska's Sales and Use Tax Exemption for Community Wind Projects allows an exemption from the sales and use tax imposed on the gross receipts from the sale, lease, or rental of personal property for use in a community-based energy development (C-BED) project; for a C-BED project that consists of more than two turbines, the project is owned by qualified owners with no single qualified owner owning more than 15% of the project and with at least 33% of the power purchase agreement payments flowing to the qualified owner or owners or local community; or for a C-BED project that consists of one or two turbines, the project is owned by one or more qualified owners with at least 33% of the power purchase agreement payments flowing to a qualified owner or local community.

* Public ownership of electric utilities in Nebraska precludes wind projects from federal wind energy Production Tax Credit.

Incentives for Residential and "Small Wind" Production:
The Dollar and Energy Savings Loans program, adminstered by the Nebraska Energy Office, provides low interest loans for residential and commercial energy efficiency improvements (Residential: $35,000 - $75,000 Non-Residential: $75,000 - $175,000), renewable energy projects are eligible under one of two criteria. A project may be eligible if it is included in a list of "pre-qualified improvements" or if there is an energy audit that verifies that the project will create net energy savings.

Interconnection and Net Metering Standards:
No net-metering/interconnection standards

ENERGY SITING PROCESS

Power Siting Authority: Electric utility facilities are all publicly owned in Nebraska (by historical precedent, not by statute) so wind power facilities must first be approved by the local utility district.

The project is then brought before the Nebraska Power Review Board (PRB) which approves construction for new electric generating facilities; one of the PRB's primary focuses is on ensuring "least cost" construction and power production to reduce costs for rate payers which could undermine some wind development. Local government has authority over small, consumer-scale wind power.

Wind Specific Siting Authority? No

Code or Regulations: Nebraska Power Review Board authority: Neb. Rev. Stat. §§ 70-1001 through 70-1027; construction review: §§ 70-1012 through 1014

Role of State Fish & Wildlife Agency: Environmental review and considerations do not appear to be part of the Power Review Board permitting process.

WILDLIFE GUIDELINES FOR WIND

Wildlife Guidelines for Wind Power Siting: No Guidance

NEVADA

BACKGROUND

Contact: Shawn Espinosa, Nevada Department of Wildlife, sespinosa@ndow.org, 1100 Valley Road Reno, NV 89512

Installed Utility Scale Wind Power: None, 3 projects proposed.

INCENTIVES FOR WIND DEVELOPMENT

Renewable Portfolio Standard: Yes - 20% by 2015

Incentives for Industrial or "Big Wind" Production:

- Nevada's Portfolio Energy Credits (PEC) are a production incentive that can be earned by any renewable energy producer (1 PEC/kWh for renewables other than solar) and can then be sold to utilities to allow utilities to meet their renewable portfolio standards.
- Renewable Energy Producers Property Tax Abatement is a 10-year 50% abatement in real and personal property taxes for renewable electricity generation facilities.

Incentives for Residential and "Small Wind" Production:

- Nevada's Portfolio Energy Credits (PEC) are a production incentive that can be earned by any renewable energy producer (1 PEC/kWh for renewables other than solar) and can then be sold to utilities to allow utilities to meet their renewable portfolio standards.
- Renewable Energy Property Tax Exemption allows any value added by a qualified renewable energy system to be subtracted from the assessed value of any residential, commercial or industrial building for property tax purposes.

Interconnection and Net Metering Standards:
The Nevada Public Utilities Commission (PUC) has interconnection standards for customers of Nevada Power and Sierra Pacific Power with on-site generation up to 20 megawatts (MW) in capacity. In addition, net-metering is available to systems up to 1 MW in capacity although systems greater than 100 kilowatts (kW) in capacity may be subject to certain costs at the utility's discretion.

ENERGY SITING PROCESS

Power Siting Authority: Because much of Nevada is federally owned public lands, federal agency (BLM, FWS, NPS, etc.) requirements and NEPA could affect much wind development in the state. Public Utilities Commission of Nevada issues a permit for construction of electrical facilities, this includes renewable energy generating facilities greater than 150 KW.

Code or Regulations: NRS 704.820 through 704.900

Wind Specific Siting Authority? No

Role of State Fish & Wildlife Agency: Department of Natural Resources has integrated resource management and joint environmental review for projects

How are wildlife laws applied: Utility regulator considers trade-offs and decides. State does not have the authority to require mitigation.

WILDLIFE GUIDELINES FOR WIND

Wildlife Guidelines for Wind Power Siting: Use US Fish & Wildlife Service interim guidelines as well as Oregon and Washington state guidelines.

NEW HAMPSHIRE

BACKGROUND

Contact: Michael Marchand, Wildlife Biologist, NH Fish & Game, michael.marchand@wildlife.state.nh.us, 11 Hazen Drive, Concord NH 03301

Installed Utility Scale Wind Power: 1 MW

INCENTIVES FOR WIND DEVELOPMENT

Renewable Portfolio Standard: Yes - 23.8% by 2025

Incentives for Industrial or "Big Wind" Production:
The New Hampshire Business Resource Center and Ocean National sponsor the Renewable Energy and Energy Efficiency Business Loan Program that offers small businesses a reduced interest rate loan of at least $10,000 for the purchase of renewable energy systems and energy efficiency improvements.

Incentives for Residential and "Small Wind" Production:
New Hampshire allows each city and town to offer an exemption on residential property taxes in the amount of the assessed value of a renewable-energy system used on the property.

Interconnection and Net Metering Standards:
Net metering is available to all electric-generating systems powered by "renewable" energy with a maximum system capacity of 100 kW and the aggregate capacity of net-metered systems in a utility's service territory is 1.0% of the utility's annual peak energy demand.

ENERGY SITING PROCESS

Power Siting Authority: New Hampshire Energy Facility Siting Evaluation Committee (SEC) provides a Certificate for Site and Facility for energy facilities over 30 MW; developers of facilities less than 30 MW can opt-in to the SEC process to preempt local jurisdiction or to access the aggressive schedule (within 9 months from application) that the SEC is required to pursue. If not going through the SEC process, wind development would fall under local jurisdiction. The state is currently going through their first wind power siting evaluation.

Wind Specific Siting Authority? No

Code or Regulations: RSA 162-H

Role of State Fish & Wildlife Agency: The Executive Director of the New Hampshire Fish & Game Department (NHFG) is one of 15 officials from 8 state agencies that sit on the Siting Evaluation Committee. NH Fish & Game Department has review of the project for impacts to

wildlife especially threatened & endangered species. Department of Environmental Services is responsible for wetlands, alteration of terrain

How are wildlife laws applied: The siting application includes an evaluation of potential impacts on the environment and plans to study and resolving environmental problems.

WILDLIFE GUIDELINES FOR WIND

Wildlife Guidelines for Wind Power Siting: Proposed guidance, using Vermont's guidance as a basis.

Lead Agency on Guidelines: A stakeholders group led by NH Audubon and Appalachian Mountain Club (AMC) with representatives from NHFG, USFWS, non-profits (Audubon, AMC, TNC) and wind representatives is drafting the guidelines.

Status of Wildlife Guidelines: Preliminary draft submitted by Wind Energy Facility Siting Guidelines Working Group on May 29 2007 to NH Energy Policy Committee Wind Siting Subcommittee for review.

Summary of Guidelines: Evaluation of whether project is likely or less likely to have major impacts. Projects are placed into categories. For wildlife, pre- and post-monitoring studies are outlined.

	Detailed Summary of New Hampshire's Draft Voluntary Guidelines
Pre-construction survey	Proposed guidelines recommend preliminary consultation with a proposed state coordinator to evaluate initial data collection needs. After initial data compilation, the developer should do a pre-application consultation with a proposed wind power advisory group to make a preliminary assessment on the proposal's suitability and concerns for resources, and to then provide recommendations for more complete studies necessary for the project. The proposed guidelines then include a detailed overview of resource and social issues that should be considered including rare plants, natural communities, soils and topography, water and wetlands, wildlife, existing land use and infrastructure, recreational use, etc. For wildlife, required pre-permitting surveys should include radar and acoustical surveys of birds and bats for at least one year; visual surveys for diurnal migrating birds and bats for a minimum of one spring and one fall season; breeding bird surveys for a minimum of one breeding season. Recommended surveys for wildlife (only if deemed necessary from initial data compilation) should include surveys for rare, threatened or endangered species, identification of suitable habitat for lynx and marten, surveys for small footed bat, March to August surveys of peregrine falcons and mapping of beech, oak and mountain ash occurrence.
Design/Operation Recommendations	None

Site Development Recommendations	None
Consultation with wildlife agency, USFWS	None
Mitigation requirements	None
Post-Construction/ Operational Surveys	None
Decommissioning	None

NEW JERSEY

BACKGROUND

Contact: Dave Golden, dgolden@gtc3.com; Ted Nichols: tnichols@gtc3.com

Installed Utility Scale Wind Power: 8 MW

INCENTIVES FOR WIND DEVELOPMENT

Renewable Portfolio Standard: Yes – 22.5% by 2021

Incentives for Industrial or "Big Wind" Production:

- New Jersey's Renewable Energy Business Venture Assistance Program (REBVAP) provides recoverable grants of $50,000 to $500,000 for the development of businesses, technologies, service and market infrastructure in support of the state's renewable-energy industry; the program budget is approximately $5 million and there is a 25% cost-share requirement.
- New Jersey offers a full exemption from the state's 7% sales tax for all solar and wind energy equipment. This exemption is available to all taxpayers.

Incentives for Residential and "Small Wind" Production:

- New Jersey offers a full exemption from the state's 7% sales tax for all solar and wind energy equipment. This exemption is available to all taxpayers.
- New Jersey has a Clean Energy Rebate Program for renewable energy systems where output will not exceed 100% of energy used by the building or home, wind systems are currently eligible for incentive levels beginning at $5 per watt (60% maximum) for systems up to 10 kW in capacity.
- Larger systems receive incrementally lower rebate amounts, with a 30% maximum. (Single-family rebate applications are limited to the first 10 kW of project capacity.)

Interconnection and Net Metering Standards:
Residential and small commercial wind systems up to 2 megawatts (MW) in capacity are eligible for net metering up to 0.1% of state peak demand or total impact of $2 million. New Jersey's interconnection standards are widely considered to be among the best in the United States.

Power Siting Authority: Department of Environmental Protection (NJDEP) through environmental regulations. Local governments through planning/zoning commission. Most wind power potential is offshore and would be subject to state coastal zone management rules.

Wind Specific Siting Authority? No

Code or Regulations: NJDEP Coastal Zone Management Rules

Role of State Fish & Wildlife Agency: Agency is a primary decision-maker regarding siting.

STATE ENVIRONMENTAL POLICY ACT

Executive Order 215 (Kean, 1989) - §§ 7:22-10.1 to 7:22-10.12 of the NJ Administrative Code provides the guidelines on environmental assessment for projects receiving state funding, 1989

Overview:
Level I projects (anticipated construction costs in excess of $1 million) are subject to the preparation of an environmental assessment; Level 2 projects (both construction costs in excess of $5 million and land disturbance in excess of five acres) are subject to the preparation of an environmental impact statement. An EIS should include the purpose and need for the proposed project; a detailed evaluation of all alternatives and an identification of the preferred alternative; a description of the environmental consequences including unavoidable adverse impacts and mitigation alternatives.

Projects Affected by Law:
Applies to projects directly initiated by departments, agencies, or authorities of the State, as well as projects in which the State departments, agencies or authorities are granting at least 20 percent financial assistance

Public Participation Provisions:
A public informational meeting is required for a draft EIS at least 30 days after it is published, and the Department of Environmental Protection must accept comments for 15 days following the meeting - a similar process is required for the final EIS. The DEP is required to make a decision on a project within 60 days of receiving a final EA or EIS

Applicability to Wind Development?
Only if wind project is receives state funding (the state does have incentives for wind power development) or it is on state land.

Implementing Agency:
Department of Environmental Protection

WILDLIFE GUIDELINES FOR WIND

Wildlife Guidelines for Wind Power Siting: No Guidance

NEW MEXICO

BACKGROUND

Contact: Matthew Wunder, Division Chief, Conservation Services Division, New Mexico Department of Game and Fish, 505-476-8101, matthew.wunder@state.nm.us

Installed Utility Scale Wind Power: 496 MW

INCENTIVES FOR WIND DEVELOPMENT

Renewable Portfolio Standard: Yes - Investor-owned utilities: 20% by 2020; Rural electric cooperatives: 10% by 2020

Incentives for Industrial or "Big Wind" Production:

- Corporate Renewable Energy Production Tax Credit of $.01/kWh for wind and biomass, up to 400,000 MWh per year for 10 years, for producers of greater than 1 MW of renewable energy - can not claim both the personal credit and the corporate credit.
- The Alternative Energy Product Manufacturers tax credit of up to 5% of taxpayer's qualified expenditures may be claimed for manufacturing alternative energy products and components.

Incentives for Residential and "Small Wind" Production:
Personal Renewable Energy Production Tax Credit of $.01/kWh for wind and biomass, up to 400,000 MWh per year for 10 years, for residential systems producing of greater than 1 MW of renewable energy - can not claim both the personal credit and the corporate credit.

Interconnection and Net Metering Standards:
Interconnection standards for facilities up to 80 MW, and simplified rules for small residential facilities up to 10 kW.

ENERGY SITING PROCESS

Power Siting Authority: The New Mexico Public Regulation Commission has jurisdiction over electricity generating projects over 300 MW (so far there are no wind projects of this size but some may be developed soon). For projects less than 300 MW in size and producing no emissions, there is no official process for review by the New Mexico Public Regulation Commission. Counties regulate wind power siting through zoning approval, requirements vary by county. Building permits from the Construction Industries Division (CID) of the New Mexico Regulation and Licensing Department are necessary for all wind power developments in the state.

Wind Specific Siting Authority? No

Role of State Fish & Wildlife Agency: The state recommends a "fatal flaw" analysis, similar to general NEPA guidelines, to assess specific siting considerations including wildlife; developers are recommended to consult with the New Mexico Game & Fish Department in this process.

WILDLIFE GUIDELINES FOR WIND

Wildlife Guidelines for Wind Power Siting: Impacts of Wind Energy Development on Wildlife

Lead Agency on Guidelines: New Mexico Game & Fish Department (NMGFD)

Status of Wildlife Guidelines: January, 2004; NMGFD expects to update the guidelines in 2008.

Summary of Guidelines: Based on the U.S. Fish & Wildlife Service's Interim Guidance, the New Mexico Game & Fish Department's voluntary guidelines focus on Site Development recommendations and Turbine Design and Operation recommendations. The Siting recommendations focus on avoiding important wildlife habitat including bird migration pathways, bat hibernacula, etc. The guidelines specifically recommend avoiding known Lesser Prairie Chicken habitat recommending a 5 mile buffer from known leks. In addition, habitat restoration and mortality studies post-construction are encouraged. The turbine design component references both the FWS guidance and NMGFD guidelines on towers and power line trenching. Recommend and focuses on specific design concepts to minimize roosting and avoid air strikes. Seasonal shut-downs during migratory times are encouraged as necessary.

In addition, The NM Energy, Minerals & Natural Resources Department (http://www.emnrd.state.nm.us/ecmd/Wind/wind.htm) publishes four documents for wind energy project proponents. The Guidelines for Developers and Investors and the Screening Model do not mention wildlife resources. The Wind Development Handbook mentions them peripherally in the context of "Fatal Flaw Analysis." The Case Study Report describes a "Phase I Avian Risk Assessment" (literature review, consultation, site survey) and identifies the likely need for further survey activity.

Web site for Guidelines:
http://www.wildlife.state.nm.us/conservation/habitat_handbook/WindEnergyGuidelines.htm

	Detailed Summary of New Mexico's Voluntary Guidelines
Pre-construction survey	None
Design/Operation Recommendations	Design recommendations in New Mexico are adapted from the USFWS Interim Guidelines. Recommends using tubular supports with pointed tops rather than lattice supports and avoiding external ladders, platforms on tubular towers and guy wires for turbine or meteorological tower support. Guy wires should be marked with recommended bird deterrent devices. Recommends lighting should conform to minimum FAA requirements and only the minimum number, minimum intensity, and minimum number of flashes per minute of white strobe lights should be used at night. Where the height of the rotor-swept area produces a high risk for wildlife, tower heights should be adjusted where feasible to reduce the risk of strikes, and

	electric power lines should be placed underground or on the surface as insulated, shielded wire to avoid electrocution of birds.
Site Development Recommendations	New Mexico's site development guidelines have been adapted from the USFWS Interim Guidelines. This includes: avoiding placing turbines in documented locations of any species of wildlife, fish or plant protected under the Federal Endangered Species Act; avoid locating turbines in known local bird migration pathways or in bird concentration areas; avoid placing turbines near known bat hibernation, breeding, and maternity/nursery colonies, in migration corridors, or in flight paths between colonies and feeding areas; configure turbine locations to avoid areas or landscape features known to attract raptors; configure turbine arrays to avoid potential avian mortality where feasible; avoid fragmenting large, contiguous tracts of undisturbed or native wildlife habitat; avoid placing turbines in habitat known to be occupied by Lesser Prairie Chickens (avoid placing turbines within 5 miles of known leks) or other species that exhibit extreme avoidance of vertical features and/or structural habitat fragmentation; minimize roads, fences, and other infrastructure; develop a habitat restoration plan for proposed sites that avoids or minimizes negative impacts on vulnerable wildlife while maintaining or enhancing habitat values for other species; reduce carrion to avoid attracting Golden Eagles and other raptors.
Consultation with wildlife agency, USFWS	None
Mitigation requirements	None
Post-Construction/ Operational Surveys	Post-development mortality studies should be a part of any site development plan in order to determine if or to what extent mortality occurs. Where high seasonal concentrations of birds occur in areas with critical power generation, an average of three years monitoring data (e.g., acoustic, radar, infrared, or observational) should be collected and used to determine peak use dates for specific sites. Where feasible, turbines should be shut down during periods when birds are highly concentrated at those sites. When upgrading or retrofitting turbines, mortality studies should be used to retrofit or relocate older turbines that have had high mortality at specific older turbines.
Decommissioning	None

NEW YORK

BACKGROUND

Contact: Brianna Gary, Avian Ecologist, NYSDEC, 518-402-8858, bmgary@gw.dec.state.ny.us, 625 Broadway, 5th Floor, Albany, NY 12233-4756

Installed Utility Scale Wind Power: 390 MW

INCENTIVES FOR WIND DEVELOPMENT

Renewable Portfolio Standard: Yes - 25% by 2013

Incentives for Industrial or "Big Wind" Production:
The New York State Energy Research and Development Authority's (NYSERDA) Renewable Energy Technology Manufacturing Incentive Program is designed to expand in-state manufacturing of electricity-generating, clean-energy products; total of $10 million is available with a maximum project award is $1 million and a minimum 75% cost-share is required.

Incentives for Residential and "Small Wind" Production:
- Qualifying energy-conservation improvements (including wind power) to single-family or up to 4-family homes are exempt from property tax on the increased value of the home.
- Solar, Wind & Biomass Energy Systems Property Tax Exemption is a 15-year exemption from real property taxes for these systems applicable to commercial, industrial, residential and agricultural sectors.
- The New York Energy $mart Loan Fund, administered by the New York State Energy Research and Development Authority (NYSERDA), provides reduced-interest rate loans to finance renovation or construction projects that incorporate renewable energy systems; any commercial, industrial, retail, agricultural, non-profit, residential, or multifamily facility that is an electric distribution customer of one of the State's six investor-owned utilities is eligible. NYSERDA also offers an unsecured loan (100% of costs up to $20,000) for the installation of qualified energy efficient and renewable energy measures in private residences.
- NYSERDA provides incentives of up to $150,000 per site for wind systems 800 W to 250 kW; incentives vary based on specific model and the classification of the wind system owner; incentive paid directly to qualified installer and then passed on to owner.
- The NYSERDA Peak Load Reduction Program provides a wide variety of incentives for reducing electricity use during peak times including permanent demand reduction from wind systems and other renewable systems that have been in place for more than 5 years with proven energy reduction; minimum project size of 20 kW to 100 kW so focuses on buildings with large consumption - program participants can receive the lesser of 65% of project costs or $300/kW to $600/kW depending on location.

Interconnection and Net Metering Standards:
New York has interconnection standards for systems up to 2 MW. Net-metering is available to residential wind turbines up to 25 kW and farm-based wind turbines up to 125 kW (other

renewables have different thresholds), customers can participate on a first-come, first-served basis until aggregate wind system capacity is 0.2% of 2003 demand.

ENERGY SITING PROCESS

Power Siting Authority: Local government manages land use including wind energy development through zoning permits within requirements for state and local environmental review; State Public Service Commission approves construction of facilities over 80 MW.

Wind Specific Siting Authority? No

Role of State Fish & Wildlife Agency: Dept. of Environmental Conservation will participate in environmental review of project but may not have discretionary authority over siting

STATE ENVIRONMENTAL POLICY ACT

State Environmental Quality Review Act - Environmental Conservation Law Sections 3-0301(1)(B), 3-0301(2)(M) and 8-0113, 6 NYCRR Part 617, 1978

Overview:
New York's State Environmental Quality Review Act (SEQR) requires all state and local government agencies to consider environmental impacts equally with social and economic factors during discretionary decision-making. This means these agencies must assess the environmental significance of all actions they have discretion to approve, fund or directly undertake. SEQR outlines Type I projects (those that may meet the threshold for environmental review but may not need an EIS; e.g. nonresidential projects physically altering 10 or more acres of land or zoning changes affecting 25 or more acres) and Type II (those that are exempt from environmental review). If an action is determined to have potentially significant adverse environmental impacts, an Environmental Impact Statement is required. The SEQR process uses the EIS to examine ways to avoid or reduce adverse environmental impacts related to a proposed action including an analysis of all reasonable alternatives to the action. SEQR requires the sponsoring or approving governmental body to identify and mitigate the significant environmental impacts of the activity it is proposing or permitting.

Projects Affected by Law:
SEQR applies to all state or local government agencies including districts and special boards and authorities whenever they must approve or fund a privately or publicly sponsored action. It also applies whenever an agency directly undertakes an action. Applicants who seek project approval or funding may be responsible for preparing an EIS.

Public Participation Provisions:
After a draft environmental impact statement is filed, the public has at least 30 days to comment on the project, the comment period must continue 10 days after the public hearing if one is held. A hearing must be held within 60 days from the filing of the DEIS, but at least 15 days after a notice of the public hearing is published.

Applicability to Wind Development?
Yes, through local government permitting process.

Implementing Agency:
SEQR is self-enforcing, each agency of government is responsible to see that it meets its own obligations to comply. The Department of Environmental Conservation issues regulations, but has no oversight.

WILDLIFE GUIDELINES FOR WIND

Wildlife Guidelines for Wind Power Siting: Draft Guidelines, currently not public.

Lead Agency on Guidelines: New York State Department of Environmental Conservation

Summary of Guidelines: NYS Department of Environmental Conservation is in the process of developing voluntary guidelines for conducting pre-and post-construction bird and bat studies at proposed and operating wind projects. A draft is currently under review by staff biologists, and will be available for public comment prior to finalizing the document.

NORTH CAROLINA

BACKGROUND

Installed Utility Scale Wind Power: None

INCENTIVES FOR WIND DEVELOPMENT

Renewable Portfolio Standard: Yes - 12.5% of 2020 retail sales by 2021 for investor-owned utilities; 10% of 2017 retail sales by 2018 for electric cooperatives and municipal utilities

Incentives for Industrial or "Big Wind" Production:
NC GreenPower Production Incentive Payment offers production payments for grid-tied renewable electricity producers less than 10 MW including wind, generators are required to enter into power-purchase agreements with their utility and with NC GreenPower; the incentives, which include payments from utility power-purchase agreements, are made on a per-kWh basis and vary by technology.

Incentives for Residential and "Small Wind" Production:

- Renewable Energy Tax Credit provides for a tax credit of 35% of the cost of renewable energy property (including wind, maximum of 35 kWh battery storage capacity per kW) installed during the tax year, may not exceed 50% of a taxpayer's liability for the year - maximum of $10,500 for residential use; maximum of $2,500,000 on commercial and industrial facilities.
- TVA Green Power Switch Partners Program - $500 plus $.15/kWh (residential/small-commercial) or $0.20/kWh (large commercial) to purchase entire production renewable power including wind; systems must be 50 kW or less.
- The Energy Improvement Loan Program (EILP) provides loans with an interest rate of 1% for certain renewable-energy projects (including wind) to North Carolina businesses, local governments, public schools and nonprofit organizations.

Interconnection and Net Metering Standards:
North Carolina has net-metering and interconnection standards that allow small power producers (up to 20 kW residential and 100 kW for non-residential) to connect to utilities power grid up to an aggregate limit of 0.2% of the utility's North Carolina retail peak load for the previous year.

ENERGY SITING PROCESS

Power Siting Authority: North Carolina Utilities Commission (NCUC) provides a certificate of public convenience and necessity for energy producing facilities including small renewable energy power producers less than 80 MW. Small wind energy facilities are typically handled by County Planning Boards, specific consideration or ordinances relating to wind power are variable. Watauga county has an ordinance in place for permitting small facilities

Wind Specific Siting Authority? No

Code or Regulations: NCUC Rule R1-37 requires a certificate of public convenience and necessity for small energy producers defined in General Statute 62-3(27a) to include renewable power producers less than 80 MW.

STATE ENVIRONMENTAL POLICY ACT

North Carolina Environmental Policy Act (SEPA) - North Carolina General Statutes, Ch. 113A, §§ 113A-1 to 113A-13, North Carolina Administrative Code, Title 15a, Ch. 01, Subch. 01C.0101-0411 (1 NCAC 25), 1971

Overview:
Most North Carolina State agencies have developed rules establishing minimum thresholds based on the size and type of the project or activity. In cases where the project or activity falls below the minimum threshold, agencies may be exempt from SEPA, or they may be required to submit only general environmental information. However, if there is reasonable evidence that a project or activity has significant impacts, a state agency can call for an environmental document to be prepared, even if it is normally listed as exempt from SEPA. The process may start with an Environmental Assessment (EA) which is a brief outline of the project and potential impacts, upon review the project will be granted a Finding of No Significant Project or will be required to develop a full Environmental Impact Statement.

Projects Affected by Law:
Every state agency is subject to SEPA. Any project meeting all the following "triggers" is subject to SEPA: (1) the project is carried out with public funds (any expenditure on the project by federal, state, local, or quasi-public entities) and/or uses state land, (2) a project requires a state approval action (licensing, certification, permitting, etc.) in order to be implemented, and (3) a project has the potential for an environmental impact.

Public Participation Provisions:
Public notification of the environmental documents available for review is through the Environmental Bulletin distributed by the Clearinghouse. Upon review of the comments received, the DOA submits a recommendation back to the state agency making the SEPA compliance review; this process typically takes between 30 and 45 days.

Applicability to Wind Development?
Yes, when development requires state permits.

Implementing Agency:
The State Environmental Review Clearinghouse in the Department of Administration is responsible for daily implementation and administration of the SEPA review process.

WILDLIFE GUIDELINES FOR WIND

Wildlife Guidelines for Wind Power Siting: No Guidance

NORTH DAKOTA

BACKGROUND

Contact: John Schumacher, Resource Biologist, ND Game & Fish Dept, (701) 328-6321, jdschumacher@nd.gov

Installed Utility Scale Wind Power: 178 MW

INCENTIVES FOR WIND DEVELOPMENT

Renewable Portfolio Standard: Yes - Renewable and Recycled Energy Objective of 10% by 2015

Incentives for Industrial or "Big Wind" Production:
North Dakota reduces property taxes by 70% for wind facilities of 100 kW or larger. To be eligible, construction must begin by January 1, 2011. The state also has a sales tax exemption for these systems.

Incentives for Residential and "Small Wind" Production:

- North Dakota allows any taxpayer -- an individual or corporation – to claim an income tax credit of 3% per year for five years for the cost of equipment and installation of a system that generates electricity using geothermal, solar, biomass or wind energy and that is installed after December 31, 2000.
- North Dakota exempts any solar, wind, or geothermal energy device from local property taxes for 5 years after installation.

Interconnection and Net Metering Standards:
North Dakota's net-metering rules apply both to renewable-energy generators and cogenerators (combined-heat-and-power systems) up to 100 kilowatts (kW) in capacity; available to all customer classes, and there is no statewide limit on the total capacity of all net-metered systems. There are no specific interconnection standards in the state.

ENERGY SITING PROCESS

Power Siting Authority: North Dakota Public Service Commission (PSC) regulates siting of wind power facilities greater than 100 MW by providing a Certificate of Site Compatibility, facilities smaller than 80 MW may choose to receive certification by the PSC. Smaller facilities may be regulated by local zoning but this is highly variable by township or county board.

Wind Specific Siting Authority? Yes

Code or Regulations: North Dakota Administrative Code, Title 69-06

Role of State Fish & Wildlife Agency: The Game & Fish Department has joint environmental review and is one of 21 designated state agencies entitled to receive notice on energy facility siting reviewed by PSC (69-06-01-05).

How are wildlife laws applied: Same as any other utility project. The PSC can require mitigation as part of the permitting process for facilities greater than 100 MW.

WILDLIFE GUIDELINES FOR WIND

Wildlife Guidelines for Wind Power Siting: Uses US Fish & Wildlife Service's interim guidelines.

OHIO

BACKGROUND

Installed Utility Scale Wind Power: 7 MW

INCENTIVES FOR WIND DEVELOPMENT

Renewable Portfolio Standard: No

Incentives for Industrial or "Big Wind" Production:

- Ohio exempts certain property used in "energy conversion" (i.e. replacement of fossil-fuel resources with alternative fuels or technologies) from real and personal property taxation, the state's sales and use tax, and the state's corporate franchise tax where applicable; upon receipt of certification from the tax commissioner, such property is exempt from Ohio's sales and use tax, is not considered to be an improvement on the land for purposes of real property taxation or as 'used in business' for purposes of personal property taxation and is also not considered in the assessment of Ohio's corporate franchise tax.
- The Ohio Wind Production & Manufacturing Incentive Program provides production-based incentives to utility-scale wind-energy projects (more than five megawatts) and to community wind-energy projects (500 kilowatts to five megawatts); the incentive rate varies, in 2007 generators will receive a production incentive of $0.01 per kilowatt-hour (kWh) for up to five years, or until the entire amount of the grant approved has been earned by the wind-energy project, whichever occurs first. A higher incentive rate of $0.012 was available for projects that utilize "Ohio-manufactured" (at least 30% manufactured in OH) wind turbines.

Incentives for Residential and "Small Wind" Production:

- The Ohio Department of Development's Office of Energy Efficiency (OEE) offers grants through the Energy Loan Fund for the installation of new non-residential or residential renewable-energy projects; non-residential wind-energy systems are eligible for a grant of $2.50 per watt. The maximum grant award for a wind-energy system is $150,000 or 50% of the project's cost, whichever is less; residential wind-energy systems are eligible for a grant of $2.50 per watt or 50% of the project's cost, whichever is less. The maximum grant award for a wind-energy system is $25,000.
- The Renewable Energy Loan Program reduces the interest rate, by approximately half, on standard bank loans for qualifying Ohio residents and businesses that borrow money to implement energy efficiency projects or renewable energy projects; loans for residential projects range from $500 to $25,000, whereas loans for commercial and institutional projects range from $5,000 to $500,000.

Interconnection and Net Metering Standards:

Ohio's interconnection standards provide for three levels of review for the interconnection of distributed generation systems up to 20 megawatts (MW) in capacity. Ohio's net-metering law

requires electric distribution utilities and competitive retail electric service providers to offer net metering to customers who generate electricity using wind energy, solar energy, biomass, landfill gas, hydropower, fuel cells or microturbines, a net-metered system must be "intended to offset part or all of the customer-generator's electricity requirements", each utility is only required to offer net metering until the total generating capacity of all participating customers equals 1% of the utility's aggregate customer peak demand in Ohio.

ENERGY SITING PROCESS

Power Siting Authority: Ohio Power Siting Board (OPSB) must provide a certificate of environmental compatibility and public need prior to construction of major utility facility (50 MW or more). Smaller facilities fall under local jurisdiction.

Wind Specific Siting Authority? No

Code or Regulations: Siting of major facilities is guided by Ohio Revised Code, Chapter 4906 and Ohio Administrative Code, Chapter 4906.

Role of State Fish & Wildlife Agency: Ohio Department of Natural Resources (ODNR) is a member of OPSB

WILDLIFE GUIDELINES FOR WIND

Wildlife Guidelines for Wind Power Siting: 1) Siting New Energy Infrastructure in Ohio - A Guidance Document (General Siting Manual) 2) Summary of the Ohio Dept. of Natural Resources Authorities & Guidance for the Siting & Operation of Wind Power Generating Facilities in Ohio

Status of Wildlife Guidelines: OPSB Manual - February 2005; ODNR Guidance - 11/21/05 Draft

Summary of Guidelines: Ohio has two documents that are relevant to wind siting. The first is a manual developed by the Ohio Power Siting Board that outlines the process including application, review, hearings etc. for receiving approval to develop a major utility facility. This siting manual does not provide details on wildlife or environmental concerns, but lists the ODNR divisions that might review siting proposals. The ODNR Guidance provides general guidance of the permits, project reviews, authorities, etc. within the Divisions and Offices of ODNR as they relate to the siting and operation of wind power generating facilities. The guidance outlines how each division/office might be involved in reviewing permits and environmental assessments for each project and provides the codes and authorities that relate to specific areas of concern. This is a more detailed overview of a table that is included in the OPSB Siting Manual.

Web site for Guidelines: OPSB Siting Manual - http://www.puco.ohio.gov/emplibrary/files/media/OPSB/OhioSitingManual.pdf

OKLAHOMA

BACKGROUND

Contact: Russ Horton, Lands & Wildlife Diversity Supervisor, OK Dept. of Wildlife Conservation, (405) 202-5901, rhorton270@sbcglobal.net,

Installed Utility Scale Wind Power: 595 MW

INCENTIVES FOR WIND DEVELOPMENT

Renewable Portfolio Standard: No - Legislation has been introduced but has failed to pass so far

Incentives for Industrial or "Big Wind" Production:
Oklahoma's Zero-Emission Facilities Production Tax Credit provides a state income tax credit of between $0.0025/kWh - $0.0075/kWh (amount varies depending on when the facility is placed in operation and when electricity is generated) for 10 years for a facility tbat sells its power and has a rated production capacity of one megawatt (1 MW) or greater

Incentives for Residential and "Small Wind" Production:
Oklahoma offers an income tax credit to the manufacturers of small wind turbines (rated capacity of between 1 kW and 50 kW) of $25 per square foot for the rotor swept area; the turbine must incorporate advanced technologies such as new airfoils, new generators, and new power electronics and at least one unit of each model must have been installed for testing at the US-DOE National Wind Technology Center

Interconnection and Net Metering Standards:
Net metering is available to all customer classes in Oklahoma with a system size of 100 kW or 25,000 kWh/year (whichever is less); there is no limit on the amount of aggregate net-metered capacity. There are no specific interconnection standards in Oklahoma.

ENERGY SITING PROCESS

Power Siting Authority: Wind power can go through voluntary review by the Oklahoma Corporation Commission.

Wind Specific Siting Authority? No

How are wildlife laws applied: Same as any other utility project. State has the authority to require mitigation.

WILDLIFE GUIDELINES FOR WIND

Wildlife Guidelines for Wind Power Siting: Uses US Fish & Wildlife Service's interim guidelines.

OREGON

BACKGROUND

Contact: Rose Owens, Habitat Special Projects Coordinator, Oregon Department of Fish and Wildlife, 503-947-6085, rose.m.owens@state.or.us

Installed Utility Scale Wind Power: 438 MW

INCENTIVES FOR WIND DEVELOPMENT

Renewable Portfolio Standard: Yes - Large utilities: 25% by 2025; Small utilities: 10% by 2025; Smallest utilities: 5% by 2025.

Incentives for Industrial or "Big Wind" Production:
The Bonneville Environmental Foundation (BEF) provides up to 33% of the funding, through grants, loans, convertible loans, guarantees, and direct investments, for the capital costs for installation of renewable energy, including wind, to local governments, non-profits and tribal governments in the Pacific Northwest (OR, WA, ID, MT); grants and investments may range from a few thousand dollars for small installations, to significant investments in central station grid-connected renewable energy projects.

Incentives for Residential and "Small Wind" Production:

- Oregon's Business Energy Tax Credit (BETC) is for investments in energy conservation, recycling, renewable energy resources, or less-polluting transportation fuels, the 35% tax credit is taken over five years: 10% the first and second years and 5% for each year thereafter, any unused credit can be carried forward up to eight years; those with eligible project costs of $20,000 or less may take the tax credit in one year.
- The Residential Energy Tax Credit is available to homeowners and renters who invest in energy efficiency or purchase renewable energy systems; Solar space and water heating systems, wind systems, and fuel cells are eligible for a credit of 60 cents per kWh saved during the first year, up to $1,500.
- The Northwest Solar Cooperative (NWSC) offers to purchase the rights to the environmental attributes or "Green Tags" derived from grid-connected solar PV- or wind-generated electricity at a rate of $0.05/kWh through December 31, 2009; systems up to 25 kW are automatically approved; > 25 kW approved on case-by-case basis.
- Oregon's property tax exemption states that the added value to any property from the installation of a qualifying renewable energy system not be included in the assessment of the property's value for property tax purpose, this exemption is intended for end users and does not apply to property owned by anyone directly or indirectly involved in the energy industry.
- The Oregon Small Scale Energy Loan Program (SELP) provides low interest loans for a variety of energy projects including renewable systems, loans are available to individuals, businesses, schools, cities, counties, special districts, state and federal agencies, public corporations, cooperatives, tribes, and non-profits; loans generally range from $20,000 to $20 million.

Interconnection and Net Metering Standards:
Oregon's net-metering law includes interconnection requirements for systems up to 25 kilowatts (kW) in capacity. Residential and commerical customers are eligible until the total installed capacity of net-metered energy systems exceeds 0.5% of a utility's historic single-hour peak load.

ENERGY SITING PROCESS

Power Siting Authority: Energy Facility Siting Council (EFSC) approves site certificates for wind power plants with an average electric generating capacity of 105 MW or more. Land use approval can either be through local jurisdiction or the Siting Council can make the land use decision. The site certificate serves as a consolidated state permit. Smaller wind generating facilities are regulated by zoning laws at city or county level. Developers would initially apply to the land use planning authorities in local jurisdictions where wind facilities are proposed and follow their procedures to obtain conditional use permits. Concurrently, developers would need to contact all appropriate state agencies to ensure that proposed wind facilities would qualify under all other permitting regulations.

Wind Specific Siting Authority? Yes

Code or Regulations: OR Rev. Stat. §§469.300 – 469.560 OR Admin. Rules Chapter 345

Role of State Fish & Wildlife Agency: Oregon Department of Fish & Wildlife is involved in siting review of habitat and threatened or endangered species issues by EFSC standards.

How are wildlife laws applied: Energy Siting Council Standards require compliance with Oregon Department of Fish & Wildlife (ODFW) habitat mitigation goals and standards; also requires documentation of potential threatened and endangered species and consultation with ODFW if facility will impact state or federally listed species. ODFW has specific Administrative Rules outlining fish & wildlife habitat mitigation policy for development (OAR 635-415 0000 to 0025).

WILDLIFE GUIDELINES FOR WIND

Wildlife Guidelines for Wind Power Siting: Energy Facility Siting Standards and model ordinance.

Lead Agency on Guidelines: Energy Siting Council for siting standards; Oregon Department of Energy developed model ordinance

Status of Wildlife Guidelines: Final

Summary of Guidelines: The Energy Siting Council Standards, codified in OAR Chapter 345, Divisions 22-24, are mandatory but apply only to wind energy facilities with a generating capacity of 105 megawatts or more. Siting Standards require that the proposed facility comply with the habitat mitigation goals and standards of the Oregon Department of Fish and Wildlife (ODFW). The Council must determine whether the applicant has done appropriate site-specific studies to characterize the fish and wildlife habitat at the site and nearby. The applicant must provide appropriate studies of the site to identify threatened or endangered species that the proposed facility

could affect. If the facility might adversely affect either a state or federally-listed threatened or endangered wildlife species, the applicant should consult with the Oregon Department of Fish and Wildlife. If a potential risk to the survival or recovery of a threatened or endangered species exists, the applicant must redesign or relocate the facility to avoid that risk or propose appropriate mitigation measures. The Oregon Department of Energy has developed a model ordinance for local planning departments to utilize in the permitting process for wind energy projects that do not go through the Oregon Department of Energy's mandatory siting requirements.

Web site for Energy Siting Standards:
http://www.oregon.gov/ENERGY/SITING/standards.shtml

	Detailed Summary of Oregon's Siting Rule (for facilities >105MW)
Pre-construction survey	The Energy Siting Standards require energy facilities to assess impacts to fish and wildlife habitat through appropriate site-specific studies that characterize the fish and wildlife habitat at the site and nearby. In addition, they are required to comply with Oregon's land use planning goals adopted by the Land Conservation and Development Commission, or, alternatively, to comply with the local government's acknowledged comprehensive plan and land use regulations if the applicant chooses to seek land use approval from the local jurisdiction. The wind project applicant must also provide appropriate studies of the site to identify threatened or endangered species that the proposed facility could affect.
Design/Operation Recommendations	Before a site certificate for a wind facility (these requirements are found in wind specific rules) is approved by the Siting Council, the applicant must show they can design the facility to reduce cumulative adverse environmental effects in the vicinity including: designing the facility to reduce the risk of injury to raptors or other vulnerable wildlife in areas near turbines or electrical equipment, designing the components of the facility to minimize adverse visual features, using the minimum lighting necessary for safety and security purposes and using techniques to prevent casting glare from the site, except as otherwise required by the Federal Aviation Administration or the Oregon Department of Aviation. If the facility might adversely affect either a state or federally-listed threatened or endangered wildlife species, the applicant should consult with the Oregon Department of Fish and Wildlife. If a potential risk to the survival or recovery of a threatened or endangered species exists, the applicant must redesign or relocate the facility to avoid that risk or propose appropriate mitigation measures.
Site Development Recommendations	Before a site certificate for a wind facility (these requirements are found in wind specific rules) is approved by the Siting Council, the applicant must show they can construct the facility to reduce cumulative adverse environmental effects in the vicinity including: using existing roads to provide access to the facility site, or if new roads are needed, minimizing the amount of land used for new roads and locating them to reduce adverse environmental impacts, using underground transmission lines and

	combining transmission routes, connecting the facility to existing substations, or if new substations are needed, minimizing the number of new substations.
Consultation with wildlife agency, USFWS	Applicants for Energy Facility Siting certificates must consult with the Oregon Department of Fish & Wildlife (ODFW) for biological surveys. For potential impacts to Threatened and Endangered Species, the applicant must consult with the ODFW (for fish & wildlife species) or the Oregon Department of Agriculture (for plant species).
Mitigation requirements	Proposed facilities are required to comply with the habitat mitigation goals and standards of the Oregon Department of Fish and Wildlife (ODFW). If impacts cannot be avoided, the applicant must provide a habitat mitigation plan. The plan must provide for appropriate mitigation measures, depending on the habitat category affected by the proposed facility. The plan may require setting aside and improving other land for fish and wildlife habitat to make up for the habitat removed by the facility. If a potential risk to the survival or recovery of a threatened or endangered species exists, the applicant must redesign or relocate the facility to avoid that risk or propose appropriate mitigation measures
Post-Construction/ Operational Surveys	None
Decommissioning	None

Web site for model ordinance for cities and counties:
http://www.oregon.gov/ENERGY/SITING/docs/ModelEnergyOrdinance.pdf

	Detailed Summary of Oregon's Model Zoning Guidelines
Pre-construction survey	The model ordinance provides general standards on a host of issues relating to energy siting (including visual, noise, soil impacts, etc.). The General Standard for Fish, Wildlife and Native Plant Protection recommends that the energy project be designed, constructed and operated without significant adverse impact to fish, wildlife and native plant resources, including fish and wildlife habitat, migratory routes and state or federally-listed threatened or endangered fish, wildlife or plant species. There is a specific wind generation section that includes details for wildlife resource issues primarily targeting commercial grade facilities with towers typically greater than 200 feet and typically producing more than 500 kW. This includes conducting biologically appropriate baseline wildlife surveys in the areas affected by the proposed wind energy project to determine wildlife species present and patterns of habitat use.

Design/Operation Recommendations	Much of the Design recommendations for wind generation facilities fall under the visual impacts section. These include using underground energy collection wires, minimizing lighting to only what is required for safety and security, using existing roads or minimizing land used for new roads, etc. Recommendations specifically associated with wildlife issues include: selecting turbine locations to reduce the likelihood of significant adverse impacts on wildlife based on expert analysis of baseline data; designing turbine towers to reduce horizontal surfaces for perching; designing turbine towers and pad-mounted transformers to avoid creation of artificial habitat or shelter for raptor prey; spreading gravel on turbine pad areas to minimize weeds and to avoid creation of habitat for raptor prey; using anti-perching protection devices on transmission line support structures and appropriate spacing of conductors.
Site Development Recommendations	Recommends avoiding construction activities near raptor nesting locations during sensitive breeding periods and using appropriate no-construction buffers around known nest sites.
Consultation with wildlife agency, USFWS	Recommends that the local government should consult with the Oregon Department of Fish and Wildlife regarding the protocols for baseline wildlife surveys and the potential for adverse impacts on wildlife and wildlife habitat.
Mitigation requirements	There are no specific mitigation requirements but it is recommended that mitigation of significant adverse impacts should be considered if higher-than-average fatality rates occur.
Post-Construction/ Operational Surveys	Zoning language includes developing a plan for post-construction monitoring of the wind energy project site using appropriate survey protocols to measure the impact of the project on wildlife in the area. Discussion in the recommendations suggest requiring monitoring for at least 2 years after construction in order to determine the statistical fatality rate among avian and bat species for comparison with wind generation projects in other areas.
Decommissioning	Includes decommissioning requirements under the General Standards that the applicant shall submit a plan that ensures that the site will be restored to a useful, non-hazardous condition without significant delay. These include restoration of soil and revegetation with native seed, removal of aboveground and underground equipment, structures and foundations, etc. The decommissioning applies even if construction is never completed and the applicant is required to file a bond or letter of credit to cover costs of decommissioning should the owner fail to adequately restore the area.

PENNSYLVANIA

BACKGROUND

Contact: William A. Capouillez, Bureau Director, Pennsylvania Game Commission, (717) 787-6818, wcapouille@state.pa.us, 2001 Elmerton Ave., Harrisburg PA 17110

Installed Utility Scale Wind Power: 179 MW

INCENTIVES FOR WIND DEVELOPMENT

Renewable Portfolio Standard: Yes - 8% Tier I, 10% Tier II by 2020 (wind is Tier I)

Incentives for Industrial or "Big Wind" Production:

- FirstEnergy (formerly GPU) established the Metropolitan Edison Company Sustainable Energy Fund and Penelec Sustainable Energy Fund to provide funding in the form of loans or equity investments (a limited number of grants may be available) to businesses that advance the fund's objectives: the development and use of renewable energy and clean-energy technologies; energy conservation and efficiency; sustainable-energy businesses; and projects that improve the environment in the companies' service territories; loans typically do not exceed $500,000 and grants typically do not exceed $25,000.
- The Sustainable Development Fund Grant Program (PECO Territory) provides financial assistance in the form of grants, commercial loans, subordinated debt, royalty financing, and equity financing for Sustainable Energy Business Planning Grants, Sustainable Energy Demonstration Grants, and other grants that follow the SDF's mission of "promoting renewable energy, energy conservation and sustainable energy businesses"; grants average approximately $25,000 and are available for up to 75% of the cost of the work.
- The West Penn Power Sustainable Energy Fund (WPPSEF) promotes the use of renewable energy and clean energy among commercial, industrial, institutional and residential customers, funding for eligible projects may include grants, commercial loans, equity investment, subordinated debt and royalty financing; commercial loans are available to manufacturers, distributors, retailers and service companies involved in renewable and advanced clean energy technologies, as well as energy efficiency and conservation products and services to end-user companies and community-based organizations.
- The Sustainable Energy Fund of Central Eastern Pennsylvania (SEF) disburses a limited number of grants and loans to organizations seeking funding for projects consistent with the Fund's mission "to promote research and invest in clean and renewable energy technologies, energy conservation, energy efficiency and sustainable energy enterprises that provide opportunities and benefits for PP&L ratepayers"; research projects are not eligible for grant financing.
- The Pennsylvania Energy Development Authority (PEDA) offers periodic grant and loan funding to provide support for innovative, advanced energy projects, and for businesses interested in locating or expanding their alternative-energy manufacturing or production operations in Pennsylvania; Commercial, Industrial, Nonprofit, Schools, Local Government, Agricultural sectors are eligible and the maximum individual award is $1 million.

Incentives for Residential and "Small Wind" Production:

- Pennsylvania law provides that wind turbines and related equipment (including towers and foundations) may not be counted by tax assessors when setting property values, instead the valuation of real property used for the purpose of wind-energy generation is developed by the county assessor utilizing the income capitalization approach to value (the capitalized value of the land-lease agreements, supplemented by a sales comparison data approach).
- Pennsylvania's Energy Harvest program provides financing for the implementation of clean and renewable-energy technologies that have measurable benefits in terms of pollution reduction, environmental quality and reduced energy use; grants are intended to address the dual concerns of energy and environmental quality so proposals must simultaneously reduce or supplement the use of conventional energy sources and lead to improvements in water or air quality.
- The Keystone Home Energy Loan Program (HELP) is a low-interest loan program for homeowners to make their homes more energy efficient or to install wind, solar or geothermal systems; maximum loan amount is $10,000 with a 10-year repayment term and 8.99% interest rate, some low-income participants may qualify for a lower 6.99% interest rate.

Interconnection and Net Metering Standards:
Pennsylvania's interconnection standards include provisions for four levels of interconnection for generators up to two megawatts (MW) in capacity. The Commonwealth's investor-owned utilities must make net metering available to residential customers with systems up to 50 kilowatts (kW) in capacity; nonresidential customers with systems up to one megawatt (MW) in capacity; and customers with systems greater than 1 MW but no more than 2 MW who make their systems available to the grid during emergencies, or where a microgrid is in place in order to maintain critical infrastructure

ENERGY SITING PROCESS

Power Siting Authority: Local government has the authority to plan and regulate land use.

Wind Specific Siting Authority? No

Code or Regulations: Land use authority granted to local government in Municipalities Planning Code

Role of State Fish & Wildlife Agency: Department of Conservation & Natural Resources and Pennsylvania Game Commission and PA Fish & Boat Commission all can review proposal; mandatory for Threatened or Endangered Species, wetlands etc.

How are wildlife laws applied: Mitigation is mandatory only when impacting T&E species.

WILDLIFE GUIDELINES FOR WIND

Wildlife Guidelines for Wind Power Siting: Wind Energy Voluntary Cooperative Agreement

Lead Agency on Guidelines: Pennsylvania Game Commission

Status of Wildlife Guidelines: Final – February 2007

Summary of Guidelines: The Pennsylvania Game Commission developed a voluntary cooperative agreement to help avoid, minimize and potentially mitigate any adverse impacts the development of wind energy may have on the state's wildlife resources; the agreement has been signed by 12 wind power companies ("Cooperator"). Included with the agreement are standardized protocols for wildlife monitoring and impact review procedures primarily for migrating raptors - particularly eagles - and bats. The Game Commission has also outlined steps for appropriate post-construction mortality studies and in 2005 finalized guidelines for development of wind facilities on Game Lands.

Web site for Guidelines:
http://www.pgc.state.pa.us/pgc/lib/pgc/programs/voluntary_agreement.pdf

	Detailed Summary of Pennsylvania's Voluntary Guidelines
Pre-construction survey	Pre-construction surveys are required as part of the Cooperative Agreement for both birds and bats. Migrating raptor studies are required in both spring and fall and if the area is a known eagle migratory route than an additional spring eagle survey would be required. If the project area is within an Important Bird Area (IBA) as previously designated by the Audubon process, or within an area supporting birds identified as those priority species of "greatest conservation concern" within the Pennsylvania Comprehensive Wildlife Conservation Strategy, a survey (consisting of three days of effort one day in May, two in June, separated by at least one week) to confirm or deny the presence of the species will be required. The cooperator is responsible for surveying the project area for any caves, abandoned mine portals, or other openings that may harbor bats to be surveyed by a qualified bat biologist in order to determine those bat hibernacula existing within 5 miles of the project area that may induce additional avoidance and minimization measures due to anticipated adverse bat impacts from project operations. The cooperator will conduct pre- and post-construction acoustic surveys based on priority level to assess the level of bat activity for both hibernating and tree bats. Specific pre-construction monitoring protocols for both birds and bats that describe habitat priority levels as well as duration and extent of surveys are outlined in addendums to the cooperative agreement.
Design/Operation Recommendations	The Cooperator agrees to utilize to the greatest extent possible, all reasonable and feasible generally accepted wind industry and Commission best management practices relevant to the conservation of wildlife resources during construction and subsequent operation of the wind-energy facility.
Site Development Recommendations	None

Consultation with wildlife agency, USFWS	The agreement with the Game Commission provides that the Commission will be notified of a pending development at least 14 months prior to construction. The Commission in consultation with the Cooperator will determine the risk level for monitoring and survey efforts. The Commission and Cooperator agree to share relevant information concerning wildlife resources under the jurisdiction of the Commission in and around the project area and the potential adverse impact to those resources. The Commission will to the extent feasible, be made available to provide consistency and oversight management for all conducted surveys. Commission recommendations or decisions under the Cooperative Agreement do not supersede any comments, decisions, or recommendations of the United States Fish & Wildlife Service.
Mitigation requirements	In the event that an incidental take occurs upon a Pennsylvania listed threatened or endangered species of bird or mammal during the operation of any of the Cooperator's wind-energy facilities, the Cooperator agrees to take all reasonable measures as deemed appropriate by the Commission and the Cooperator to further avoid, minimize and/or mitigate such wildlife losses in the future.
Post-Construction/ Operational Surveys	The Cooperator is required to perform bird and bat mortality monitoring for a minimum of two years post-construction. Mortality studies shall be conducted from April 1 through November 15 by a qualified biologist(s) having expertise in the identification of bats and/or birds. Detailed overviews of mortality studies are included as addendums to the cooperative agreement.
Decommissioning	None

RHODE ISLAND

BACKGROUND

Installed Utility Scale Wind Power: 1 MW

INCENTIVES FOR WIND DEVELOPMENT

Renewable Portfolio Standard: Yes - 15% by 2020

Incentives for Industrial or "Big Wind" Production:
The Rhode Island Office of Energy Resources, as administrator of the Rhode Island Renewable Energy Fund, offers financial incentives to in-state retail electricity suppliers who make available eligible green-power products to residential and small business consumers in the state; the program rewards suppliers who enroll up to 15,000 new residential and small commercial customers in eligible green-power products before June 30, 2008, the incentives are first-come, first-served at a rate of $125 per customer for the first 6,000 customers statewide, and $75 per customer thereafter until funds are fully allocated.

Incentives for Residential and "Small Wind" Production:

- Rhode Island offers a personal tax credit of equal to 25% of the system cost for renewable-energy systems at residential installations - wind-energy systems must have a rotor diameter of at least 44 inches and a minimum factory-rated output of at least two 250 watts at 28 miles per hour; wind-energy systems up to $15,000 are eligible for the full 25% credit. (Owners of wind-energy systems that exceed $15,000 in cost will receive a credit based on a $15,000 system cost.)
- Rhode Island law specifies that for purposes of local municipal property tax assessment, certain renewable energy systems cannot be assessed at more than the value of a conventional system that otherwise could be necessary to install in a building; in addition certain renewable energy systems and equipment sold in Rhode Island are exempt from the state's sales and use tax.

Interconnection and Net Metering Standards:
The Rhode Island Public Utilities Commission (PUC) requires Narragansett Electric (a subsidiary of National Grid), an investor-owned utility that serves 99% of the state's mainland customers, to offer net metering to all customers generating electricity using renewable-energy systems - temporary limits (set to expire in 2010) are 1.65 MW for systems owned by cities, towns or the Narragansett Bay Commission, and 1 MW for systems owned by other customers; the limit on the aggregate capacity of all net-metered systems is 5 MW of which 1 MW is reserved for systems less than 25 kW. Rhode Island does not have formal interconnection standards, however Narragansett Electric has a simple interconnection agreement for net-metered systems.

ENERGY SITING PROCESS

Power Siting Authority: Rhode Island Energy Facility Siting Board, operating under the Public Utilities Commission, licenses energy facilities capable of operating at a gross capacity of 40 MW or more.

Wind Specific Siting Authority? No

Code or Regulations: RI Gen. Laws Section 42-98-1

Role of State Fish & Wildlife Agency: The Director of the Department of Environmental Management is one of three members of the Energy Facility Siting Board.

WILDLIFE GUIDELINES FOR WIND

Wildlife Guidelines for Wind Power Siting: No Guidance

SOUTH CAROLINA

BACKGROUND

Contact: Lauren Chestnut, Law Clerk, SCDNR, (803) 734-4006, ClerksL@dnr.sc.gov, P.O. Box 167,1000 Assembly Street, Columbia, SC 29202

Installed Utility Scale Wind Power: None

INCENTIVES FOR WIND DEVELOPMENT

Renewable Portfolio Standard: No

Incentives for Industrial or "Big Wind" Production:
None

Incentives for Residential and "Small Wind" Production:
None

Interconnection and Net Metering Standards:
The South Carolina Public Service Commission has interconnection standards for small distributed generation (DG) addressing renewable-energy systems and other forms of DG up to 20 kW in capacity for residential systems, and up to 100 kW in capacity for non-residential systems.

ENERGY SITING PROCESS

Power Siting Authority: Wind power is currently unregulated at any level of government. Legislation has been introduced in the State House to establish a committee to determine feasibility of establishing wind energy production farms. (www.scstatehouse.net; House Bill H 3533). State Public Service Commission (PSC) regulates major utility facilities (electric generating facilities greater than 75 MW) - wind is not specifically part of the PSC jurisdiction at this time. SC's wind potential may be limited, but a Joint Resolution to create a Wind Energy Production Farms Feasibility Study Committee was introduced in the state legislature on Feb. 15, 2007.

Wind Specific Siting Authority? No

Code or Regulations: SC Code of Law 58-33-10 to 170

Role of State Fish & Wildlife Agency: SC Department of Natural Resources is a party to PSC certification proceedings.

How are wildlife laws applied: State can require mitigation under Section 401 of the Clean Water Act.

WILDLIFE GUIDELINES FOR WIND

Wildlife Guidelines for Wind Power Siting: No Guidance

SOUTH DAKOTA

BACKGROUND

Contact: Silka Kempema, South Dakota Department of Game, Fish and Parks (SDGFP), (605) 773-2742, silka.kempema@state.sd.us, 523 East Capitol Avenue, Pierre, SD 57501

Installed Utility Scale Wind Power: 44 MW

INCENTIVES FOR WIND DEVELOPMENT

Renewable Portfolio Standard: No

Incentives for Industrial or "Big Wind" Production:
The wind energy property tax assessment does not include the wind turbine or blades (these are considered personal property) and only takes into account the base, foundation, tower, and substations; in addition, wind energy companies are not subject to discretionary property tax formulas and all commercial wind facilities, regardless of ownership, are assessed at the local level.

Incentives for Residential and "Small Wind" Production:
The South Dakota Renewable Energy Systems Exemption exempts renewable energy systems on residential and commercial property from local property taxes for three years after installation (after which a portion can be claimed based on a set schedule) - for residential systems, the exemption applies to the entire assessed value of residential systems and can be transferred when the property is sold; for commercial systems, the exemption applies to 50% of the installed cost of commercial systems, and cannot be transferred when the property is sold.

Interconnection and Net Metering Standards:
No net-metering/interconnection standards

ENERGY SITING PROCESS

Power Siting Authority: South Dakota Public Utility Commission (SDPUC) has permitting authority for energy conversion and transmission facilities and has regulatory authority to provide siting guidelines for wind power projects greater than 100 MW. Smaller projects are subject to local government review, only a few counties currently have regulations specific to wind power.

Wind Specific Siting Authority? Yes

Code or Regulations: SDCL 49-41B provides SDPUC regulatory authority; SDPUC Energy Facility Siting Rules (20:10:22); South Dakota Environmental Policy Act (SDCL 34A-9).

Role of State Fish & Wildlife Agency: SDPUC has agreed to distribute siting guidelines developed by SD Department of Game, Fish & Parks to stakeholders involved in the development of wind power in South Dakota.

How are wildlife laws applied: Prior to the issuance of a permit, the SDPUC may prepare or require the preparation of an environmental impact statement and applicants must demonstrate that all applicable state water and air quality standards and regulations (administered by SD Department of Environment and Natural Resources) are met. State does not have the authority to require mitigation. The state Endangered and Threatened Species law (SDCL 34A-8) does not allow for take except as provided for in the statute.

STATE ENVIRONMENTAL POLICY ACT

South Dakota Environmental Policy Act - South Dakota Codified Laws, 34A9-1 through 34A9-13, 1974

Overview:
South Dakota's Environmental Policy Act (SDEPA) provides for the preparation of an environmental impact statement for major actions which may have a significant impact on the environment. The act does not make the preparation of an EIS mandatory but states that the agency may prepare or have prepared by contract such a statement. The purpose of an environmental impact statement is to provide detailed information about the effect which a proposed action is likely to have on the environment, to list ways in which any adverse effects of the action might be minimized, and to suggest alternatives to the action.

Projects Affected by Law:
The SDEPA affects all state agencies including departments, offices, boards, commissions, and other units of the state government. Actions subject to SDEPA include: new and continuing projects or activities directly undertaken by any public agency, or supported in whole or part through contracts, grants, subsidies, loans, or other forms of funding assistance from one or more public agencies; policy, regulations, and procedure-making; or the issuance by one or more public agencies of a lease, permit, license, certificate, or other public entitlement to an applicant.

Public Participation Provisions:
Prior to the preparation of the environmental impact statement, the responsible agency is required to hold scoping meetings in the county in which the proposed action is to be located to solicit public input on what should be included in the environmental impact statement. After a draft environmental impact statement is finalized it must be circulated to state and federal agencies as well as members of the interested public. Any comments to the draft are incorporated and the EIS is made available to the public at least 30 days before the agency proceeds with the action.

Applicability to Wind Development?
Yes, through application for a permit from the Public Utilities Commission

Implementing Agency:
Department of Environment and Natural Resources

WILDLIFE GUIDELINES FOR WIND

Wildlife Guidelines for Wind Power Siting: Siting Guidelines for Wind Power Projects in South Dakota

Lead Agency on Guidelines: Department of Game, Fish & Parks

Status of Wildlife Guidelines: Final

Summary of Guidelines: South Dakota's voluntary guidelines were developed using Kansas Renewable Energy Working Group Environmental and Siting Committee's Siting Guidelines for Wind power Projects in Kansas and the National Wind Coordinating Committee's Permitting of Wind Energy Facilities: A Handbook. The guidelines address activities and concerns associated with siting and permitting wind turbines. Items addressed within the guidelines are divided into eleven categories. These categories are as follows: 1) land use, 2) natural and biological resources, 3) noise, 4) visual resources, 5) public interaction, 6) soil erosion and/or water quality, 7) health and safety, 8) cultural, archaeological, and paleontological resources, 9) socioeconomic, public service, and infrastructure, 10) solid and hazardous wasters, and 11) air and climate.

Web site for Guidelines: http://www.sdgfp.info/Wildlife/Diversity/windpower.htm

	Detailed Summary of South Dakota's Voluntary Guidelines
Pre-construction survey	Guidelines recommend pre-construction efforts that include land-use assessments (avoiding special areas, considering all local land-use relationships and objectives to minimize land use conflicts, etc.), natural and biological resources (key wildlife habitats, migration corridors, breeding/brood-rearing areas, legally protected wildlife, avoid native habitats, etc.). It is recommended that the developer consider the biological setting early in project evaluation and planning and use biological and environmental experts to conduct a preliminary biological reconnaissance of the likely site area.
Design/Operation Recommendations	Guidelines recommend that developers avoid lattice-designed towers or other designs providing perches for avian predators, minimize potential adverse affects of turbine warning lights on migrating birds and bats, consider turbine designs or deterrents that minimize potential impacts on flying animals such as birds and bats.
Site Development Recommendations	Developers are encouraged to consider timing of construction and maintenance activities (including mowing) to minimize impacts on native plants and animals, avoid construction and maintenance activities during breeding season (April to July) and, if possible, during migration (April – June and August – October). Developers should bury power lines and/or place turbines near existing transmission lines and substations, where possible and to minimize the number of roads and fences.

Consultation with wildlife agency, USFWS	It is recommended that developers consult early and frequently with South Dakota Game, Fish & Parks and the U.S. Fish & Wildlife Service, as well as local/regional resource agency offices and conservation organizations. It is also advised to start a public outreach and education process early in the project to engage local communities in the site establishment.
Mitigation requirements	Developers are encouraged to mitigate for habitat loss in areas where there is ecological damage in the siting of a wind power facility and to consider possible cumulative regional impacts from multiple wind energy projects when conducting environmental assessments and making mitigation decisions. Appropriate mitigation actions include but are not limited to ecological restoration, long-term management agreements, conservation easements, or fee title acquisitions to protect lands with similar or higher ecological quality as that of the wind power site.
Post-Construction/ Operational Surveys	None
Decommissioning	None

TENNESSEE

BACKGROUND

Installed Utility Scale Wind Power: 29 MW

INCENTIVES FOR WIND DEVELOPMENT

Renewable Portfolio Standard: No

Incentives for Industrial or "Big Wind" Production:
In Tennessee, wind energy systems operated by public utilities, businesses or industrial facilities are taxed at not more than one-third of their total installed cost, applies to the initial appraisal and subsequent appraisals.

Incentives for Residential and "Small Wind" Production:

- TVA Green Power Switch Partners Program - $500 plus $.15/kWh (residential/small-commercial) or $0.20/kWh (large commercial) to purchase entire production of renewable power including wind; systems must be 50 kW or less.
- The State of Tennessee Economic and Community Development Energy Division offers a pilot grant program for businesses to install renewable energy systems (including wind) at their facilities, the grants are 40% of the installed cost between $5,000 and $75,000.

Interconnection and Net Metering Standards:
No net-metering/interconnection standards

ENERGY SITING PROCESS

Power Siting Authority: It was recommended in the State Energy Policy that power producers apply to Tennessee's Department of Economic & Community Development (TECD) for permitting of merchant power plants greater than 50 MW. It is unclear if this has been codified in law or regulation.

Wind Specific Siting Authority? No

Role of State Fish & Wildlife Agency: TECD performs an initial review for baseline information about project need, transmission and economic needs. If the application is recommended for further consideration it is forwarded to the TN Department of Environment & Conservation for environmental permitting which includes review of potential impacts to Threatened & Endangered Species.

WILDLIFE GUIDELINES FOR WIND

Wildlife Guidelines for Wind Power Siting: No Guidance

TEXAS

BACKGROUND

Contact: Kathy Boydston, Texas Parks & Wildlife Department, Kathy.Boydston@tpwd.state.tx.us

Installed Utility Scale Wind Power: 3352 MW

INCENTIVES FOR WIND DEVELOPMENT

Renewable Portfolio Standard: Yes - 5880 MW by 2015, 2280 by Jan. 2007 which was exceeded in summer 2006

Incentives for Industrial or "Big Wind" Production:

- A corporation in Texas engaged solely in the business of manufacturing, selling, or installing solar energy devices (wind devices are included in this definition) is exempted from the franchise tax. The franchise tax is Texas's equivalent to a corporate tax; their primary elements are the same. There is no ceiling on this exemption, so it is a substantial incentive for solar manufacturers.
- Texas allows a corporation to deduct the cost of a solar energy device (this includes wind energy devices) from the franchise tax in one of two ways: (1) the total cost of the system may be deducted from the company's taxable capital; or, (2) 10% of the system's cost may be deducted from the company's income. Both taxable capital and a company's income are taxed under the franchise tax, which is Texas's equivalent to a corporate tax.

Incentives for Residential and "Small Wind" Production:
The Texas property tax code allows an exemption of the amount of the appraised property value that arises from the installation or construction of a solar or wind-powered energy device that is primarily for on-site use, or devices used to store that energy

Interconnection and Net Metering Standards:
The Public Utility Commission of Texas has interconnection standards for electrical generating facilities (consisting of one or more on-site distributed-generation units) located at a customer's point of delivery, with a maximum capacity of 10 MW and connected at a voltage less than 60 kilovolts. Texas has limited net-metering rules - any integrated investor-owned utility (this amounts to only about 25% of the state since deregulation) to provide specific net-metering options for customers that operate qualifying facilities of 100kW or less that use non-renewable-energy resources, and to qualifying facilities of 50 kW or less that use renewable-energy resources.

ENERGY SITING PROCESS

Power Siting Authority: Voluntary Review; unregulated by any level of government - county board can choose not to give a tax abatement if there is public opposition.

Wind Specific Siting Authority? No

Role of State Fish & Wildlife Agency: If Texas Parks & Wildlife Department (TPWD) is asked by industry to review a project, they will review it as if it were a development project regulated by NEPA.

How are wildlife laws applied: Same as any other development or utility project. Texas Parks and Wildlife works under NEPA, ESA, Clean Water Act, etc. TPWD has own code that states they will review projects that impact fish and wildlife resources and make recommendations to minimize those impacts, which would include recommendations for appropriate mitigation (TPWD Code §12.0011).

WILDLIFE GUIDELINES FOR WIND

Wildlife Guidelines for Wind Power Siting: Draft Guidelines in review process

Summary of Guidelines: Current draft recommends pre- and post-construction surveys, with a step down method. This would require 3 years pre-construction surveys (birds and bats) in an area where no wind development has occurred, 2 years where there have been other wind farms and preconstruction surveys performed, 1 year where the preconstruction surveys and post construction surveys support little or no use of the area and minimal mortality. Asking for a minimum of 2 years post-construction surveys for both species. Also looking at voluntary mitigation, based on habitat impacts. TPWD is still in negotiations on these guidelines.

UTAH

BACKGROUND

Contact: Bill James, Energy Development / NEPA Coordinator, Utah Division of Wildlife Resources, billjames@utah.gov

Installed Utility Scale Wind Power: 1 MW

INCENTIVES FOR WIND DEVELOPMENT

Renewable Portfolio Standard: No

Incentives for Industrial or "Big Wind" Production:

- The Utah State Energy Program administers the Renewable Energy Systems Tax Credit for both corporate and residential systems for commercial wind, geothermal electric, and biomass systems with a total capacity of 660 kW or greater, the credit is 0.35¢/kWh ($0.0035/kWh) for four years with no limt on total costs.
- Utah Code exempts the purchase or lease of equipment used to generate electricity from renewable resources (20 kW or greater) from the state sales tax; a facility that has its generation capacity increased by one or more MW as a result of the machinery or equipment may also be eligible for the exemption.

Incentives for Residential and "Small Wind" Production:

- The Utah State Energy Program administers the Renewable Energy Systems Tax Credit for both corporate and residential systems; the individual income tax credit for residential systems is 25% of the reasonable installed system costs up to a maximum credit of $2,000 per residential systems; the individual income tax credit for commercial systems less than 660 kW is 10% of the reasonable installed costs up to $50,000.
- The City of St. George offers a rebate of $2,000 per kilowatt-AC (kW-AC) to customers who install photovolaic (PV) systems or wind-energy systems between 1 kW and 10 kW; the rebate is limited to $6,000 for residential systems and $20,000 for commercial systems - all customers that receive a rebate must also participate in the utility's net-metering program.

Interconnection and Net Metering Standards:
Utah's net-metering law requires all electric utilities and cooperatives to allow customers to connect solar-energy systems, wind-energy systems and hydroelectric systems up to 25 kW to the grid; maximum enrollment is 0.1% of 2001 peak demand..

ENERGY SITING PROCESS

Power Siting Authority: There is no single Utah State government agency with primary responsibility for electric generation plant siting. Public Service Commission of Utah, Utah Division of Public Utilities and many others are included in the list and it is the developer's

responsibility to contact each agency to determine the necessary requirements for the specific proposed project.

Wind Specific Siting Authority? No

Role of State Fish & Wildlife Agency: The Utah Department of Natural Resources, Division of Wildlife Resources are listed as agencies that developers must contact for their specific project.

WILDLIFE GUIDELINES FOR WIND

Wildlife Guidelines for Wind Power Siting: No Guidance

VERMONT

BACKGROUND

Contact: Julie Moore, Agency of Natural Resources, (802) 241-3687, julie.moore@state.vt.us

Installed Utility Scale Wind Power: 6 MW

INCENTIVES FOR WIND DEVELOPMENT

Renewable Portfolio Standard: Yes – Renewable Energy meets load growth by 2012; draft legislation to require 100MW from wind by 2017 but no action has been taken on the bill.

Incentives for Industrial or "Big Wind" Production:
The Vermont Department of Public Service (DPS) Clean Energy Development Fund Grant program provides grants up to $250,000 for large-scale (greater than 15 kW), grid-connected renewable energy systems (including wind), projects must provide a 50% match no more than 25% of which can be in-kind - Pre-Project Financial Assistance is also available up to $25,000 with a 20% cash match.

Incentives for Residential and "Small Wind" Production:

- Vermont has a sales tax exemption for renewable-energy systems up to 15 kW that are either net-metered or not connected to the grid; on-farm systems up to 150 kW are eligible.
- The Vermont Department of Public Service (DPS) Clean Energy Development Fund Grant program provides grants up to $60,000 for small-scale renewable energy systems (including wind microturbines no greater than 15 kW), projects must provide a 50% match no more than 25% of which can be in-kind - Pre-Project Financial Assistance is also available up to $25,000 with a 20% cash match.
- Vermont's Solar and Small Wind Incentive Program provides funding for new solar water heating, solar electric (photovoltaic) and wind energy system installations; for wind, individuals and businesses can receive $2.50/W DC (up to $4/W with Vermont-made components) up to $12,500; Schools, farms, and local/state governments - $4.50/W DC, up to lesser of $20,000 or 50% of total installed cost.

Interconnection and Net Metering Standards:
Any electric customer in Vermont may net meter on a first-come, first-served basis after obtaining a "Certificate of Public Good" from the Vermont Public Service Board (PSB) until the cumulative capacity of net-metered systems equals 1% of the utility's peak demand during 1996 or the peak demand during the most recent full calendar year, whichever is greater; generating capacity is generally limited to 15 kilowatts (kW) for systems however farm systems are allowed to net meter systems up to 150 kW.

ENERGY SITING PROCESS

Power Siting Authority: Vermont Public Service Board provides Certificate of Public Good for all wind power facilities except where it is operated solely for on-site consumption by the owner.

Wind Specific Siting Authority? Yes

Code or Regulations: 30 V.S.A. § 248, 10 V.S.A. § 1424a(d) and § 6086(a)(1) through (8) and (9)(K)

Role of State Fish & Wildlife Agency: The Vermont Agency of Natural Resources is a statutory party to the proceedings of utility-scale projects subject to the reviewing authority of the Vermont Public Service Board under state statute. In this capacity the Agency acts as an advisor to the Board on matters pertaining to natural resource protection, impact assessment, and mitigation associated with public utility projects subject to their regulatory authority.

How are wildlife laws applied: Same as any other development project, different standards/processes apply. Agency of Natural Resources can require mitigation

WILDLIFE GUIDELINES FOR WIND

Wildlife Guidelines for Wind Power Siting: Guidelines for the Review and Evaluation of Potential Natural Resources Impacts from Utility-Scale Wind Energy Facilities in Vermont

Lead Agency on Guidelines: Vermont Agency of Natural Resources

Status of Wildlife Guidelines: Draft - April 2006

Summary of Guidelines: The draft voluntary guidelines establish a process for the Agency of Natural Resources (ANR) to review proposals and applications for Certificates of Public Good (CPGs) related to the development of utility-scale wind power facilities. The guidelines provide a detailed outline of expectations for pre- and post-construction data collection as well as general guidelines for construction, operation and maintenance of utility-scale wind facilities. Included are recommendations for preliminary site assessment, resource analysis and inventory of wildlife including rare, threatened or endangered species. ANR provides consultation, preferably at the earliest stages of development, that includes site visits, review of initial resource assessments and guidance on pre-construction studies and land management plans. Finally, the guidelines outline components of post-construction studies and operational protocols with detailed information about possible mitigation options should surveys find the project is having undue adverse impacts on the natural environment.

Web site for Guidelines: http://www.anr.state.vt.us/site/html/plan/DraftWindGuidelines.pdf

	Detailed Summary of Vermont's Voluntary Guidelines
Pre-construction survey	The initial resource assessment recommended by the Agency of Natural Resources (ANR) includes a site analysis (including, water resource features, ravines or gullies, highly erodible soils, slope in excess of 20% and existing structures within 1,000 feet of facility), a wildlife habitat inventory including an evaluation of bird and bat migratory activity, and a rare, threatened or endangered species inventory using the VT Fish & Wildlife Department database, and an aesthetic evaluation that takes into account viewsheds and measures that will be taken to minimize nighttime lighting. Pre-construction fish and wildlife surveys include radar and acoustical studies for bird/bat migratory activity; surveys for rare, threatened or endangered species, notes in particular Bicknell's Thrush, Indiana Bat and Small-footed Bat; a resident avian and breeding bird survey, diurnal surveys for raptors; wildlife habitat surveys including migratory corridors, black bear feeding, deer and moose winter habitat; and identification of wetland areas with significant or unique wildlife values. Land use evaluation should include site location and existing site condition map, grading and drainage plans, public access controls, and habitat restoration management and reclamation plans.
Design/Operation Recommendations	None
Site Development Recommendations	ANR may recommend the developer hire an independent engineer to oversee construction in particular with regard to erosion control and impacts to water quality and habitat.
Consultation with wildlife agency, USFWS	Recommends a scoping meeting with the ANR to outline the components that will be necessary for an initial resource assessment. After the initial resource assessment, the more detailed agency consultation process begins where ANR identifies a project coordinator and Agency team (including stream and water quality experts, wetlands experts, fisheries and wildlife biologists, storm water staff and attorney(s)); the team reviews initial materials, takes a site visit and outlines scope and protocols for pre-construction surveys. ANR reviews all pre-construction surveys and coordinates testimony they will submit to the Public Service Board for certificate approval. ANR will continue to be involved in reviewing post-construction monitoring and may conduct independent surveys to improve understanding of impacts of utility-scale wind facilities.

Mitigation requirements	If post-construction surveys show adverse impacts the ANR may require mitigation which may include modified operation (including seasonal shut-downs, technological improvements, etc.), modified lighting, on-site habitat management (including modification of vegetative cover or forest openings, perching or nesting sites, etc.), and habitat protection or compensatory mitigation.
Post-Construction/ Operational Surveys	Post-construction surveys are likely to include bird and bat surveys (possible research methods may include radar, acoustic, mortality, thermal imaging); habitat fragmentation impact assessment, particular for black bear, Bicknell's thrush and other nesting birds; operational protocols; and the role of adaptive management. Formal post-construction monitoring is expected to take place for 3 to 5 years unless significant adverse impacts are found where additional monitoring or operational changes may be necessary.
Decommissioning	Department of Public Service addresses decommissioning, but the ANR will review site restoration plans and progress and will monitor restoration for invasive plant species for an estimated 5 years.

VIRGINIA

BACKGROUND

Contact: Rick Reynolds, Virginia Department of Game and Inland Fisheries, (540) 248-9360, Rick.Reynolds@dgif.virginia.gov, P.O. Box 996, Verona, VA 24482

Installed Utility Scale Wind Power: None

INCENTIVES FOR WIND DEVELOPMENT

Renewable Portfolio Standard: Yes - State goal of 12% by 2022

Incentives for Industrial or "Big Wind" Production:
None

Incentives for Residential and "Small Wind" Production:
TVA Green Power Switch Partners Program - $500 plus $.15/kWh (residential/small-commercial) or $0.20/kWh (large commercial) to purchase entire production of renewable power including wind; systems must be 50 kW or less.

Interconnection and Net Metering Standards:
Virginia's net-metering rules allow interconnection of renewable systems (10 kW residential and 500 kW non-residential) up to 1% of a utility's peak load for previous year.

ENERGY SITING PROCESS

Power Siting Authority: The Virginia State Corporation Commission provides a certificate of convenience and necessity for siting new public utility facilities. Small wind power is regulated at the local level only.

Wind Specific Siting Authority? No

Code or Regulations: Power Siting Law - 56-265.1 to 9

Role of State Fish & Wildlife Agency: With respect to wildlife, the VA State Corporation Commission (SCC) has an MOU with the VA Dept. of Environmental Quality to review and consider environmental issues concerning power projects in VA. DEQ compiles comments from the other state natural resource agencies and provides these to the SCC for their consideration

How are wildlife laws applied: Same as any other development/utility project, State Threatened and Endangered Species law and state code prohibits unauthorized take of wildlife. State cannot require mitigation.

STATE ENVIRONMENTAL POLICY ACT:

Code of Virginia §10.11188 through 1192, 1973

Overview:
The purpose of environmental review is to identify and evaluate the environmental effects of proposed state facilities, and to guide facility siting and design decisions in order to protect important environmental resources. The analysis needed to prepare an environmental impact report helps agencies to assess the effects of development proposals, and to consider alternative actions and mitigating measures to avoid or reduce adverse impacts. Information requirements include the environmental impacts of the project, adverse environmental effects that are unavoidable, measures taken to minimize impacts, any alternatives to the proposed construction and irreversible environmental changes.

Projects Affected by Law:
The law applies to State agencies, boards, commissions, authorities, any branch of State government, and state supported institutions of higher learning. State agencies are required to prepare and submit environmental impact reports for construction of facilities that will cost $100,000 or more. The requirement also covers acquisition of land for construction, which includes leases, and expansion of existing facilities.

Public Participation Provisions:
Public input is not directly solicited for projects. An environmental review is circulated among state agencies as well as to localities and district commissions.

Applicability to Wind Development?
No - the law only applies to state built facilities.

Implementing Agency:
The DEQ's Office of Environmental Impact Review coordinates the review process and prepares a single state response for consideration by the Secretary of Administration, representing the Governor.

WILDLIFE GUIDELINES FOR WIND

Wildlife Guidelines for Wind Power Siting: No state guidelines, state has been required to develop potential siting areas and fish & wildlife considerations is expected to be part of that.

WASHINGTON

BACKGROUND

Contact: Greg Hueckel, Assistant Director, Washington Dept. of Fish & Wildlife, hueckgjh@dfw.wa.gov,

Installed Utility Scale Wind Power: 818 MW

INCENTIVES FOR WIND DEVELOPMENT

Renewable Portfolio Standard: Yes - 15% by 2020

Incentives for Industrial or "Big Wind" Production:
The Bonneville Environmental Foundation (BEF) provides up to 33% of the funding, through grants, loans, convertible loans, guarantees, and direct investments, for the capital costs for installation of renewable energy, including wind, to local governments, non-profits and tribal governments in the Pacific Northwest (OR, WA, ID, MT); grants and investments may range from a few thousand dollars for small installations, to significant investments in central station grid-connected renewable energy projects.

Incentives for Residential and "Small Wind" Production:

- The Chelan County Public Utility District (PUD) Sustainable Natural Alternative Power (SNAP) program encourages customers to install alternative power generators such as solar panels and wind turbines up to 25 kW and connect them to the District's electrical distribution system by offering an incentive payment based on the system's production; the amount paid (up to a maximum of $1.50 per kWh) depends on the total amount contributed by SNAP Purchasers through the utility's green pricing program and the total amount generated by all SNAP Producers.
- The Okanogan County PUD SNAP with net metering program (modeled after the successful Chelan County PUD program) encourages members to install renewable energy generators and connect them to their utility's electrical distribution system by offering an incentive payment based on the system's production on a $/kWh basis (maximum payment is $1.00/kWh); the production payment is in addition to any net metering credit the producer may receive from the utility.
- Orcas Power and Light (OPALCO) provides a production-based incentive for residential and commercial members who generate energy from wind and micro-hydroelectric sources, members must sign an Agreement for Interconnection granting OPALCO rights to the system's Green Tags (renewable energy certificates) - for wind and microhydroelectric systems, the member receives $1.50 per kWh for half of the estimated first-year production, at the end of the year, a "true up" is paid based on the actual generation as determined by an OPALCO meter minus the initial estimate; the total incentive may not exceed $4,500.
- The Northwest Solar Cooperative (NWSC) offers to purchase the rights to the environmental attributes or "Green Tags" derived from grid-connected solar PV- or wind-generated electricity at

a rate of $0.05/kWh through December 31, 2009; systems up to 25 kW are automatically approved; > 25 kW approved on case-by-case basis.

- Washington has production incentives of 12¢ to 54¢ per kilowatt-hour (capped at $2,000 per year) for individuals, businesses, or local governments that generate electricity from solar power, wind power or anaerobic digesters. The incentive amount paid to the producer is adjusted according to how the electricity was generated by multiplying the incentive by the following factors: for electricity produced using a solar or wind generator equipped with an inverter manufactured in Washington state: 1.2; for electricity produced using an anaerobic digester, by other solar equipment, or using a wind generator equipped with blades manufactured in Washington state: 1.0; for all other electricity produced by wind: 0.8. The state's utilities will pay the incentives and earn a tax credit equal to the cost of those payments. The credit may not exceed the greater of $25,000 or 0.25% of a utility's taxable power sales. The incentive amount may be uniformly reduced if requests for the incentive exceed the available funds.
- In Washington State, tax does not apply to the sales of equipment used to generate electricity from wind, the exemption applies to labor and services related to the installation of the equipment, as well as to the sale of equipment and machinery; eligible systems must have a generating capacity of at least 200 watts

Interconnection and Net Metering Standards:
The Washington Utilities and Transportation Commission (UTC) adopted final interconnection rules in March 2006 for all distributed-generation (DG) systems up to 25 kW in capacity (WUTC is currently developing interconnection standards for customer-owned DG greater than 25 kW in capacity. Although the rules apply only to investor-owned utilities, the UTC has indicated that all Washington utilities likely will adopt the commission's rules. Washington's net-metering law applies to renewable energy systems up to 100 kW in capacity, all customer classes are eligible, and all utilities – including municipal utilities and electric cooperatives – must offer net metering. Net metering is available on a first-come, first-served basis until the cumulative generating capacity of net-metered systems equals 0.25% of a utility's peak demand during 1996. This limit will increase to 0.5% on January 1, 2014.

ENERGY SITING PROCESS

Power Siting Authority: The State Energy Facility Site Evaluation Council (EFSEC) has jurisdiction over all major energy facilities (greater than 350 MW) and any sized renewable energy facilities that choose to participate in the EFSEC review process. Local governments permit smaller projects and those that choose not to go through the EFSEC review. Projects are subject to State Environmental Policy Act and the Washington Legislature passed HB 2402 in March 2006, which provides for expedited review for those facilities that pass the State Environmental Policy Act checklist for renewable energy applications.

Wind Specific Siting Authority? No

Code or Regulations: State Energy Facility Site Evaluation Council – Wash. Rev. Code §§80.50.010 - 80.50.904 and Wash. Admin. Code chaps. 463-06 - 463-78; State Environmental Policy Act – Wash. Rev. Code 80

Role of State Fish & Wildlife Agency: Regulatory agency must consult with Dept. of Fish & Wildlife and provide opportunity to comment on project through State Environmental Policy Act. WDFW is one of 5 Agencies represented on EFSEC.

How are wildlife laws applied: There are no State Statutes that require protection of wildlife habitat unless EFSEC process is selected. The State does not have authority to require mitigation

STATE ENVIRONMENTAL POLICY ACT

Revised Code of Washington 43.21C, Washington Administrative Code 197-11, 1971

Overview:
The State Environmental Policy Act (SEPA) requires all state and local governments to identify and evaluate probable environmental impacts and develop mitigation measures that will reduce adverse environmental impacts. If the project does not involve an agency action, or there is an action but the project is exempt, environmental review is not required, if it does, a preliminary assessment and proposal is begun. After review, the lead agency issues either a determination of nonsignificance (DNS), which may include mitigation conditions, or if the proposal is determined to have a likely significant adverse environmental impact, a determination of significance/scoping notice (DS/Scoping) is issued which starts the environmental impact statement (EIS) process. The EIS will analyze alternatives and possible mitigation measures to reduce the environmental impacts of the proposal.

Projects Affected by Law:
SEPA environmental review is required for any state or local agency decision that meets the definition of an "action" and is not categorically exempt. Actions are divided into two categories, "project actions" and "nonproject actions". Project actions are agency decisions to license, fund, or undertake a specific project including construction or alternation of public buildings or facilities, private projects such as subdivisions, shopping centers, other commercial buildings, and industrial facilities. Nonproject actions are agency decisions on policies, plans, and programs, including adoption or amendment of: rules, ordinances, or regulations that will regulate future projects, such as water quality rules, critical area ordinances, and other state and local regulations.

Public Participation Provisions:
If there is a determination of nonsignificance, the public has the opportunity to comment on the finding and a DNS can be changed if comments provide new information in the decision. During the EIS process, SEPA requires agencies to involve the public during the "scoping" period, where agencies, tribes, and the public are invited to comment on the range of alternatives, areas of impact, and possible mitigation measures that should be evaluated within the EIS (21 to 30 days); and the draft EIS review period, where comments are requested on the merits of the alternatives and the adequacy of the environmental analysis (30 days with a possible 15 day extension). Agencies may take action on the proposal seven days after the final EIS has been issued.

Applicability to Wind Development?
Yes, through the permit process with the State Energy Facility Site Evaluation Council or if it is a small project through the local jurisdiction.

Implementing Agency:
Department of Ecology's SEPA Unit

WILDLIFE GUIDELINES FOR WIND

Wildlife Guidelines for Wind Power Siting: Baseline & Monitoring Studies for Wind Projects

Status of Wildlife Guidelines: Final - August 2003

Summary of Guidelines: The voluntary Wind Power Guidelines are used by the Department for its comments on wind energy projects through the State Environmental Policy Act. The guidelines outline pre-project assessment with the goal of avoiding or minimizing avian and bat mortality. It also provides information on operational monitoring after construction and recommends the establishment of a Technical Advisory Committee to review monitoring data and make adaptive management recommendations. The guidelines also provide alternatives for mitigation by directing development to previously disturbed habitats (as opposed to undisturbed native habitat) and provides ratios for replacement habitat as mitigation for projects. In addition, it provides an alternative mitigation option to streamline the mitigation process and ensure that mitigation dollars are spent on acquiring, restoring and managing strategically important habitat. Over the course of this next year, Washington State's "Wind Power Guidelines" document will be re-evaluated and updated as needed to ensure the document accurately describes wind power development impacts on Washington's natural resources and their habitats, while providing guidance to avoid, minimize and ultimately mitigate for those impacts. The current document is comprised of three sections that relate to monitoring (pre and post construction), conventional mitigation and alternative mitigation. We expect to broaden these categories and address additional issues in the update. Potential new issues may include buffers and set backs, turbine construction methods, survey protocol, micro-siting, abandonment plans and adaptive management plans.

Web site for Guidelines: http://wdfw.wa.gov/hab/engineer/windpower/index.htm

	Detailed Summary of Washington's Voluntary Guidelines
Pre-construction survey	Pre-project assessment studies are recommended to collect information suitable for predicting the potential impacts of the project on wildlife and plants Specific components include information review, habitat mapping, raptor nest survey (at least one nest site survey during breeding season within 1 mile of project site), general avian use surveys (At a minimum one full season of avian use surveys, particularly during spring/summer; additional seasonal surveys may be necessary), and surveys for threatened, endangered or sensitive species.
Design/Operation Recommendations	Developers should design the project layout so that impacts on biological resources are avoided and minimized. Specific design recommendations include: use of tubular towers to reduce the ability of birds to perch on towers and reduce the risk of collision (discourage the use of lattice towers with horizontal cross-members or towers that use guy wires), discourage the use of rodenticides to control rodent burrowing around towers, minimize use of overhead power lines or use designs that avoid and minimize impacts to raptors and other birds (e.g., adequate conductor spacing, use of perch guards), minimize the use of lights on towers because they may attract flying wildlife to the vicinity of the turbines in certain conditions.

Site Development Recommendations	Site construction should be done to avoid or minimize impacts to biological resources. Specific recommendations include: encourage development in agricultural and already disturbed lands, including using existing transmission corridors and roads where possible, and to encourage the protection of priority habitats; avoid high bird concentration areas, especially concentration areas of sensitive status species, and breeding sites; encourage the control of noxious weeds and the control of detrimental weedy species that invade existing habitat as a result of disturbance from construction and operation; encourage the requirement of a complete road siting and management plan, including vehicle-driving speeds that minimize wildlife mortality; and encourage the requirement of a fire protection plan.
Consultation with wildlife agency, USFWS	A Technical Advisory Committee (TAC) is recommended to be responsible for reviewing results of monitoring data and making suggestions to the permitting agency regarding the need to adjust mitigation and monitoring requirements based on results of initial monitoring data and available data from other projects. Potential members include state and federal wildlife agencies, the developers, environmental groups, landowners, and county representatives
Mitigation requirements	The Guidelines have very specific mitigation recommendations for permanent habitat impacts and temporary impacts, no mitigation will be required for development in already disturbed areas. For mitigation through acquisition of alternate habitats WDFW recommends like-kind (e.g., shrub-steppe for shrub-steppe; grassland for grassland) and/or of equal or higher habitat value than the impacted area, with legal (conservation easement, fee acquisition) protection of the habitat in the same geographic area as the project that will protected from degradation during the life of the project. Specific ratios of acquired mitigation habitat to destroyed habitat are recommended; the ratios are lower for mitigation for temporary impacts and restoration of habitat from temporary impacts is encouraged. The guidelines also include an alternative mitigation pilot program where developers would pay an annual fee of $55/acre/year (adjustable up or down up to 25% depending on habitat quality) to WDFW for each acre of habitat that would be owed using the conventional mitigation requirements.
Post-Construction/ Operational Surveys	Monitoring studies, such as carcass surveys, using current state-of-the-art protocols are required to determine the actual direct impacts of the wind farm on birds. The duration and scope of the monitoring should depend on the size of the project, and the availability of existing monitoring data at projects in comparable habitat types.
Decommissioning	None

WEST VIRGINIA

BACKGROUND

Contact: Curtis Taylor, Chief Wildlife Resources, WV Dept. of Natural Resources, 304-558-2771, curtistaylor@wvdnr.gov

Installed Utility Scale Wind Power: 66 MW

INCENTIVES FOR WIND DEVELOPMENT

Renewable Portfolio Standard: No

Incentives for Industrial or "Big Wind" Production:
West Virginia has reduced the Business and Operation Tax (B&O) on utilities using wind-power generation from 40% of the generating capacity of the unit to 5% of the wind turbine generating capacity. For the purposes of property tax assessment, utility-owned wind projects are considered to have a value equal to their salvage value, lowering the property tax basis from 100% to 5% of assessed value.

Incentives for Residential and "Small Wind" Production:
None

Interconnection and Net Metering Standards:
West Virginia allows net-metering for systems up to 25 kW up to 0.1% of the utility's total load participation.

ENERGY SITING PROCESS

Power Siting Authority: State Public Service Commission has sole authority to regulate development though local government can exert authority through zoning laws.

Wind Specific Siting Authority? No

Role of State Fish & Wildlife Agency: State Public Service Commission requires wildlife assessments in their siting review, but the Department of Natural Resources is not involved in the review. WV Department of Natural Resources (DNR) has the same rights as the public and can intervene and provide testimony regarding concerns, but no formal role.

How are wildlife laws applied: Same as any other development project. The DNR has the ability to require mitigation through replacement costs for impacts to mammals and birds that are taken above any threshold set by the agency.

WILDLIFE GUIDELINES FOR WIND

Wildlife Guidelines for Wind Power Siting: Wildlife Assessments are required by the Public Service Commission through the siting process in the *Rules Governing Siting Certificates*. The agency is considering drafting guidance for the wind power industry that addresses the many wildlife issues brought forward by the wind industry.

Status of Guidelines: Final

Summary of Guidelines: The Public Service Commission includes some wildlife related requirements in their siting review, the guidelines are mandatory under siting law. Applicants are required to perform bird and bat assessments for the area as well as consult with the DNR and U.S. Fish and Wildlife Service (FWS) on threatened and endangered species issues. The siting certificate also requires a post-construction survey one year after the facility goes into production. There are some design and construction requirements, but none are related to wildlife considerations.

Web site for Guidelines: http://www.wvsos.com/csrdocs/worddocs/150-30.doc

	Detailed Summary of West Virginia's Siting Rules
Pre-construction survey	Applicants are required to file copies of, and state the results of, a Spring and Fall avian migration study; a Phase I Avian Risk Assessment, and a risk assessment regarding bats; and an avian and bat lighting study from empirical data available on similar facilities.
Design/Operation Recommendations	None
Site Development Recommendations	None
Consultation with wildlife agency, USFWS	Applicants are required to file an affidavit listing any and all permits that the applicant will be required to obtain from the US Fish and Wildlife Service, the West Virginia Department of Natural Resources, or any other government authority, with respect to threatened or endangered species. If the the applicant shows that it is not required by other governmental agencies to follow any process or permitting requirements with respect to threatened or endangered species, other parties may petition the Commission to consider the impact on species.
Mitigation requirements	None

Post-Construction/ Operational Surveys	After the facility has been in operation for one year, the applicant shall perform and file with the Commission the results of an avian and bat lighting study conducted for one year after operation begins.
Decommissioning	Applicants must describe post useful life demolition, removal, disposal, and restoration plans for facilities.

WISCONSIN

BACKGROUND

Contact: Steve Ugoretz, DNR Office of Energy, (608) 266-6673, steven.ugoretz@dnr.state.wi.us,

Installed Utility Scale Wind Power: 53 MW

INCENTIVES FOR WIND DEVELOPMENT

Renewable Portfolio Standard: Yes (goal) - 10% by 2015

Incentives for Industrial or "Big Wind" Production:
Wisconsin Focus on Energy offers several grant programs to support the development of renewable energy, Feasibility Study Grants provide financial support for assessing the feasibility of using renewable-energy systems, up to 50% of project costs will be funded, with a maximum grant of $10,000; Implementation Grants provide financial support for large renewable-energy projects, grant amounts are based on a calculated estimate of the quantity of electricity and/or thermal energy the system will produce in one year - for wind energy systems, the maximum amount is 35% or $45,000; maximum system size of 250 kW

Incentives for Residential and "Small Wind" Production:

- In Wisconsin, any value added by a solar-energy system or a wind-energy system is exempt from general property taxes.
- Focus on Energy offers Cash-Back Rewards for installing or expanding renewable-energy systems on businesses and homes, ayments are based on the estimated amount of electricity or thermal energy produced annually by an eligible system, maximum cash-back for wind energy systems (20 kW or less) is 25% of project cost or $35,000.
- Wisconsin Public Power, Inc member utilities offer low-interest loans (from $2,500 to $20,000, at an interest rate of 1.99%) for renewable-energy systems (including wind up to 20 kW) to residential and small business customers, loan terms vary from three to 10 years.
- Wisconsin Public Power, Inc. (WPPI) utilities offer rebates for renewable-energy systems to residential and small commercial customers; for qualifying wind-energy systems rated 20 kW or less, eligible customers will receive a rebate equal to 25% of the system's cost, with a maximum incentive of $10,000; customers may also receive a rebate for 75% (up to $375) for a renewable energy site assessment and 50% rebate (up to $2,500) for both routine maintenance as well as major system repairs.

Interconnection and Net Metering Standards:
Wisconsin's interconnection standards cover all distributed generation (DG) facilities up to 15 megawatts (MW) in capacity. All regulated utilities allow net metering to customers that generate electricity with systems up to 20 kilowatts (kW) in capacity, We Energies allows wind energy systems up to 100 kW

ENERGY SITING PROCESS

Power Siting Authority: Public Service Commission of Wisconsin (PSC) provides Certificate of Public Convenience & Necessity for projects over 100MW and these projects also require an EIS. PSC Certificate of Authority may be necessary for smaller facilities depending on project cost. Smaller projects may be subject to local approval where zoning regulations include wind energy provisions.

Wind Specific Siting Authority? No

Code or Regulations: Wis. Stat. ch. 196.491. Includes environmental, socio-economic and power system considerations

Role of State Fish & Wildlife Agency: Department of Natural Resources (DNR) has a cooperative agreement with PSC to ensure cooperative review and approval of energy projects. Environmental review is centralized in DNR's Office of Energy.

How are wildlife laws applied: Same as any other utility project, wildlife considerations are balanced against other factors. The DNR has the ability to require mitigation through the PSC siting statute.

STATE ENVIRONMENTAL POLICY ACT

Wisconsin Environmental Policy Act - Wisconsin Statutes, Ch. 1, 1.11(1) through 1.11(5), Wisconsin Administrative Code, NR 150.01 through NR 150.40, 1972

Overview:
The Wisconsin Environmental Policy Act (WEPA) requires the DNR and other state agencies to gather relevant environmental information and use it in their decision-making. Each state agency makes its own rule to implement WEPA, including a list categorizing actions as: Type 1 – Environmental Impact Statement (EIS) automatically required, Type 2 - environmental assessment (EA) prepared (may conclude EIS is needed), Type 3 - press release indicating no other WEPA documents were required, Type 4 - no notice or other action required. Agencies must look at appropriate alternatives to the particular course of action they are proposing. If the action is a "major action significantly affecting the quality of the human environment," the law requires agencies to consult with other agencies about possible environmental impacts, prepare and circulate an EIS, and hold a public hearing. EA's are similar to EIS's in both content and process, the primary difference is the requirement for a formal administrative hearing on an EIS.

Projects Affected by Law:
WEPA applies only to the actions of state agencies. It does not apply to local governments or private parties unless their actions involve state agency regulation or funding.

Public Participation Provisions:
The public has the opportunity to comment on the EA prior to the decision to do an EIS. When an EIS is completed, the draft is circulated and available to the public for comment for 45 to 90 days. The DNR is required to hold a public informational hearing not less than 30 days after issuance of the EIS on the proposed action and the EIS prior to making its decision.

Applicability to Wind Development?
Yes through state regulatory process or possibly state funding (Wisconsin has several incentive programs for wind energy). If a certificate is required by the Public Service Commission (generally for power generating projects over 100 MW) then the PSC's WEPA rules apply, otherwise, the DNR would be responsible for the EIS through their Type categories.

Implementing Agency:
Department of Natural Resources Science Services unit

WILDLIFE GUIDELINES FOR WIND

Wildlife Guidelines for Wind Power Siting: Considering Natural Resource Issues in Wind Farm Siting in Wisconsin

Status of Wildlife Guidelines: Final - August 29, 2005

Summary of Guidelines: Voluntary guidelines outline specific habitat types and areas that need to be considered when siting wind farms. Recommends site characterization studies that consist of identifying habitat resources, the communities and species likely to use them, and the numbers and timing (seasonal & daily) of use. Recommends using U.S. Fish & Wildlife Service and National Wind Coordinating Collaborative guidelines for wildlife studies. Developers encouraged to contact DNR Office of Energy early in the process to coordinate with agency wildlife and endangered resource experts. Outlines potential mitigation measures to minimize collisions and recommends use of Avian/Power Line Interaction Committee (APLIC) technologies. Recommends monitoring and evaluating collisions and mortalities for 2 years, to determine of modifications to the wind farm or mitigation is necessary, and encourages an adaptive management approach.

Web site for Guidelines: http://dnr.wi.gov/org/es/science/energy/wind/guidelines.pdf

	Detailed Summary of Wisconsin's Voluntary Guidelines
Pre-construction survey	Recommends identifying viable development sites that use GIS mapping with overlays of wildlife areas, migration corridors, current or proposed major state ecosystem acquisition or restoration areas, state and local parks and recreation areas, active landfills, wetlands, wooded corridors, major tourist/scenic areas, and airport landing strip or other lighted areas. Using the maps should identify potential areas and allow recommended setbacks from areas of potential concern. Site characterization studies to identify habitat resources in the area, the communities and species likely to use them, and the numbers and timing (seasonal and daily) of use should be conducted. Wildlife surveys should characterize resident and migratory bird and bat populations on a seasonal and day/night basis, including migrations and breeding seasons. Use by raptors, waterfowl, shorebirds and wading birds, gulls and terns, songbirds and bats should be evaluated for at least one year, with emphasis on the Spring and Fall migrations.

Design/Operation Recommendations	Mitigation measures proven to minimize collisions and mortality should be designed into the wind farm. Towers and electric lines should also be sited, designed, and installed using measures to reduce the likelihood of bird and bat mortality. Placing electric lines underground is highly recommended, as is the use of perch guards on above ground poles, and other Avian/Powerline Interaction Committee (APLIC) endorsed technologies. An adaptive management approach to planning, design, construction and operations is highly recommended.
Site Development Recommendations	None
Consultation with wildlife agency, USFWS	Potential wind farm developers are strongly encouraged to contact the DNR Office of Energy early in the process to get in touch with agency wildlife and endangered resources experts. The site study plan should be submitted in advance to the DNR and discussed with staff experts to ensure its acceptability.
Mitigation requirements	None
Post-Construction/ Operational Surveys	Bird and bat use and interactions with wind turbines and supporting facilities should be monitored for an adequate period (at least two years is recommended) after installation, using accepted standard methods. This should be done for the first wind farms in any ecological region of the state. The monitoring should evaluate any collisions and mortality that occur to determine whether the facility can be modified to prevent future collisions, or if mitigation is needed. Wildlife avoidance and other behavioral changes should also be evaluated.
Decommissioning	None

WYOMING

BACKGROUND

Contact: Vern Stelter, Wyoming Game & Fish Department, (307) 777-4587, Vern.Stelter@wgf.state.wy.us

Installed Utility Scale Wind Power: 288 MW

INCENTIVES FOR WIND DEVELOPMENT

Renewable Portfolio Standard: No

Incentives for Industrial or "Big Wind" Production:
Wyoming exempts equipment used to generate electricity from renewable resources (limited to equipment to make a system operational up to the point of interconnection with an existing transmission grid) from the state excise tax.

Incentives for Residential and "Small Wind" Production:
None

Interconnection and Net Metering Standards:
Wyoming's net-metering law includes basic interconnection requirements for systems up to 25 kilowatts (kW) in capacity that generate electricity using solar, wind, hydropower or biomass resources; there is no overall enrollment level specified.

ENERGY SITING PROCESS

Power Siting Authority: State Industrial Siting Council, if capital construction costs exceed $160 million (amount adjusted based on construction costs)

Wind Specific Siting Authority? No

Code or Regulations: W.S. 35-12-104

Role of State Fish & Wildlife Agency: Wyoming Game and Fish Department is asked for input on what requirements they would like to have included in the permit (monitoring, siting considerations, impact mitigation). If the Council agrees, those requirements become part of the permit.

How are wildlife laws applied: Same as any other development project. The Industrial Siting Council has the authority to require mitigation in the permit.

WILDLIFE GUIDELINES FOR WIND

Wildlife Guidelines for Wind Power Siting: No formal guidance, projects are dealt with on a case by case basis. Agency typically asks for monitoring of impacts on wildlife (the specifics depending on the site), some siting considerations (e.g., towers built back from ridge edges), and mitigation for unavoidable losses.