REGULATING AVIAN IMPACTS UNDER THE MIGRATORY BIRD TREATY ACT AND OTHER LAWS: THE WIND INDUSTRY COLLIDES WITH ONE OF ITS OWN, THE ENVIRONMENTAL PROTECTION MOVEMENT

John Arnold McKinsey[*]

I. INTRODUCTION

In the renewable energy sector, wind-based energy development continues to expand. Federal and state-based programs encourage the development of renewable energy, and wind appears to be taking the lead. Conferences focused in wind energy abound, many at capacity. Many utilities and traditional energy

* John Arnold McKinsey is an attorney at the law firm of Stoel Rives LLP where he practices siting and development law for the energy industry. A former nuclear power plant operator on submarines in the U.S. Navy, he obtained his B.A. from California State University, Sacramento and his J.D. from University of California, Davis.

companies are aggressively entering this sector. Amidst this booming era for wind energy, however, some problems have been gradually developing. Most are the types of problems any industry expansion must endure, such as equipment reliability problems with new, significantly larger scale, wind turbines.[1] Larger wind turbines mean more visibility, which, predictably, increases the likelihood of visual and aesthetic impact issues.[2] Transmission-related constraints have also arisen as wind energy deals with one significant disadvantage compared to fossil fuels: its immobility. Transmission must come to wind facilities, not vice-versa.[3]

One particularly interesting problem emerging in the wind industry, however, involves a long-time friend of the industry and a long-known issue. Wind energy, like most forms of renewable energy, has long been promoted as being environmentally friendly. To some extent, that is one reason for the push toward renewable energy—the reduced environmental footprint of renewable energy.[4] Thus, many protectors of the environment, long concerned over the effects of excess combustion of fossil fuels in generating electricity, promoted, if not championed, renewable energy in general and, in particular, wind energy. Wind energy is valued in part for its "green" character. It has no direct emissions of air contaminants or green house gasses, and involves almost no recognizable environmental harm in its installation and operation. That is, except for birds.

Avian impacts, originally mostly ignored by many in the development of wind energy, have become a significantly more visible issue for many wind projects.[5] In part, this is due to wind energy's success. As wind energy's role in the United States electricity industry has grown, so too has notice of avian impacts. Birds and bats,[6] of course, collide with wind turbine blades as they

1. During the first major development of wind energy following the energy crises of the 1970's, many designs of gearboxes in the wind turbines that stepped up the slow rotation of the blades to the higher speeds needed for the electricity generator prematurely failed. To some extent, the development of wind turbines was a large field test for the designs. To a lesser degree, the same field test is occurring again with new gearboxes that are larger in scale and size.

2. Witness the controversy raised over the Cape Wind Project off the coast of Massachusetts, where opponents have brought national attention to the visual/aesthetics issues surrounding modern, large wind turbines.

3. In this sense, wind and geothermal energy share the same burden, as both are geographically dependent. Solar, on the other hand, has significantly more flexibility, in terms of being able to be sited near major transmission corridors.

4. Because of their higher supposed environmental impacts, some forms of renewable energy are not as universally embraced, namely bio-mass combustion, hydro-electric, and geothermal power. Wind, solar, and some proposed forms of ocean, wave, current, or tidal energy systems are more universally accepted as "renewable" energy.

5. That is not to say that avian impacts are a new issue to the wind energy industry. The issue has been around for decades. Avian impacts are simply getting harder to resolve and beginning to hinder wind energy development.

6. Bats are not members of the avian class, but rather flying mammals; more specifically order Chiroptera of the class Mammalia. Bird are members of the sister class Aves. Both classes are members of phylum Chordata (vertebrates) of the Animalia kingdom. Bats are treated similar to birds for wind energy purposes because the nature of the impact upon them is the same. As noted later, bats present different issues in terms of assessing impacts because they are nocturnal. In many cases, bats present difficult problems for wind energy projects.

rotate in the sky.[7] Such impacts, often referred to as "avian mortality," would normally be evaluated and managed like many other undesired environmental side-effects. Avian impacts present an awkward issue for the environmental protectors that promoted wind energy. The historical origins of the wind energy industry, combined with several complicating federal laws—the Migratory Bird Treaty Act (MBTA)[8] in particular—have created a growing issue with no resolution in sight. How well the wind industry deals with avian impacts may determine the ability of the industry to continue its amazing success.

This article explores the complexity, and perhaps irony, of the avian impacts issue facing the wind industry. Section II provides background on the history and make up of the wind energy industry and its regulation. Section III explains the laws protecting avian wildlife, particularly the MBTA. The application and enforceability of the MBTA is explained in light of several recent cases that may lead to increased enforcement of the act against some wind projects. Section IV explores the confrontation between wind energy, with its avian impacts, on the one hand and the wildlife protection laws, with their green values and supporters, on the other hand. Section V evaluates the proposed root of the problem, conflicting values, and considers what policy and actions should be taken to resolve the conflict. The article concludes with a call for action by both the legislature and the agencies tasked with enforcement to create a cohesive and updated balance of law and policy that will allow the United States to further tap into its important and vast wind energy resource.

II. BACKGROUND

Wind energy has long been harnessed for its energy content. In terms of electricity production, the energy policies of the late 1970's and early 1980's sparked the first major explosion or growth of wind-based production of electricity. That period of growth lulled in the 1990's, but a new era of growth in the wind energy industry has begun. The current era of growth is fueled in part by improvements in the competitiveness of the underlying technology and in part by governmental policy, incentives, and laws supportive of renewable energy in general and wind energy in particular. The Energy Policy Act of 2005 (EPAct 2005)[9] is one example of recently enacted law and policy that has helped fuel the latest growth in wind energy.

EPAct 2005 promotes renewable energy by providing numerous incentives and assistance to the development of renewable forms of energy. Many states have also taken action to require or encourage the development of renewable energy. A key state-based program has been the Renewable Portfolio Standard (RPS) which requires energy utilities to procure certain percentages of their

7. A seemingly curious debate has long been whether the bird strikes the blade or the blade strikes the bird. The outcome of that debate, however, has serious ramifications for liability and is thus much more than a curious question.

8. 16 U.S.C. §§ 703-11 (2000).

9. Energy Policy Act of 2005, Pub. L. No. 109-58, 119 Stat. 594.

energy from renewable sources.[10] In general, renewable energy is in favor. The term "renewable energy," however, is not without debate as to its meaning.

Generally, renewable energy can be thought of as a source of electricity, heat, or combustible fuel that is consumed at a sustainable pace such that the earth's natural processes replenish those sources at a rate equal to or greater than the depletion.[11] Wind, solar, and geothermal energy are all generally considered types of renewable electricity sources. Of these sources of renewable electricity, harnessing wind energy appears to have the greatest potential for short term development when competitiveness and size of the resource are considered.[12] In 2005, developers installed 2,431 megawatts of wind energy capacity in the United States.[13] Wind energy generation capacity in the United States has grown from essentially zero in 1980 to more than 9,976 MW in 2006.[14]

Wind energy's success in responding to the call for more renewable energy is largely driven by improvements in efficiency, which in turn, are largely driven by a significant increase in the scale of wind projects. Whereas in the 1980's, typical wind projects might have used fifty small turbines and produced five megawatts,[15] today's wind projects might use fifty large wind turbines to produce 100 megawatts.[16] Thus, wind energy facilities have reached the "utility" scale where they are comparable in capacity to a thermal power plant combusting fossil fuels. At the same time, wind energy pricing has come down to close-to comparable levels as well. Wind energy facilities can produce electricity at prices reaching perhaps as low as five cents per kilowatt-hour, compared to three cents per kilowatt-hour for a combustion gas turbine power plant.[17] Since there are significant regions in the United States with untapped wind generation potential, the incentives for and encouragement of renewable energy have led many companies and individuals into a wind land rush. Traditional energy companies, such as Florida Power and Light and AES have joined the ranks of companies devoted to renewable or wind energy, such as Horizon Wind Energy or enXco. Electrical cooperatives, investor owned utilities, and municipal utilities are also increasingly making efforts to develop wind energy.

---

10. Adoption of requirements for energy utilities to procure certain percentages of their energy from renewable sources is common. Renewable Portfolio Standards (RPS) programs are the most common.

11. To some, renewable energy is equated with "soft path" energy, a concept that originated with Amory Lovins in the 1970's. Soft path technologies are those that minimize total social cost, those that are the most resource efficient. For many today, renewable energy is equated with "green energy", energy that is less harmful to humans or the natural environment.

12. American Wind Energy Ass'n, *Wind Energy Fact Sheets*, AWEA, Jan. 1, 2007, *available at* http://www.awea.org/pubs/factsheets.html [hereinafter AWEA *Fact Sheets*].

13. *See* American Wind Energy Ass'n, 3 NORTH AMERICAN WINDPOWER 3, at 6 (2006).

14. AWEA *Fact Sheets*, *supra* note 12.

15. The first generation wind turbines available in the early 1980's had up to 25 kilowatts of capacity and reached over 100 feet high. A 100 kilowatt turbine quickly became a common size.

16. Common wind turbines today are available in 1.0, 1.5, 2.0, and 2.5 megawatt sizes. They stand more than 300 above the ground.

17. Wind energy cost varies with the wind energy content of each site whereas fossil fuel powered energy cost varies with fuel costs. Both vary significantly based on location and time.

III. FEDERAL AND STATE LAWS PROTECTING WILDLIFE

The most problematic wildlife protection law for the wind industry is the MBTA. Other laws, however, are actually more aggressively enforced and applied to wind energy projects. Those other federal laws have viable compliance mechanisms in place that allow the wind industry to attempt to manage the development process while dealing with the law. In some cases, however, even compliance mechanisms fail to resolve impact issues. Similarly, state laws often have regulatory mechanisms allowing projects to deal with impacts they may cause. As applied to wind projects, however, the MBTA, lacks compliance mechanisms, making the MBTA much like a sword of Damocles that could come swooping down at any time. As wind energy grows and moves into ever more regions and habitats, and as wind energy projects grow in scale, even routine wildlife protection laws have become more difficult to navigate.

A. Endangered Species Act

The Endangered Species Act (ESA)[18] is perhaps the most recognized federal wildlife law.[19] For avian issues, the ESA is enforced by the United States Fish and Wildlife Services (USFWS).[20] The ESA prohibits the unauthorized take of a listed species.[21] Take is broadly defined to include not only injury or death to a bird, but also can include destruction of an essential habitat.[22] Where a project can anticipate the taking of species, an incidental take permit can be obtained allowing the take to occur as authorized.[23] The USFWS can be required to consult regarding a project's compliance with the ESA where a project requires other federal agency approvals.[24] For projects lacking federal involvement, project owners can request USFWS consultation. Violations of the ESA can lead to criminal prison sentences and penalties. Civil penalties can be as much as $25,000 per violation where as criminal penalties can reach $50,000 and up to one year in prison per violation.[25]

Several bats are listed as endangered or threatened species under the ESA.[26] As discussed further below, bat kills can present a significant problem for wind projects operating in an environment containing bats listed under the ESA.[27]

---

18. 16 U.S.C. §§ 1531-43 (2000).

19. For an overview of the ESA, *see generally* THE STANFORD ENVIRONMENTAL LAW SOCIETY, The Endangered Species Act (2001).

20. The USFWS is a division of the Department of the Interior. The ESA assigns the Secretary of the Interior to enforce the ESA. *See also*, 16 U.S.C. § 1533(a) (2000).

21. 16 U.S.C. § 1531 (2000).

22. *Id*. at § 1532.

23. 16 U.S.C. § 1539 (2000).

24. Referred to as a "Section 7 consultation."

25. 16 U.S.C. § 1540 (2000).

26. Six bats found in the continental United States are listed as endangered: the lesser long nosed bat, the Mexican long nosed bat, the gray bat, the Indiana bat, the Ozark big-eared bat, and the Virginia big-eared bat.

27. Besides ESA-listed bats, non-listed bats, if killed in sufficient numbers can also invoke regulatory scrutiny under the general environmental harm prevention statutes, both state and federal. *See infra*, discussion of National Environmental Policy Act, Section IV.D.

The ESA allows private citizen suits alleging violations of the ESA. The potential for citizen suits is often the reason why a wind project might seek USFWS consultation and seek an incidental take permit. Some wind developers choose consultation as a matter of policy and as a protective measure. Wind projects can result in an ESA-take when built in or near essential habitat that will be harmed by construction activities. Wind projects can also cause ESA-take operationally, if a listed species of bird is killed during operation. This latter ESA-take must be predicted based on the presence of endangered species and the probability of those species impacting the turbine tower or blades. An incidental take permit would resolve these potential ESA-takes and is the primary reason why it is sought.

Where take is possible, private individuals and organizations can seek an Incidental Take Permit. This is accomplished by submitting a proposed Habitat Conservation Plan to the USFWS along with an application for an Incidental Take Permit. The process can be as short as three months from application and as long as several years, depending on the complexity of the impacts involved and the availability of resources within the local USFWS office.[28] Generally, the Habitat Conservation Plan must minimize impacts and taking of species and provide mitigation for expected take.[29]

Incidental take permits, however, are not without their own uncertainty. A project owner must initiate the incidental take permit process without certainty as to what the USFWS will require in the form of operational constraints or mitigation costs.[30] The process itself can take several years. For the Incidental Take Permit to be effective, it must accurately predict impacts. Assisting in this regard, the USFWS enacted an assurances rule called the "no surprises rule," which provides assurances that holders of Incidental Take Permits will not have ESA enforcement actions brought against them as long as the species taken was included in the Habitat Conservation Plan, and the requirements of the plan and permit are being followed.[31]

B. Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (BGEPA)[32] provides specific protections to Bald and Golden eagles. Like the ESA, the BGEPA is enforced by the USFWS. The BGEPA declares that no person shall take a Bald or Golden eagle and defines take to include the acts of "pursu[ing], shoot[ing], shoot[ing] at, poison[ing], wound[ing], kill[ing], captur[ing], trapp[ing], collect[ing], molest[ing], or disturb[ing]."[33] The meaning of the word "disturbing" in the

28. Notice of Availability of Final Handbook for Habitat Conservation Planning and Incidental Take Permitting Process, 61 Fed. Reg. 63,857 (Dec. 2, 1996).

29. *See generally* United States Fish And Wildlife Service, Habitat Conservation Plans: Section 10 of the Endangered Species Act (Dec. 2006), http://www.fws.gov/Endangered/hcp/HCP_Incidental_Take.pdf.

30. Most areas have "thumb rules" that specialists in that area can provide in advance to developers. Unfortunately, most thumb rules relate to habitat damage, which is not the issue with operational harm such as with avian wind turbine impacts. Still, these thumb rules can translate over if the covered ground surface area is added up and used to compute equivalent acreage requiring offsets.

31. 7 C.F.R. § 222 (1998).

32. Bald and Golden Eagle Protection Act, 16 U.S.C. §§ 668-68d (2000).

33. *Id.* at § 668c.

BGEPA is currently being reviewed by the USFWS for possible regulation clarification or change.[34] The BGEPA differs from the ESA in the fact that its "take" definition does not include damage to habitat. The BGEPA provides for civil penalties regardless of intent, but applies criminal penalties only for "knowingly" causing the death of an eagle or acting with "wanton disregard" of the consequences.[35] The BGEPA provides both criminal and civil penalties.

The BGEPA allows only certain take permits for the express take of eagles and does not contain an incidental take permit program as the ESA does.[36] Thus, as with the ESA, there are means of complying with the law for land use or development projects that risk harm to Bald and Golden eagles.

C. Migratory Bird Treaty Act

The MBTA is, in many ways, a bird of a different feather from the ESA and the BGEPA. It is a much older law, having been enacted in 1918, well before the advent of the environmental protection movement of the sixties and seventies. The MBTA uses very broad language in its prohibition: "[I]t shall be unlawful at any time, by any means or in any manner, to pursue, hunt, take, capture, kill . . . any migratory bird . . . ."[37] The scope of prohibited conduct has been addressed numerous times. Scienter is not required,[38] and the use of the word "any" several times in that prohibition has been interpreted several times to mean that conduct not expressly cited can be included as prohibited conduct.[39] The USFWS is responsible for enforcing the MBTA.

Unlike the ESA, the MBTA has no incidental take permit or its equivalent. Instead, there are only some very specific take permits allowed for specific purposes, such as falconry and scientific collecting.[40] The MBTA itself authorizes take permits for numerous intentional acts including hunting, and there is actually a set of regulations specifically for the hunting of migratory birds.[41] The MBTA reaches a tremendous number of species of birds, currently more than 800.[42] The unauthorized killing of any one of those species constitutes a violation of the MBTA.

The MBTA provides criminal penalties for its violations. Unknowing violations of the MBTA can receive fines up to $15,000 per violation and prison terms up to six months. Knowing violations are felonies and receive fines of $250,000 to $500,000 per violation and up to two years in prison.[43] Several cases have allowed strict liability for the take of migratory birds, even where the

---

34. Protection of Bald Eagles; Definition of "Disturb", 71 Fed. Reg. 74,483 (Dec. 12, 2006) (to be codified at 50 C.F.R. pt. 22).

35. Bald and Golden Eagle Protection Act § 668(a).

36. *Id.*

37. Bald and Golden Eagle Protection Act, 16 U.S.C. § 703 (2000).

38. *See generally* United States v. FMC Corp., 572 F.2d 902 (2d Cir. 1978); United States v. Catlett, 747 F.2d 1102, 1104 (6th Cir. 1984).

39. *See generally* United States v. Corbin Farm Serv., 444 F. Supp. 510 (E.D. Cal. 1978).

40. 50 CFR § 10.13 (2005).

41. Migratory Bird Treaty Act, 16 U.S.C. § 705 (2000); 50 C.F.R. § 20 (2006).

42. 50 CFR § 10.13 (2005).

43. Migratory Bird Treaty Act § 707. It is clearly possible that wind turbine avian kills could be considered "knowing violations."

take appears incidental to other conduct. Two cases, *United States v. Corbin Farm Services*,[44] and *United States v. FMC Corporation*,[45] involved criminal sentences for pesticide use that resulted in the killing of migratory birds. In a recent case, *United States v. Moon Lake Electrical Association*,[46] that reaches the electrical power industry, an electrical utility that refused to install bird guards for power lines was found criminally liable for the unintended killing of migratory birds from electrocution.

More realistically, for wind turbine operators, it is fair to expect a punishment commensurate with the crime. Thus, where a wind energy facility has evaluated and taken measures to reduce avian collisions, and where a wind energy facility has engaged federal and state wildlife authorities such as the USFWS, enforcement of the MBTA should be expected to result in lesser or minimal punishments. This might be little consolation to the individual manager or executive facing criminal charges for MBTA violations.

The MBTA is mostly accommodated in the United States by being ignored, or more euphemistically, by "selective enforcement." The doctrine of selective enforcement as a means to comply with the MBTA was expressly stated in a USFWS memorandum.[47] Because the MBTA contains no private right of action, individuals and non-governmental organizations dedicated to the protection of wildlife cannot use the MBTA directly. This lack of a private right of action is what gives the selective enforcement rule its value: if the USFWS does not enforce then there will be no enforcement of the MBTA, since no other agency can enforce it.

Because the MBTA's scope is so expansive, its authority reaches probably every wind energy project. The wind energy industry is not alone. The MBTA's protected birds are killed through collisions with cars and buildings. Electrocution of the MBTA's protected birds has long been a problem in the electric utility industry when birds perch in location that provides a path to ground for power. High voltage power lines can electrocute without a grounding path. As discussed further below, the history of MBTA enforcement against the utility industry and the industry's efforts to establish methods of reducing avian impacts provide insight into the potential problems that the MBTA may present the wind energy industry and also into possible solutions. Mostly, however, the entire industrial sector, including wind energy, depends upon the USFWS's selective enforcement history and the lack of a private cause of action for protection from MBTA liability.

In recent years, there have been several attempts to enforce the MBTA through the Administrative Procedures Act (APA).[48] The theory underlying these attempts argues that when a federal agency fails to comply with a statute when performing an act subject to the APA, then that failure is a violation of the APA. Thus, when the USFWS takes an action related to a wind project—for

44. United States v. Corbin Farm Serv., 444 F. Supp. 510 (E.D. Cal. 1978).

45. United States v. FMC Corp., 572 F.2d 902 (2nd Cir. 1978).

46. United States v. Moon Lake Elec. Assoc., 45 F. Supp. 2d 1070 (D. Colo. 1999).

47. Memorandum from U.S. Dep't of the Interior, Fish and Wildlife Service on Service Interim Guidance on Avoiding and Mitigating Wildlife Impacts from Wind Turbines (May 13, 2003), http://www.fws.gov/habitatconservation/wind.pdf [hereinafter Fish and Wildlife Service].

48. Administrative Procedures Act, 5 U.S.C. § 500-706 (2000).

example issuing an Incidental Take Permit—then USFWS' failure to enforce the MBTA would be actionable under the APA. The two cases addressing this approach on the merits involved challenges to governmental decisions allowing governmental action, not challenges to actions of private individuals. Even then, the first case failed on appeal,[49] and the second case became moot while on appeal because Congress intervened with regulations granting an incidental take permit for the activity.[50] This latter case foreshadows a primary recommendation of this article—that Congress should intervene in the wind energy avian situation and grant an incidental take permit for wind energy impacts.

D. National Environmental Policy Act

The National Environmental Policy Act (NEPA)[51] requires that federal agencies assess the environmental consequences of proposed governmental actions and alternatives available to avoid those consequences.[52] Federal agencies must also prepare detailed documents that detail the environmental analysis.[53] Many states have adopted laws substantially identical or similar to NEPA.[54] NEPA and the state-equivalent NEPA laws present a slightly different type of a wildlife issue than the wildlife-focused laws. While the ESA, the BGEPA, and the MBTA are focused on specific impacts to specific classes or species of wildlife that can be as few as a single animal being harmed or killed, NEPA and NEPA-equivalent laws look at impacts as a whole. The killing of otherwise unprotected birds could still be a forbidden impact to an ecosystem if 100,000 of those birds were killed. As wind energy projects have grown in scale, so to have the scale of their impacts. Thus, modern wind energy projects are much more likely to trigger NEPA level reviews.

When conducting NEPA-style impact assessments for wind energy avian impacts, guidance is needed regarding the method of assessing impacts. Generally, literature studies followed by on-site field inspections are relied upon to generate data from which an assessment of the potential for birds to strike a wind turbine blade is made. The newness of the scale of the wind industry projects and their turbine size has forced recent development of new ideas and standards for assessing avian impacts. For instance, the USFWS issued "Interim Guidance" on avian impact avoidance in 2003.[55] Not only was this guidance "interim" but it also lacked specificity, prompting many in the wind industry to dismiss its value. Similarly, a joint effort is underway by the Wildlife

---

49. Sierra Club v. Martin, 110 F.3d 1551 (11th Cir. 1997).

50. Ctr. for Biological Diversity v. Pirie, 201 F. Supp. 2d 113 (D.C. Cir. 2002), *appeal dismissed sub nom*., Ctr. for Biological Diversity v. England, 02-5163, 2003 U.S. App. Lexis 1110 (D.C. Cir. Jan. 23, 2003).

51. National Environmental Policy Act of 1969, 42 U.S.C. §§ 4321-75 (2000).

52. *Id.* at § 4332; NICHOLAS C. YOST & SONNENSCHEIN NATH ROSENTHAL, THE NEPA DESKBOOK (Envtl. Law Inst. 3rd ed. 2003).

53. National Environmental Policy Act § 4332; 40 C.F.R. §§ 1500-05 (2005).

54. According to the Council on Environmental Quality the following states have NEPA-equivalent laws: California, Connecticut, Georgia, Hawaii, Indiana, Maryland, Massachusetts, Minnesota, North Carolina, South Dakota, Montana, New Jersey, New York, Virgina, Washington, and Wisconsin. State Environmental Planning Information (2006), *available at* http://ceq.eh.doe.gov/nepa/states.html.

55. Fish and Wildlife Service, *supra* note 47.

Workgroup Core Group of the National Wind Coordinating Collaborative (NWCC),[56] a voluntary coalition of government, industry, and representatives, to develop and promote consistent standards relating to the avian impacts. This group, however, is still advancing towards such standards.[57]

Lacking clear standards, each federal agency tasked with implementing NEPA must rely upon dueling experts to determine what an effective methodology for assessing avian impacts is. The same problem applies to states having NEPA-equivalent laws. This ad hoc approach breeds controversy and litigation, and, ultimately, increases uncertainty at the expense of project funding viability. Uncertainty is addressed below.

IV. CONFRONTATION

The laws that regulate impacts to avian wildlife in the United States are colliding with renewable energy policy and promotion in the United States. In particular, wind energy systems and the industry as a whole have grown to a scale that wildlife impact issues, long in background, have come to the forefront. Chief among them are avian impacts. Yet the very problem of avian impacts is complicated, if not created, by other federal and state policies and laws that have not been adjusted to reflect current energy policy favoring renewable energy. In short, to continue to sustain the renewable energy boom led by wind energy, Congress and federal agencies and, in some instances, state government, may need to revise existing wildlife protection law and policy.

A. Wind Industry Role in Renewable Energy

Renewable energy has generally been a component of United States energy policy for several decades. Various investigations, rulemaking, and enticements have been required to encourage the development of renewable energy sources. EPAct 2005 extended the wind energy tax credit and had other supportive provisions for renewable energy and wind energy.[58] RPS laws, implemented in a limited form in EPAct 2005 and in broad form by many states, are also encouraging the development of renewable energy.[59] Under an RPS, the governmental unit requires that a certain percentage of electricity be obtained from renewable sources.[60] While the definitions of renewable sources differ from state to state, wind and solar are consistent components. State RPS programs, however, are burgeoning. Currently, seventeen states have adopted

56. *See* The National Wind Coordinating Collaborative, http://www.nationalwind.org [hereinafter NWCC]. The NWCC is a voluntary organization including representatives of the USFWS, utilities, wind energy companies, scientists, and environmental organizations. *Id.*

57. *See generally* NWCC, *Wind Turbine Interactions With Birds and Bats: A Summary of Research Results and Remaining Questions*, Nov. 2004, http://www.nationalwind.org/publications/wildlife/wildlife_factsheet.pdf.

58. Energy Policy Act of 2005, Pub. L. No. 109-58, § 211, 119 Stat. 594.

59. *Id.* § 203.

60. To some, the RPS in EPAct 2005 is not actually an RPS, but rather a purchasing requirement the federal government has imposed upon itself. Under EPAct 2005, the federal government must purchase 7.5% of its energy from renewable sources by 2013. A federal RPS, to some, would be a federal mandate to utilities to achieve minimum portfolio percentages of renewable energy procurement.

RPS standards including California, Colorado, and New York.[61] Typically, an RPS requires around ten to twenty percent of renewable energy procured by a utility to be certified or approved as renewable by a date within seven to fifteen years.

As the call for increasing the reliance upon renewable energy has been growing, it has mostly been answered by wind energy. In part, this is because wind energy had a head start. It does not require the steam power plant of a geothermal project or bio-mass generating station. Likewise it does not rely upon the very new and technical concept of photo-voltaic cells that convert sunlight to electricity as solar does. It does not even require elaborate efforts to collect and harness natural resources like water, as hydroelectricity does. Instead, it harnesses wind in its natural form and converts it to rotational mechanical energy, which is in turn converted to electricity. The idea of harnessing wind to do mechanical work has of course been around since pre-Don Quixote days.[62] Wind is also pervasive across the face of the earth. For all these reasons, wind turbines have proliferated. As the scale of wind turbine projects have grown, allowing better economies of scale, which in turn has led to lower costs per unit of electrical energy, wind energy has dominated the development of renewable electricity sources.

The modern wind generating facility is tremendous in scale. One megawatt to two megawatt turbines are common. The blade tip can reach more than 400 feet in the air on common large sizes. Turbine blade diameters reach more than 250 feet. These large structures are placed in locations according to precise modeling to determine the ideal configuration of locations for a given parcel or set of parcels of land to maximize total generation potential. Wind energy projects are supported by teams of consultants that model, measure, map, evaluate, advise, and predict. Wind energy, however, remains grounded to several basic tenets. First, the location has to be windy on a relatively regular basis. The United States has been publicly and privately mapped numerous times to show the windiest locations in the country. Second, transmission has to be available or feasible to allow the generated electricity to reach the national grid and, in turn, reach users. Those criteria have historically driven wind project locations.

B. Predicting and Assessing Avian Impacts

It is intuitive that flying birds or bats could, and probably will, collide with rotating wind turbine blades. Avian collisions with both moving objects, such as vehicles, and stationary objects, such as buildings, have long been witnessed by humans and generally accepted as a toll the human environment takes on

61. American Wind Energy Assoc., *State-Level Renewable Energy Portfolio Standards (RPS) Fact Sheet* (Jan. 30, 2005), http://www.awea.org/legislative/pdf/RPS_Fact_Sheet.pdf.

62. Annoying to most wind energy industry members, many journalists cannot resist the temptation to talk of "tilting at windmills" when writing of wind energy news, referring of course to the fictional character, Don Quixote and his mad quest to joust windmills in Miguel de Cervantes Saavedra's DON QUIXOTE DE LA MANCHA. Most annoying about the reference to windmills is that wind-generated electricity does not use a "windmill" but instead a "wind turbine generator" or often just "wind turbine."

wildlife.[63] What is not as well understood is how many birds or bats collide with wind turbines. Even less understood is how many birds or bats *will* collide with a *future* wind project that exists only on paper. Avian impacts, moreover, have not traditionally been a criteria used for site selection. Instead, avian collision issues are mostly dealt with in the permitting phase of a project or perhaps not until actual operation occurs. As the industry has matured, and as the scale of wind projects has grown, environmental laws such as NEPA and NEPA-equivalent laws are increasingly forcing pre-project evaluations of avian and bat impacts and post-project studies of actual impacts. These surveys can also be required to satisfy ESA and BGEPA consultations and incidental take permit process applications.

1. Pre-project Surveys

Pre-project surveys attempt to predict what the impacts *will* be. Thus, pre-project surveys are rooted in prediction science. This science, however, is new and methodologies vary across the country and even within states themselves. The industry and involved agencies are making varied, sometimes conflicting efforts to establish standards for the assessment of avian impacts.

Most commonly, potential avian impact studies include literature research and on-site observations to determine the species and quantities of species that will be present or will pass-through a wind project. Then, an analysis is conducted to determine the specific, probable number of birds that will be injured by the turbine blades. The significance of these injuries is assessed in the context of the applicable laws. For the ESA and BGEPA, each "take" of a protected species requires address. Under the MBTA, in theory, the same should be true for every protected bird, though as discussed, the MBTA largely goes un-enforced in wind projects. Finally, and perhaps most complexly, the effect on bird populations might need to be assessed if a significant quantity of birds will be harmed relative to the population as a whole. This last assessment can involve very subjective and conflicting opinions of ornithologists and other avian experts.

The science and standards of studying avian impacts is evolving. A time tested method is to conduct ground surveys at appropriate times of the year, use the bird counts from those surveys to calculate a theoretical total number of birds, and then apply formulas to predict what percentage of those birds will be killed. The appropriate process for conducting the ground survey is ever changing and is often controversial. For instance, is mere observation enough, or should nets be used to capture ground occupying birds for counting? What time of day should ground surveys be conducted? How many days? What months or seasons should be surveyed? Finally, the biggest question, what about nocturnal birds and, of course, bats?

Nighttime surveys, of course cannot be visual.[64] Auditory surveys are useful for species that make noises, some owls for instance. Otherwise, predicting nighttime bird and bat impacts requires either the use of radar surveys

63. It is worth noting that avian collisions with wind turbines are usually considered to be less than auto and building collisions by an order of magnitude.

64. Though one theoretical method involves shining bright lights briefly to count illuminated birds.

or daytime habitat evaluation. The use of radar is relatively new and at an early stage in its evolution. Birds and bats appear as blips and lines on a radar screen. Each blip and line must be interpreted. Fast moving blips are often bats or small hunting birds. Slow moving ones are often soaring owls. Higher altitude contacts are probably nighttime migrating birds.

2. Operational Studies

Once operational, wind projects are increasingly being required to conduct studies of *actual* impacts. These often require site inspections to count bird carcasses. Bird carcass numbers are manipulated through formulas to assess actual total impacts. Bird carcass counting, while sounding accurate and adequate on paper, is not always supported by interest groups as being accurate or adequate. An injured, mortally or otherwise, but not immediately killed bird or bat might fly some distance before landing. Killed birds and bats might be carried off during the night by predators or scavengers.[65]

Depending on the status of the species killed and the scale of the impacts, operational studies can force projects to obtain additional permits, reduce or stop the operation of some turbines during some periods of the year, or provide off-site mitigation or restoration. Post-operational surveys thus, while allowing certainty after-the-fact to the extent that the study process is generally accepted, creates uncertainty before operations, during permitting and construction. This uncertainty may present problems for project financing. This problem is discussed further below.

An avian impact assessment industry is evolving right along with the wind energy industry. Companies exist that are nearly exclusively studying avian impacts for wind projects. Businesses have started up solely to provide radar survey services for wind projects. Evaluating avian impact risk has become an accepted practice in developing wind energy projects. Such efforts can be very expensive, depending in part on what level of effort is required. In general, avian impact risk evaluation is people-intensive. The various activities all involve individuals watching, catching, and/or counting birds or inspecting the ground for clues as to what birds or bats might utilize the project location. Night time surveys are also costly. Radar surveys alone, must factor in the cost of radar equipment as well as the operator or operators. The biggest problem of all, however, may be that impact standard.

3. Efforts to Standardize Impact Assessment

Standardized avian and bat impact study requirements would be of great value to the wind energy industry. Many efforts have been made or are being made to accomplish that. In 2005, USFWS issued interim guidelines for the wind energy industry.[66] Met with much fanfare, the guidelines were not well received and ultimately were withdrawn. Critics pointed out that the guidelines lacked specificity, the one key component they needed to be effective at

65. Unconfirmed stories circulate of vulture deaths caused by the scavenger bird's efforts to reach killed birds lying on the ground beneath wind turbines.

66. Fish and Wildlife Service, *supra* note 47.

standardizing the prediction and assessment of avian impacts.[67] USFWS probably struggled with the core problem of standardization efforts: not all locations and projects have the same species or the same survey needs. A survey methodology needed at one site might be superfluous at another. Likewise, fall surveys needed at one site might be pointless at another.

Another problem inherent in the USFWS effort lies in the multiple jurisdictional nature of many wind projects. Many wind projects do not involve federal land, making the USFWS and the laws it enforces only part of the regulation of avian impacts at best, and minor involved laws at worst. For many wind projects, state laws also loom large. Thus, a coordinated national effort would be advantageous. Such an effort might lie in the NWCC's efforts to provide sound practices for developing wind resources in the United States.[68]

While standardized assessment methodology might resolve the issues over predicting or measuring avian and bat impacts caused by wind projects, they will not eliminate the other core issue: establishing what impacts will be allowable under what circumstances. This latter problem is creating barriers and uncertainty of its own. A collaboration of utility industry and conservation representatives recently released updates for power line electrocution avoidance. The Avian Power Line Interaction Committee (APLIC) released its 2006 Suggested Practices Manual in November of 2006, which provides comprehensive guidelines for the siting, design, construction, and operation of power lines to reduce avian electrocution.[69] This APLIC effort highlights the concern the electrical industry has over avian impacts and also the industry's need to turn to private cooperative efforts to reduce both avian impacts and liability. Similarly, the wind energy industry is also striving to reduce avian impacts.

C. Mitigating and Reducing Avian and Bat Impacts with Wind Turbines

As wind energy projects began emerging in the late 1970's and early 1980's, it quickly became obvious that avian impacts might require extensive efforts to reduce them by design or practice. What has followed has been a long quest to test various ideas that held promise towards reducing avian impacts. Generally speaking, the methods can be divided into four categories: deterrence through equipment design, project location, and operation, and offsetting mitigation. The science and practice of reducing impacts has found various practices that have reduced avian impacts, but there is growing indications that further progress may be long in coming as few new progressive ideas are emerging.

Early on it was clear that the design of wind turbines and their towers could be improved. One simple solution was to reduce equipment that offered perching opportunities for hunting birds such as hawks and eagles. Single pole towers quickly became preferred over multi-leg lattice towers. Today, as wind

67. A common criticism was that the guidelines suggested parameters, or a range of parameters, without specifying when a particular parameter should apply and when it should not.

68. NWCC, *supra* note 56.

69. AVIAN POWER LINE INTERACTION COMM., SUGGESTED PRACTICES FOR AVIAN PROTECTION ON POWER LINES: THE STATE OF THE ART IN 2006, *available at* http://www.aplic.org.

turbines have grown in size, single pole towers are the norm. But this may not be for avian impact reduction reasons. In fact, one study evaluating the benefits of eliminating lattice style wind turbine support structures found little or no benefit.[70] Other design ideas have been implemented or are being tested. For instance, experiments have been done and are being done to test various painting schemes on turbine blades, with the idea of making turbine blades more visible and noticeable to birds.[71] There is a theory that newer and larger wind turbines, with their slower more visible motions, might reduce collisions. Still more studies and ideas have involved using radar to steer off birds or placing lights at selected locations to avoid impacts.[72] Bats present a curious problem in regard to deterrence ideas. With their radar, one would presume that bats would be easily able to avoid impacts, yet the high bat-kill rates at some project's plants belie this assumption.[73]

Another approach to avian impact reduction involves location and operation of wind turbines. As the industry has matured, the initial project location decision is increasingly involving evaluation of the potential for avian impacts. Thus, the ultimate way to avoid avian and bat impacts, not building the project, is becoming increasingly viable. High value wind resource areas, however, attract developers so this strategy may only work to deter more risk adverse developers from the major wind resource areas.

D. Wind Energy Confrontations

Some interest groups have risen to challenge established and proposed wind projects in recent years. To date, there have not been any successful defeats or court-ordered shutdowns of wind projects, but the potential for such outcomes appears increasingly possible as opponents gain sophistication and wind projects grow in scale and number. Three example wind project confrontations provide a good overview of the varying types of issues, interests, and laws that are being increasingly fought over.

1. Altamont Pass

A legacy wind resource area, the story of the Altamont Pass, east of the San Francisco Bay area, provides an excellent overview of past and present avian impact issues. Altamont Pass was developed in the early 1980's during the first wind energy boom. These early turbines, often called "first generation" wind turbines, were small in stature and varied tremendously in their design. The blades on most designs were propeller style and spun quickly, often seen as a blur. Altamont Pass, it turned out, while an excellent wind resource area, was also a challenging location to avoid avian impacts. Worse, this area of rolling hills was a primary hunting ground for large birds of prey, raptors. The end

70. *See* CAL. ENERGY COMM'N., A ROADMAP FOR PIER RESEARCH ON AVIAN COLLISIONS WITH WIND TURBINES IN CALIFORNIA (2002), *available at* http://www.energy.ca.gov/reports [hereinafter Cal. Energy Comm'n].

71. *Id.*

72. Cal. Energy Comm'n., *supra* note 70.

73. Bats continue to puzzle researchers. Some projects have a very large bat kill whereas others have minimal bat kill.

result was numerous dead raptors. Actual numbers have never been agreed upon by the various sides in the Altamont Pass confrontations, but a significant number of study efforts have taken place. Estimates often claim that more than 1000 eagles, hawks, and owls are killed each year.[74]

Several legal efforts have been made to stop the operation of the wind turbines in the Altamont Pass or force lengthy detailed environmental studies. Though no lawsuits have prevailed, the responsible permitting agency, the County of Alameda, has ordered an extensive study of avian impacts for the region as part of the gradual retrofitting of the region to new, larger wind turbines. The main challenge to the wind projects there has involved the compliance with the California Environmental Quality Act (CEQA),[75] the NEPA-equivalent law in California. The current operators,[76] meanwhile have been undertaking efforts to assess and reduce, avoid, or mitigate impacts.[77] The transition from the first generation small wind turbines to large, modern generation turbines has also provided an opportunity to compare the generations of wind turbines to determine if modern wind turbines have a lesser impact on a power produced or acreage affected basis.

If Altamont Pass were to be considered for wind development today, the permitting process would certainly be a different story. Whereas in the 1980's, project location selection focused on the wind resource primarily, while today developers must look carefully at the environmental issues a wind resource area presents. Initial studies would readily reveal the high frequency of raptor hunting and that would, in turn, caution development before the scope and cost of liability and remediation could be assessed.

2. Flint Hills

Flint Hills[78] is a tallgrass prairie area in Kansas. Like many of the windy prairie areas of the Midwest it offers sustained high winds that have attracted wind development during the current boom. In some ways, the Flint Hills habitat presents issues similar to those of Altamont Pass. The Flint Hills confrontation, however, differs primarily by its involvement with the MBTA and also by the fact that it is entirely a new project with no history of first generation wind turbine use such as with Altamont Pass

Whereas in Altamont Pass, it was the ESA and NEPA-equivalent CEQA statute that was applied, the challenge in Flint Hills involved an attempt to assert that the project in question would violate the MBTA because it would kill

74. Many opponents came to call the wind turbines in Altamont Pass "bird blenders" a term that has hung on the wind industry like an albatross tied around its neck.

75. CAL. PUB. RES. CODE §§ 21000-177 (West 2005).

76. Originally the wind turbines were owned by many small operators. Gradually these smaller operators were bought out resulting in several wind energy companies owning the vast bulk of the turbines, led by Florida Power and Light which operates more than 2000 of the approximately 5000 wind turbines in the region.

77. *See also* Dale Strickland & Wallace Erickson, Study Plan For Testing Effectiveness of Management Measures for Avian Fatality Risk Reduction at Altamont Pass Wind Resource Area (Nov. 2004) (last visited Jan. 20, 2006), http://www.nationalwind.org/events/wildlife/2004-2/presentations/Strickland_Altamont.pdf.

78. The author's law firm represented the defendants in the Flint Hills cases. This article reflects views solely of the author and not any of the defendants.

migratory birds protected under the Act.[79] The values driving the challenge were mostly the same. Plaintiffs feared the killing of owls, hawks, and eagles along with general damage to the tallgrass prairie habitat by virtue of the project and its impacts on raptors.

The plaintiffs failed. The Tenth Circuit affirmed the District Court's holding that the court lacked jurisdiction under the MBTA for lack of a private cause of action. Going unspoken, in the dismissal of the case, was the answer to the question whether the project would violate the MBTA. In fact, given the broad scope of the MBTA and lack of any permit or exemption allowing take, many felt that it was clear that the project, like nearly all, if not every wind project, would have take of birds protected by the MBTA. Thus, the protection afforded Flint Hills was the same protection relied upon by all wind projects as to the MBTA: lack of a private right of action and the tolerance of the USFWS of the take occurring at wind facilities. Stated another way, wind facility operators avoided the sword of the MBTA at the good grace of the USFWS.

3. Pine Tree

The Pine Tree[80] confrontation illustrates the very complex issue involved when the concerned avian mortality involves an abundant population that is alleged to be threatened with some significant level or injury. The Pine Tree Wind Energy Project is proposed in a rocky canyon area of Southern California receiving little annual rainfall. Thus, its habitat differs significantly from those habitats sustaining large year round bird populations. In Pine Tree, the issue was the impacts to migrating songbirds that might have potentially used the project area for rest and foraging in the spring or fall. Two chapters of the Audubon Society challenged the adequacy of the CEQA Environmental Impact Report[81] as to its assessment of songbird impacts. Specifically, the Audubon chapters claimed that little or no adequate on-site observations or surveys were completed. They thus argued that Songbird impacts had not been properly assessed. The challenge in the Superior Court of California failed and the Audubon chapters appealed. The appeal was pending at the time this article was written.

Pine Tree, while sharing the same underlying statute as Altamont Pass, namely CEQA, involved the fundamental issue of what the legal standard is or should be applied to assess avian impacts to a large population of birds that might migrate through an area. It reflects the current questions of how many years of on-survey data is necessary and how many different months or seasons must be involved in those years. Actual on-site survey methodologies were also questioned. Were mere observations sufficient, or are capture-and-count methods such as mist-netting necessary? Finally, time-of-day or better stated, time-of-night, issues presented themselves. Are nighttime surveys needed? If so, how must they be conducted? Is the use of radar necessary for nighttime

79. Flint Hills Tallgrass Prairie Heritage Foundation v. Scottish Power, 147 Fed. App'x 785 (2005).

80. The author represented the developer of the project in the Pine Tree case in the subject litigation. This article reflects views solely of the author and not those of any party to the litigation.

81. An Environmental Impact Report under CEQA is the functional equivalent of an Environmental Impact Statement under NEPA.

surveys? All these questions remain lurking in the background of most wind projects today. Currently, there is no consensus or legal standard on these issues.

Altamont Pass, Flint Hills, and Pine Tree collectively illustrate the myriad of controversial avian issues and laws facing wind projects today. One notable and consistent feature of these three example confrontations is the mostly local character of the opposition. Most national environmental protection organizations are supportive of wind energy, and many have made such policy declarations. These three projects demonstrate, however, that such mainstream, national leadership has not been able to deter local groups, concerned over local impacts from opposing local projects. In Pine Tree, it was two local Audubon chapters opposing the project, not the national Audubon organization. In Flint Hills, it was a local environmental organization dedicated to protecting the local prairie habitat. The environmental opposition to wind has much more of a NIMBY-ist character than a national environmental organization character. The local character of opposition both helps and hurts. While local opposition can often lack expertise and resources, local opposition can be harder to predict and deal with.

While all three of these projects have not been prevented from continuing towards or sustaining operation, the uncertainty these issues create certainly threatened and perhaps continue to threaten these projects as well as many others.

F. The Development Problem: Uncertainty

The development of a modern wind project costs tens of millions, and often hundreds of millions of dollars.[82] Thus, the source of funds and the willingness of banks or holders of capital to support a project are critical factors in the success of a modern wind project. Traditionally, lenders balance risk with rate of return. For large electrical generating projects, the limits on rate of return, driven by a mostly regulated or competitive market, require limited risk before funding will be released to allow construction. Thus, there is low tolerance for uncertainty in wind energy projects.

Unfortunately, there are multiple sources of uncertainty in wind energy projects. Wind energy faces its own inherent uncertainty as to how much energy will actually be produced.[83] Uncertainty of the ability of the project to obtain permits can, and often does, prevent funding. Uncertainty on costs can be a problem.

The uncertainty brought on by unknown avian impacts, unknown possible consequences to the ability of the project to operate, and unknown mitigation costs can reach all these categories of uncertainty in a wind energy project and can be an unbearable burden on project financing. Avian impacts thus present several distinct challenges to wind energy developers, all related to assessing and

82. A current rough pricing, based on public data, puts wind projects in the area of $1.5 million per megawatt. Robert Thresher, *Wind Power Today*, EJOURNAL USA, June 2005, *available at* http://usinfo.state.gov/journals/itgic/0605/ijge/thresher.htm.

83. Wind strength varies with time, and projections of the future wind energy production are modeled guesses founded upon wind data from the recent past. Thus nearly all wind projects present production risk.

managing avian and bat impacts: for instance pre-project permitting uncertainty and post-operation risk of reduced operation, shutdown, or fines for avian impacts.

The uncertainty brought on by reliance on selective enforcement of the MBTA is perhaps the most difficult risk to precisely assess. For the time being, resolution of MBTA issues is a fine balancing act, capable of being upset by perhaps just one catastrophic case where a wind energy facility is forced to grapple with take under the MBTA.[84] One can look towards a sister industry, the general electrical utility industry and its history of impact issue and enforcement regarding power line interaction, for an example of the vulnerability of an industry to MBTA attacks.

The lack of clear standards in the assessment of avian impacts not only has created some of the wind energy opposition or concern but is also a source of uncertainty. Unclear standards for assessing impacts make it more questionable that a project will receive a permit and also raise questions regarding how well that permit will sustain a legal challenge. That uncertainty must also be overcome. Fortunately, the passage of time frequently alleviates these sources of uncertainty. Once a statute of limitations on a legal challenge has passed, uncertainty regarding the legitimacy of the studies and impact assessment can become moot. Delays, however, can be devastating to projects. Other permits might expire while the lead permit is undergoing legal challenge. Funding can be made available for only a period of time. Further, some permits have no statute of limitations, leaving the uncertainty in place for all time.[85]

The uncertainty created by the MBTA and the lack of standards in the assessment of avian and bat impacts are problems that require redress if the United States is going to rely on wind energy to meet renewable energy goals. While efforts are underway to perhaps partly resolve the impact assessment problems, the MBTA, ESA, BGEPA, and NEPA still can present problems to a project as to how to resolve its impacts even when known. The MBTA's lack of a compliance mechanism further exacerbates these problems. At the core of these problems, is a fundamental shortcoming in the current energy policy: while EPAct 2005 promotes renewable energy and thus ostensibly raises its value, older laws, with now outdated value systems, have been left as barriers to renewable energy.

V. THE POLICY VALUE GAME: HOW MUCH ENERGY IS A BIRD WORTH?

Allowing effective development of the wind energy resources of the United States will require revising or supplementing now antiquated environmental laws that were not revised to reflect current energy policy. EPAct 2005 promotes renewable energy development as sound policy for the United States in the 21st Century. The question remains, however, whether that policy has been fully implemented at all the required levels and in all the needed locations.

---

84. As explained above, MBTA compliance for probably all wind energy projects is accomplished through selective enforcement, or more accurately, by the USFWS not enforcing MBTA.

85. *See, e.g.*, Endangered Species Act of 1973, 16 U.S.C. § 1531 (for example, private right of action for violations).

A. Policy Questions

As the United States shifts its energy policy towards renewable energy, reliance upon the vast wind resources of the country is weakened by lack of supporting environmental protection policy. It will not suffice to merely declare renewable energy as being valued and provide incentives for wind energy. The wind energy industry would argue that the United States must also clear the barriers it has presented to energy infrastructure development in the past where those barriers are out of balance with the harm protected against. The wind energy industry would emphasize that a bird killed for a megawatt-hour of renewable, non-foreign wind energy is much more acceptable than a bird killed for a unit of foreign-purchased[86] or non-renewable energy. EPAct 2005 certainly expresses a policy that values new, renewable energy more than fossil-fueled energy.

Detractors to those arguments would hold that renewable energy is only better to the extent that it is compared on an equal playing field. They would argue that a bird is a bird, and a megawatt-hour a megawatt-hour, regardless of whether the energy fit a convenient, popular definition of being "renewable." They would argue that all environmental values should stand for themselves and treat all others, including various sources of energy, equally.

In essence then, the policy question is one of how much energy a bird is worth, and whether it is worth more renewable energy than non-renewable energy. Certainly, all species are not equal in the eyes of environmental law. But the ESA and BGEPA, two laws that treat threatened birds differently than other birds, both have compliance mechanisms. It is the archaic, ancient MBTA that lacks compliance tools. It is the same MBTA that is being resolved by not being enforced. It is the same MBTA that protects a very broad scope of birds. Thus, the true policy problem facing the wind industry is one of a new value clashing with an old value. The MBTA is increasingly coming into focus as a problem for the wind energy industry. It was not a particular problem for other types of electricity generation and thus has not historically stood in the way of energy infrastructure development.

Resolution to this conflict is perhaps stymied by the failure of an important ally to renewable energy, the environmental protection collective, to consider softening any environmental law. The fear is, of course, that allowing any modification might open the floodgates and allow tremendous trimming of environmental protection that would reach beyond renewable energy. Consider the common lobbying on each side of the ESA. Farmers and industry press for changes to the ESA while non-governmental environmental protection organizations maintain a staunch fight against such relaxation. Wind energy thus is hurt by the very relationship it has relied upon to advance in United States energy policy. Organizations that historically fight development of energy

86. The foreign versus non-foreign comparison, though frequently made regarding renewable electricity, is not as sound as when comparing renewable transportation fuels with foreign oil. While significant quantities of transportation fuel come from foreign sources, electricity mainly comes from domestic sources of coal, water, nuclear fuel, and from mostly continental sources of natural gas. It is still legitimate to promote renewable electricity as being non-foreign because it is non-foreign and because it could reduce demands on natural gas and coal, allowing those fuels to increasingly provide thermal heating and, in some cases, transportation fuel.

industry facilities need to understand how they can help and how they can hurt the development of wind energy. To the extent that they too still hold onto older policy values with regard to avian impacts, environmental organizations also need to refresh their policy think.

B. Call for Action

Congress, in advancing an incomplete policy, has to bear the primary responsibility to correct the problem. Logically, Congress should either withdraw its support of renewable energy values or complete its promotion and clear the left over environmental policy of the MBTA. There are several specific actions mostly involving Congress or the USFWS that would significantly reduce the undue hurdles the wind industry must currently clear.

1. Statutory Redefinition of MBTA Take

The simplest and quickest single action Congress could take would be to redefine illegal take under the MBTA to be a killing resulting from an act intended to kill the bird, such as shooting a gun.[87] This would relieve not only wind turbine operators, but also building owners, vehicle drivers, and even household cats, all of whom kill migratory birds on a regular basis.[88] The earlier explained take definition in the MBTA[89] could be changed by the insertion of the phrase "excepting therein incidental harm or death to birds occurring from birds striking structures, including rotating or stationary wind energy turbine blades, reasonably designed to minimize such collisions" as shown below:

> [I]t shall be unlawful at any time, by any means or in any manner, excepting therein incidental harm or death to birds occurring from birds striking structures, including rotating or stationary wind energy turbine blades reasonably designed to minimize such collisions, to pursue, hunt, take, capture, kill . . . any migratory bird . . . .

2. Statutory MBTA Take Permit

An alternative solution involving the MBTA would be for Congress to statutorily authorize a take permit under the MBTA for wind energy facilities. Given the broad willingness of the USFWS to let the MBTA go un-enforced in the face of rapidly rising wind energy development, the USFWS should prove more than willing to support such a take permit for wind energy needs. Creation of a take permit under the MBTA may not require Congressional action. Section 704 of the MBTA authorizes the Secretary of the Interior to allow "taking" of migratory birds.[90] By Congress establishing a statutory take permit, however, there would be no ambiguity about it legitimacy. Congress can probably accomplish this much faster than the regulatory process can be completed.

---

87. Recall the discussion above, regarding the question of whether the blade kills the bird or the bird kills itself by striking the blade.

88. Buildings, cars, and domestic cats are commonly believed to be the greatest killers of birds migratory and non-migratory alike.

89. 16 U.S.C. § 703 (2000).

90. *Id.* at § 704 provides: **"[**T]he Secretary of the Interior is authorized and directed, from time to time . . . to determine when, to what extent, if at all, and by what means . . . to allow hunting, *taking*, capture, killing . . . of any such bird . . . and to adopt suitable regulations permitting and governing the same . . . ." (emphasis added).

3. Development of Avian and Bat Impact Assessment Standards

Consistent standards for the assessment of the probable or actual avian impacts of a wind energy project are needed. Because federal law (the MBTA, ESA, BGEPA, and NEPA) create avian impact issues for all wind energy projects, a federal standard that reaches across all of those laws is necessary for it to have value. This logically suggests that the USFWS should accomplish this, or be involved since it enforces, or is key in the application of all of those laws.

The standards need to provide a clear and specific minimum methodology necessary for satisfactorily estimating avian impacts from wind energy. Congress could greatly aid the creation of an avian impact assessment standard by ordering the USFWS to develop a single standard, set of guidelines, or a safe harbor that covers the MBTA, the ESA, the BGEPA, and the USFWS's role in implementation of the NEPA.

A safe harbor or assessment standard should include design and location criteria, acceptable avian impact assessment methodologies, and an impact threshold standard below which a wind project would be deemed compliant with the MBTA. It would need to address the question of the duration and frequency needed for pre-operation studies and present that in the context of varying site conditions.

Alternatively, consultation with the USFWS for ESA, and possibly BGEPA, issues could be deemed a safe harbor for the MBTA. Lacking Congressional mandates, or perhaps in concert with them, cooperative efforts including those of the NWCC should also focus on production of a clear assessment standard. Because the USFWS participates in the NWCC, the effect of such standards would go towards reducing the threat and uncertainty created under the current regime. It would also aid in the quest to standardize assessment methodologies across the states. It would not be as valuable, however, as a USFWS enacted assessment standard for the federal wildlife and environmental laws.

VI. CONCLUSION

The success and growth of wind energy in the United States is leading it into conflict with laws and values in several disciplines. Recent cases show that organized opposition groups have formed and, for various reasons, are fighting against wind energy projects. Besides aesthetic values, a chief issue is avian impacts. Even without successful opposition, the ancient MBTA leaves nearly every wind energy project in a world of uncertainty that could threaten to further challenge the wind energy industry. With the passage of EPAct 2005, the United States has further declared its promotion of the value of renewable energy. That would suggest that it is time to clear the land of laws and regulations founded on old, out-of-date policy that conflict with renewable energy. Congress should act to provide an MBTA exemption for properly designed and permitted wind energy projects. Further, the federal government should help establish clear standards for the assessment of avian impacts that states can or will want to adopt as well. That, coupled with environmental laws reflecting renewable energy values, should allow the wind industry to better move towards utilizing the vast resource of wind energy in the United States.