

WIND POWER: GENERATING ELECTRICITY AND LAWSUITS

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Synopsis: Whether imagined or real, fears over the declining reserves of traditional hydrocarbon fuels and worsening emission-induced global warming have increased both the economic and social costs associated with the world's traditional fuel supplies to the point where alternative energy, including wind energy, is becoming increasingly attractive. The apparent benefits of wind energy, including the fact that it is clean, renewable, and socially acceptable, have spurred political endorsement and subsidy, just as advancing technology has increased cost competitiveness. These combined trends are freeing up capital and opening up markets for significant increases in wind power generation.

The relatively explosive growth of wind energy is, however, increasingly facing opposition in the courts, legislatures, and controlling state and federal agencies, thereby tempering political and investor enthusiasm. As wind developments continue to consume real estate, much of which lies in close proximity to communities or pristine lands, opposition is certain to increase. Thus far, however, favorable factors are propelling wind energy developments forward despite the opposition.³

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3. The authors would also like to acknowledge Reginald Snyder, whose efforts contributed to this article.

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I. INTRODUCTION

Public pressure to lessen dependence on foreign oil has long motivated business and political leaders to promote diversity in sources of supply for traditional fossil fuels such as oil and natural gas,⁴ and has also spurred research into alternative energy technologies, such as the increased use of coal in Integrated Gasification Combined Cycle (IGCC) generation plants. In recent years, these existing policy pressures have been intensified by the public's awareness of how man-made carbon emissions are contributing to global warming and how global warming has the potential to fundamentally alter life on the planet. Largely as a result of this increasingly accepted view of global warming's cause and effect⁵ and the resulting public outcry, politicians in Washington and various state capitals are moving to facilitate the expansion of renewable fuels, including wind energy. Similarly, business investors are directing greater amounts of capital into wind energy as turbine efficiency, regulatory permitting, cost of capital, and resulting rate of return improve. Additionally, energy producers have discovered an extra benefit in the improved public relations and publicity which come from providing green energy.

For these and other reasons, wind energy is the fastest growing source of electricity worldwide. According to the American Wind Energy Association

4. Many political leaders are preoccupied with the highly publicized peak of oil production. According to many industry observers, worldwide peak production "will occur when we've used half the oil nature made for us When the peak occurs, increasing demand will meet decreasing supply, possibly with disastrous results." DAVID GOODSTEIN, *OUT OF GAS* 17 (W.W. Norton & Company Ltd. 2004). The belief that peak oil is imminent is not, however, universal. To the contrary, many industry members and policy analysts believe that the world has enormous untapped reserves of traditional and untraditional energy supplies. See, e.g., PETER HUBER & MARK MILLS, *THE BOTTOMLESS WELL: THE TWILIGHT OF FUEL, THE VIRTUE OF WASTE AND WHY WE WILL NEVER RUN OUT OF ENERGY* (Basic Books 2005) (arguing that the energy supply is infinite); Bhushan Bahree & Jeffrey Ball, *Producers Move to Debunk Gloomy 'Peak Oil' Forecast*, WALL ST. J., Sept. 14, 2006, at A2 (quoting leading industry representatives advancing claim that the world still has ample oil reserves).

5. Not everyone concurs with this theory. See, e.g., S. FRED SINGER & DENNIS T. AVERY, *UNSTOPPABLE GLOBAL WARMING 1* (Rowman & Littlefield Publishers, Inc. 2007) (suggesting that present global warming is a natural cycle not caused by carbon dioxide emissions).

(AWEA), wind generating capacity increased by 27% in 2006, with similar increases expected in 2007.⁶ In the United States, more than 11,600 megawatts of wind generating capacity are already installed, which is roughly enough to power 2.9 million homes. Put another way, it would take approximately forty million barrels of oil per year to generate the same volume of electricity. This impressive growth has been made possible by consumers' willingness to pay slightly higher energy rates for green energy, state and federal subsidies in the form of tax credits and otherwise, and technological advances that have enhanced the design of wind turbines, thereby making wind-generated electricity increasingly cost competitive with electricity generated from fossil fuels.

There is also a sense of excitement over claims of the immense potential of wind energy. For example, the University of Houston has estimated that Texas alone has the capacity to generate more than ten gigawatts (GW) of offshore wind energy,⁷ and the European Wind Energy Association (EWEA) projects that by the year 2020 wind-generated electricity will be sold at a rate of 2¢ per kilowatt hour (kWh), making it potentially cheaper than all other sources of electricity by that date.⁸

What's not to love? Abundant energy from a renewable source which does not contribute to global warming, does not smell or pollute our air and water, does not consume food products (as does corn based ethanol), and has the potential to become even more cost competitive as technology improves! The reality is that there are many who have condemned wind energy on environmental, aesthetic, economic, and other public policy grounds. While most citizens and politicians alike agree that there are benefits to using renewable energy and thereby delaying the exhaustion of traditional energy supplies and reducing harmful emissions, there are economic and social costs. Some argue that the costs to the government in lost revenue due to tax credits outweigh any social benefit, and also outweigh potential royalty revenue associated with projected wind farms on state or federal lands. Others argue that the costs of building additional transmission lines needed to reach the remote areas where many wind projects are being built or planned takes resources from more cost-effective projects which could more easily address our energy needs. Finally, some individuals and communities have simply stated that they do not want wind farms near their communities. This "not in my backyard" (NIMBY) syndrome has produced inconsistencies in public policy, with citizens demanding action to mitigate global warming while at the same time petitioning against wind turbines cluttering their horizon.

6. Press Release, Am. Wind Energy Assoc., Wind Power Capacity in U.S. Increased 27% in 2006 and is Expected to Grow an Additional 26% in 2007 (Jan. 23, 2007), http://www.awea.org/newsroom/releases/Wind_Power_Capacity_012307.html.

7. Press Release, N.M. State Univ., Texas is Finalist for Wind Turbine Research Facility: 80 Billion Dollar International Market for Turbines at Stake (Mar. 12, 2007), http://enr.nmsu.edu/news_items/news_pdfs/news_07_03_13_capecod_turbine.pdf.

8. "When the wind industry began in California in the early 1980s, wind-generated electricity cost 38¢ per kilowatt-hour. Since then it has dropped to 4¢ or below at prime wind sites. And some U.S. long-term supply contracts have been signed for 3¢ per kilowatt-hour. Wind farms at prime sites may be generating electricity at 2¢ per kilowatt-hour by 2010, making it one of the world's cheapest sources of electricity."

LESTER R. BROWN, PLAN B 2.0: RESCUING A PLANET UNDER DISTRESS AND A CIVILIZATION IN TROUBLE 189 (W.W. Norton & Co. 2006).

This article discusses trends in wind-related litigation and legal issues impacting wind energy companies in the United States. First, it discusses and analyzes various legal challenges to land-based wind projects, including allegations of aesthetic and environmental impact, government-mandated moratoriums on wind energy development, patent infringement, breach of contract, and products liability. Next, the article discusses and analyzes the embryonic, yet promising offshore wind industry, including a detailed examination of four currently proposed offshore wind farms and lawsuits that have been filed in connection with one of the four projects (i.e., the Cape Wind Project). Finally, the article considers future legal issues that wind energy developers may face with respect to both land and offshore wind projects including, for example, the potential impact on wind energy development if the federal Production Tax Credit (PTC) is allowed to expire on December 31, 2008, and the long-term environmental impact on the earth's climate of land-based and offshore wind turbines.

II. WIND ENERGY MATURES IN THE U.S.

Although wind energy currently constitutes less than one percent of the energy supply in the United States, it is the fastest growing source of renewable power in the nation.⁹ The first U.S. wind farms appeared in California in the 1980s.¹⁰ Over the past five years, large scale, land-based wind farms have been built in Texas, California, Kansas, Wyoming, and other states, with Texas recently becoming the largest wind energy producer in the nation with an installed wind generating capacity of 2,768 megawatts (MW).¹¹ In West Texas alone, there are approximately 2,000 wind turbines, and the numbers continue to increase as development costs drop and wind turbine technology continues to improve.¹²

The structures are imposing, and thus engender opposition from nearby residents and environmentalists. In order to capture stronger and more reliable wind, the larger modern wind turbines are placed on towers anywhere from 130 feet to more than 400 feet in height from the base of the tower to the tip of the propeller blades.¹³ Some wind farms include hundreds of these towers spread over thousands of acres. Several environmental groups have filed lawsuits throughout the country criticizing the aesthetic and environmental impact of wind turbines. In addition to lawsuits based on these concerns, wind-related

9. Associated Press, *Rising Oil Prices Boost Renewable Energy*, Oct. 21, 2004, available at <http://msnbc.msn.com/id/6271966/>. On a world-wide basis, the wind market is doubling in size every two and a half years and could supply as much as 12 percent of global power needs by 2020. PAUL ROBERTS, *THE END OF OIL: ON THE EDGE OF A PERILOUS NEW WORLD* 196 (Houghton Mifflin Books 2004).

10. LOUISE GUEY-LEE, ENERGY INFO. ADMIN., *WIND ENERGY DEVELOPMENTS: INCENTIVES IN SELECTED COUNTRIES* (2002), http://www.eia.doe.gov/cneaf/solar.renewables/rea_issues/windart.html.

11. STATE ENERGY CONSERVATION OFFICE, TEXAS WIND ENERGY, http://www.seco.cpa.state.tx.us/re_wind.htm (last visited Apr. 19, 2007).

12. *Id.*

13. IOWA ENERGY CTR., *ALTERNATE ENERGY REVOLVING LOAN PROGRAM (AERLP), HOW TALL ARE WIND TURBINES?*, http://www.energy.iastate.edu/renewable/wind/How_Tall.html (last visited Aug. 23, 2007).

litigation has also arisen concerning other legal issues, including a variety of regulatory and permitting issues.¹⁴

Furthermore, the recent United States Supreme Court decision in *Massachusetts v. Environmental Protection Agency* will only spur further development of wind farms.¹⁵ In that case, the Court held that the Environmental Protection Agency has the authority to regulate tail pipe emissions from automobiles.¹⁶ Many expect that the decision will now accelerate pending litigation in lower courts, where the plaintiffs are trying to compel regulation of power plant greenhouse gas emissions.¹⁷ As regulations increasingly limit greenhouse gas emissions, logically, one can expect increased use of wind power.

III. EARLY LAND-BASED LITIGATION

The early wind energy projects have been land-based, and therefore not surprisingly, the majority of legal disputes have involved land operations and developments. As the number of operational wind projects continues to grow and new projects accelerate, opportunities for disagreement increase.

The costs associated with wind turbines have increased, which may motivate power generators to actively defend against environmental and nuisance suits. The average cost of constructing land-based wind turbines has risen 50% over the past three years, and currently ranges between \$1.3 and \$1.7 million per megawatt (MW).¹⁸ Not surprisingly, these sorts of large, expensive, and lengthy construction projects, as well as the operation of the wind farms once completed, occasionally give rise to legal issues and disputes.

A. Aesthetic and Environmental Impact

Aesthetic and environmental concerns have been some of the most commonly litigated issues stemming from the construction and operation of wind projects. This trend is likely to continue as developers look for additional acreage to lease and are increasingly forced to consider locations close to existing transmission lines that are necessary to wheel wind-generated electricity to the grid. Unfortunately, many of the preferred sites are located near population centers, roadways, recreational parks and beaches, or in other areas frequented by people. As a result, developers are increasingly experiencing NIMBY opposition¹⁹ in the courts and before various local, state, and federal bodies.

14. See Darrell Blakeway & Carol Brotman White, *Tapping the Power of Wind: FERC Initiatives to Facilitate Transmission of Wind Power*, 26 ENERGY L.J. 393 (2005) (discussing regulatory landscape related to transmission of wind-generated electricity).

15. *Massachusetts v. EPA*, 127 S. Ct. 1438 (2007).

16. *Id.* at 1459.

17. Linda Greenhouse, *Justices Say E.P.A. Has Power to Act on Harmful Gases*, N.Y. TIMES, Apr. 3, 2007, at A1.

18. L. FINGERSH, ET AL., NAT'L RENEWABLE ENERGY LAB., WIND TURBINE DESIGN COST AND SCALING MODEL (2006), <http://www.nrel.gov/docs/fy07osti/40566.pdf>.

19. "The 'renewable' energy sources have been politically useful as imagined alternatives to the power plants we could see and deplore. As we actually try to build the wind farms and big solar arrays, the very people who demanded them shift into opposition – because there never seems to be a 'right place' for them."

In Washington, Horizon Wind Energy, LLC is planning to build a sixty-five-turbine wind farm, about twelve miles northwest of Ellensburg.²⁰ The project has run into opposition from nearby landowners who contend that the wind project “will have negative environmental and visual impacts.”²¹ Five years into the permitting process, the state’s Energy Facility Site Evaluation Council recommended (for a second time) that the governor approve the project over the objection of local citizens and officials.²² The opposition to the project has focused on the distance that should be required between turbines and property of individuals who have decided not to participate in the project.²³ The council’s recommendation, however, does not fully resolve how close turbines may be set in relation to land owned by non-participants in the project. Instead, council has recommended as follows:

For each turbine located within 2,500 feet of a non-participating landowner’s existing residence, micro-siting determinations shall give highest priority to increasing the distance of the turbine from that non-participating landowner’s residence, even beyond the minimum four times height setback described above, so as to further mitigate and minimize any visual impacts on that non-participating landowner. Prior to commencement of construction, the Applicant shall provide EFSEC with documentation demonstrating its engineering efforts to site the applicable turbine locations in this manner, indicating the various factors reviewed for each micro-siting recommendation.²⁴

The governor has sixty days to approve, reject, or revise the proposal.²⁵ Even if the governor approves the proposal, opponents can appeal the decision to the state’s supreme court.²⁶

Kansas, similarly, has been the site of resistance to new wind projects. In *Flint Hills Tallgrass Prairie Heritage Foundation v. Scottish Power, PLC*, a non-profit environmental group filed a class action lawsuit against various electrical power companies and wind-energy producers in Kansas federal district court, attempting to block construction of a proposed wind farm because of its potential environmental impact.²⁷ Flint Hills claimed that the defendants’ industrial wind turbines would cause permanent and irreparable damage to the region’s environmental systems. Presumably to minimize economic incentive to build the wind farm, Flint Hills also sought a judgment that federal tax incentives and subsidies provided to wind developers are unconstitutional. The

S. FRED SINGER & DENNIS T. AVERY, UNSTOPPABLE GLOBAL WARMING 215 (Rowman & Littlefield Publishers, Inc. 2007).

20. Associated Press, *Washington State Agency Approves Wind Farm for 2nd Time*, EXAMINER, Aug. 9, 2007, available at, http://www.examiner.com/a-871864~Washington_state_agency_approves_wind_farm_for_2nd_time.html [hereinafter AP Article].

21. *Id.*

22. AP Article, *supra* note 20.

23. *Id.*

24. Order No. 831, *In re Sagebrush Power Partners*, Application No. 2003-1 (Wash. Energy Facility Site Evaluation Council 2007), <http://www.efsec.wa.gov/kittitaswind.shtml>.

25. AP Article, *supra* note 20.

26. Editorial, *A Compromise on Wind-Farm Project*, SEATTLE TIMES, Aug. 13, 2007, at B6.

27. *Flint Hills Tallgrass Prairie Heritage Found. v. Scottish Power, PLC*, No. 05-1025-JTM, 2005 WL 427503, *8 (D. Kan. Feb. 22, 2005), *aff’d* 147 Fed. App’x. 785 (10th Cir. 2005) (holding that Plaintiffs failed to state a cause of action under federal law because they could not establish that the Migratory Birds Treaty Act established a private right of action).

district court granted the defendants' 12(b)(6) motion to dismiss and accordingly dismissed Flint Hills' complaint with prejudice, which was affirmed by the U. S. Court of Appeals for the Tenth Circuit.

A similar case litigated in California state court, *Kerncrest Audubon Society v. Los Angeles Department of Wind & Power*, dealt with the potential environmental impact of the proposed Pine Tree Wind Project (PTWP) on migratory bird patterns.²⁸ Two Audubon societies filed suit against the City of Los Angeles Department of Water and Power (LADWP). The PTWP, which is being developed by Wind Turbine Prometheus, LLC, will use eighty of GE Energy's 1.5 MW wind turbines installed on approximately 8,000 acres of land located 12 miles north of Mojave, California. On April 15, 2005, the LADWP's Board of Commissioners approved the results of an Environmental Impact Report (EIR) concerning the PTWP over strong objections from the Audubon societies. The Audubon societies claimed the EIR failed to fulfill the minimum disclosure obligations required by the California Environmental Quality Act (CEQA). Their primary objection was the lack of definitive studies concerning the project's potential threat to specific kinds of birds, especially migratory songbirds, protected by the Migratory Bird Treaty Act.²⁹

In *Center for Biological Diversity, Inc. v. FPL Group, Inc.*, another environmental impact case filed in California federal district court, the Center for Biological Diversity, Inc. (CBD) filed a lawsuit against several electric utility companies. The suit claimed numerous federally-protected birds were being killed in the Altamont Pass Wind Resource Area (APWRA) after colliding with wind turbines owned and operated by the defendants.³⁰ CBD also alleged the defendants violated California's false advertising laws and the federal Lanham Act by making untrue or misleading statements when they publicly asserted that they were in compliance with all federal and state environmental laws. CBD sought injunctive relief, restitution, penalties, forfeiture of the defendants' wind turbines, disgorgement of profits, and attorneys' fees.³¹ In late September 2005, the Alameda County Board of Supervisors (Board) approved the defendants' wind power permits, thus allowing them to continue producing electricity at their 584 MW Altamont Pass wind farm. The Board, however, renewed the permits with the stipulation that the defendants and other wind developers in the area must replace more than 5,000 of their older wind turbines over the next thirteen years with five hundred newer, more efficient turbines featuring higher propeller blades that spin above the birds' flight paths to reduce the number of bird strikes

28. *Kerncrest Audubon Soc'y v. Los Angeles Dep't of Wind and Power*, No. S-1500-CV-255604, 2007 WL 2208806 (Cal. Ct. App. Aug. 2, 2007).

29. *Id.*

30. Plaintiff's Complaint, *Center for Biological Diversity, Inc. v. FPL Group, Inc.*, No. C-04-0312-CW (N.D. Cal. Jan. 12, 2004). The Center for Biological Diversity (CBD) contends wind farms can be constructed in a manner that does not endanger birds. For example, it claims the California Energy Commission (CEC) has concluded that re-powering projects (i.e., replacing numerous outdated turbines with fewer turbines on taller towers, so that the blades are above most raptor flight patterns) is the best option for reducing bird kills at APWRA. According to CBD, raptor experts with the CEC in an August 2004 report recommended re-powering the APWRA and proposed that wind power companies implement a suite of mitigation measures to reduce bird kills at existing turbines as well as preserve off-site nesting habitat for raptors to compensate for ongoing unacceptable bird losses. *Id.*

31. Plaintiff's Complaint, *supra* note 30.

and deaths. The wind developers also must prepare an Environmental Impact Report (EIR) within three years regarding the progress of their efforts.³²

This last decision might be rather prophetic. Specifically, the Californian Altamont Pass wind farm was state of the art when first established during the 1980s. It used a variety of cutting edge technology. Currently, however, the technology is obsolete and inefficient, and according to some, very unattractive. Similarly, the rapid expansion being experienced today is using modern technology where turbines can generate 1.5 to 3.6 megawatts compared to 100 kilowatts or less as seen in the Altamont Pass wind farm.³³ These developments are generally applauded now, but what about in ten years? In fifteen years? Also, it is reasonable to expect that new technology will be more wildlife friendly. At some point, wind developers will increasingly face stronger pressure to replace obsolescent and aesthetically unattractive turbines with newer, more efficient and nature-friendly designs, even if the existing turbines, by now fully paid for, continue to be profitable.

B. Moratorium on Wind Energy Development

Some local governments have passed laws precluding the construction of wind turbines in a particular area. These moratoriums vary in length, and some have been renewed several times. Constitutional challenges to these moratoriums have proved unsuccessful to date. For example, one New York federal district court case involved a dispute over a city government-initiated moratorium on wind farm development by Ecogen, LLC (Ecogen), a wind energy developer in New York.³⁴ In preparation for the wind farm projects, Ecogen obtained property rights and easements to several properties in two towns.³⁵ While the town of Prattsburgh welcomed Ecogen's wind farm project, the town of Italy opposed it, arguing a wind farm would detrimentally impact the town's scenic and aesthetic beauty.³⁶ Italy, accordingly, passed a six-month moratorium on construction of the wind farm, and then renewed this moratorium several times.³⁷ Ecogen filed suit against Italy, seeking to have this moratorium dissolved.³⁸ In its lawsuit, Ecogen challenged the constitutionality of the town's moratorium.³⁹ Ecogen alleged, among other things, that the moratorium deprived it of due process of law, in violation of the Fourteenth Amendment to the United States Constitution, by effectively denying Ecogen "the use of property based on an illegal, irrational and unconstitutional motivation."⁴⁰

To prevail on its substantive due process claim, Ecogen had to establish that the Board's moratorium, insofar as it prohibited Ecogen's construction of a

32. *Id.*

33. GENERAL ELECTRIC ENERGY. 3.6 MW OFFSHORE SERIES WIND TURBINE, http://www.gepower.com/prod_serv/products/wind_turbines/en/downloads/ge_36_brochure_new.pdf (last visited Sept. 1, 2007).

34. *Ecogen, LLC v. Town of Italy*, 438 F. Supp. 2d 149 (W.D.N.Y. 2006). Ecogen planned to construct approximately 30 wind turbines in Prattsburgh, and another 23 in the town of Italy. *Id.* at 152.

35. *Ecogen*, 438 F. Supp. 2d at 152.

36. *Id.* at 152-53.

37. *Ecogen*, 438 F. Supp. 2d at 153.

38. *Id.* at 154.

39. *Ecogen, LLC v. Town of Italy*, 438 F. Supp. 2d 149, 154 (W.D.N.Y. 2006).

40. *Id.*

substation in the town of Italy, bears no rational relationship to any legitimate governmental purpose. Upholding the constitutionality of the moratorium, the court determined that Ecogen did not dispute that the Board has an interest in preserving the town's aesthetic beauty, and consequently, determined it was unable to say that the Board's moratorium was not rationally related to that interest, so Ecogen's substantive due process rights were violated.⁴¹

The court's rationale and holding in *Ecogen* appear to support the constitutionality of government-mandated moratoriums precluding the construction of wind energy projects, so long as the moratorium bears a rational relationship to a legitimate governmental purpose. In *Ecogen*, the court found that a city government's interest in preserving the aesthetic beauty of its land is rationally related to a legitimate governmental purpose.⁴²

C. Intellectual Property

Protection of commercial rights to technological innovation has always been critical to promoting the capital investment necessary to fund research and development. Having the ability to protect one's own ideas and discoveries, thereby safeguarding the ability to financially benefit from those innovations, is also key to expediting commercialization of new technologies by protecting the innovator when licensing his innovation. By increasing the size and number of markets in which innovators can safely compete, investors can, if they are competitive, increase revenue and profits, thereby in turn funding more capital into new research and development to improve their technologies even further.

The United States has long been the largest market for technology in the world. Its intellectual property laws have allowed researchers and investors alike to work under a certain degree of predictability and certainty. This predictability has created a business environment in which technological development has excelled. With respect to wind energy technology, however, the United States has lagged largely because until relatively recently there has been little demand, compared to other parts of the world. This is starting to change as domestic demand for wind energy increases. While domestic demand is growing, U.S. companies still need to secure foreign demand for their products and technology not only to expand their market and profits, but also to hedge against reduced domestic demand in the future, e.g., in the event Production Tax Credits are not renewed.

The U.S. Commerce Department recognizes the need to effectively open foreign markets to domestic companies developing and marketing clean energy.⁴³ In April 2007, a Commerce Department trade mission, accompanied by more than a dozen U.S. companies, engaged in discussions with representatives of two of the fastest growing economies in the world, India and

41. *Ecogen*, 438 F. Supp. 2d at 159. "Courts will not strike down a law as irrational simply because it may not succeed in bringing about the result it seeks to accomplish, because the problem could have been better addressed in some other way, or because the statute's classifications lack razor-sharp precision. *Id.* at 159 (citing *Beatie v. City of N.Y.*, 123 F.3d 707, 712 (2d Cir. 1997)).

42. *Ecogen*, 438 F. Supp. 2d at 159.

43. Jane Spencer, *Clean-Energy Firms Make Pitch at Asia: U.S. Trade Mission Aims to Capitalize on Growing Commitment in China, India*, WALL ST. J., Apr. 18, 2007, at A9 [hereinafter Spencer].

China.⁴⁴ One of the primary goals of the trade mission was to ease entry into these two markets by addressing concerns over intellectual property rights.⁴⁵ Specifically, U.S. companies are understandably hesitant to export their latest technologies into these economies for fear of having them copied.⁴⁶ This increasingly heated issue prompted the United States to file a complaint with the World Trade Organization over China's alleged lack of copyright enforcement.⁴⁷

U.S. companies simply cannot afford to stay out of the Chinese and Indian markets. China pledged to invest \$200 billion in renewable energy and to consume 15% of its power from renewable sources by the year 2020, and India reportedly spends \$500 million annually on renewable energy, with this figure growing at 15% per year.⁴⁸ Such enormous spending and growth is sure to attract U.S. companies. Accordingly, regardless of the state of legal protection within these markets, U.S. companies will almost certainly face significant legal challenges in their efforts to protect their intellectual property while simultaneously increasing their exports.

Of course, even though the legal protections afforded to U.S. companies within this country are much more advanced and reliable, the pace of technological development has also spurred litigation domestically. An example of wind-related patent litigation is *Gamesa Eolica, S.A. v. General Electric Company d/b/a G E Wind Energy*, a lawsuit involving the patent on a speed wind turbine that converts variable frequency alternating current electricity (AC) to fixed frequency AC and maneuvers turbine speed to increase efficiency.⁴⁹ The Wisconsin federal district court in which this case was filed ultimately granted summary judgment in favor of General Electric. Such issues relating to the conversion of power and its compatibility with electric utility grids will likely continue to be a source of future litigation.

In yet another example, in a patent infringement case filed in federal court by Kenetech Windpower, Inc. against Enercon GmbH and New World Power Corporation (NWP), Kenetech alleged that Enercon and NWP planned to import into the United States certain variable speed wind turbines that infringed a Kenetech U.S. patent.⁵⁰ The Kenetech patent involved a method for controlling the AC power output from a wind turbine. The U.S. Court of Appeals for the Federal Circuit ultimately determined that Enercon had infringed upon Kenetech's patent and issued an order excluding Enercon's variable speed wind turbines from entry into the United States until the patent expired.⁵¹

Wind turbine and related technology is advancing at an impressive rate, funded by enormous research and development budgets made possible by increased revenue and profits. As U.S. companies aggressively compete to

44. *Id.*

45. Spencer, *supra* note 43.

46. *Id.*

47. Spencer, *supra* note 43.

48. *Id.*

49. *Gamesa Eolica, S.A., v. General Elec. Co.*, 359 F. Supp. 2d 790, 792 (W.D. Wis. 2005).

50. *Enercon GmbH v. Int'l Trade Comm'n*, 151 F.3d 1376 (Fed. Cir. 1998), *cert. denied*, 526 U.S. 1130 (1999). *See also* 19 U.S.C. § 1337 (1994).

51. *Enercon GmbH*, 151 F.3d at 1385.

increase their technological competitiveness, legal battles over intellectual property rights are certain to increase.

D. Contractual Disputes

Of course, any endeavor involving large amounts of capital and contractual relationships is subject to legal disputes concerning a wide range of contractual construction and enforcement issues. Seemingly, the wind energy industry has been, relatively speaking, unencumbered by costly and exhausting contractual litigation. There could be many reasons for this, but one possibility stands out. The wind energy industry is not only comparatively young, but is also going through a period of tremendous growth and prosperity. When projects and money are abundant, friends are easy to come by, and one is reluctant to make enemies. What happens, however, if and when the projects start to dry up, capital becomes scarce, and operational expense increases relative to revenue?

Some possible guidance is provided by the history of the oil and gas industry.⁵² Similar to other industries, as the price of their product, oil and gas, increases, the various industry members enter an era of the deal. As prices begin to fall, reserves deplete and infrastructure ages; however, litigation increases. Take, for example, the rise in take-or-pay litigation during historic periods of price fluctuations caused by erratic supply and demand, or similar disputes over requirement contracts between suppliers and retailers. Also, consider disputes between operators and working interest owners of oil and gas producing properties. Working interest owners frequently found themselves in disputes involving production allocation, operating expenses or, as infrastructure aged, the costs of plugging and abandoning wells and structures. Finally, as with the oil and gas producers, wind energy producers are likely to face future disputes over royalty payments, failure to diligently produce, or alleged remedial deficiencies.

While wind energy companies have thus far been spared the degree of contractual litigation that some other industries face, their relief is relative and not complete. Take for instance the continued struggle to secure an adequate supply of wind turbines well in advance of final project design and approval. Insufficient wind turbine production and supply is an often-stated reason for project deferral. Wind energy developers routinely order wind turbines well in advance of final project approval. Admittedly, this is a somewhat risky procedure requiring the wind energy developer to commit substantial capital to equipment before it is even certain that there is a project to absorb the capital investment. This is necessary, however, in order to minimize construction delays once the project has been fully approved. The high demand for existing wind turbine production, coupled with the developer's critical need for timely supply, is certain to generate litigation. Consider, for instance, *NEG Micon USA, Inc. v. Northern Alternative Energy*, filed in an Illinois federal district court, in

52. This is particularly applicable to offshore operations. For example, in 1961, the Gulf of Mexico produced 80 million Barrels of Oil Equivalent (BOE) from 415 leases, and with appropriate federal regulation by 2001, the Gulf of Mexico produced 1,450 million BOE from 7,365 leases. Tim Appenzeller, *The End of Cheap Oil*, NAT'L GEOGRAPHIC, Jun. 7, 2004, at 104. During this explosive growth of exploration, drilling, and production, the oil industry had to learn to cope with a wide range of new legal issues as the industry evolved.

which a turbine supplier sued to determine the interpretation and enforceability of an exclusive wind turbine supplier agreement.⁵³ Suits over exclusive supply arrangements can be expected to increase as demand for turbines increase, especially as many wind energy companies must purchase their turbines years in advance in order to secure a steady supply to feed their ongoing projects.

As competition increases and rates become more competitive, litigation can be expected over requirement and rate type agreements. Consider a suit filed by wind developer Energy Development in California state court against the electric utility Southern California Edison Company (SCE), seeking declaratory relief and specific performance for alleged breach of contract.⁵⁴ In 1984 and 1985, SCE entered into contracts with Energy Development to purchase electricity produced by wind turbines owned and operated by Energy Development. Each contract was divided into two periods: the “first period” was ten years in length, and the “second period” covered the remainder of the contract. Because the rate structure changed from period to period, it was not too surprising when a dispute arose regarding the date on which the “first period” began.⁵⁵ The trial court agreed with Energy Development’s interpretation, but the appellate court disagreed, holding that the “first period” language in the contract was ambiguous.⁵⁶ The ambiguity was exacerbated by the fact that the commercial circumstances and market had fundamentally changed since the date of original contract.⁵⁷

Wind developers must also beware of contracting with governmental entities which might strongly favor wind energy during one administration but have less enthusiasm during the next administration. For example, in *City of Akron v. Akron-Westfield Community School District*, the Iowa state courts addressed the enforceability of a wind energy contract between a wind developer and a governmental agency when that agency failed to comply with its own governmental formalities requisite to authorizing a contract.⁵⁸ In this case, Akron-Westfield entered into a contract with the City of Akron, obligating the city to purchase electricity generated by Akron-Westfield’s wind turbine. While Akron city officials were aware of and honored the contract, they failed to formally approve the contract via motion, resolution, amendment, or ordinance, as required by Iowa Code section 364.3(1).⁵⁹

For approximately eighteen months, Akron-Westfield sold electricity produced by its wind turbine to the City of Akron per the terms of the parties’ contract.⁶⁰ However, following the election of a new mayor and a subsequent city audit, the city filed suit against Akron-Westfield, claiming the wind energy agreement was void under section 364.3(1) of the Iowa Code because it was not

53. *NEG Micon USA, Inc. v. Northern Alternative Energy*, No. 03C5851, 2003 WL 22110903 (N.D. Ill. Sept. 11, 2003) (denying Plaintiff’s request to enjoin Defendant from using other suppliers of wind turbines pursuant to the parties’ agreement).

54. *Southern Cal. Edison Co. v. Super. Ct.*, 37 Cal. App. 4th 839, 844 (Cal. Ct. App. 2d 1995).

55. *Id.* at 844.

56. *Southern Cal. Edison Co.*, 37 Cal. App. 4th at 845.

57. *Id.* at 853-54.

58. *City of Akron v. Akron-Westfield Cmty. Sch. Dist.*, 659 N.W.2d 223 (Iowa 2003).

59. *Id.*; See also IOWA CODE § 364.3(1) (2001).

60. *City of Akron*, 659 N.W.2d at 225.

formally approved by the Akron city council.⁶¹ The trial court granted summary judgment in favor of the city, holding that the contract was void because the parties had failed to comply with the required contractual formalities.⁶²

On appeal, the Iowa Supreme Court affirmed, holding that “any contract with a city entered without a formal motion, resolution, amendment or ordinance is void.”⁶³ The court also found that “[a] contract, unlawful for lack of authority, is not rescued by good faith,”⁶⁴ and “[t]hose who negotiate or enter contracts with a municipality are charged with notice of the limits on the municipality’s authority.”⁶⁵ The court therefore concluded that the contract at issue was void.

Wind developers have also encountered litigation seeking to set aside a city government lease of city-owned land to a wind developer for land-based wind development, as in *Friends of the Shawangunks, Inc. v. Edward Jacobs*.⁶⁶ In this New York state case, the Village of Ellenville, New York, granted a lease to Genro Energy Systems, a wind energy developer, to allow Genro to construct wind turbines on land owned by the Village. Friends of the Shawangunks (FS), a non-profit New York State corporation, filed suit seeking to set aside the lease. The trial court concluded that FS lacked standing to challenge the lease. FS appealed, and the appellate court affirmed the trial court’s ruling.⁶⁷

Wind energy is in political and public favor, and is prospering as an industry. Except for the early projects, which were relatively few and experimental in nature, the vast majority of the nation’s wind-generating capacity is modern and well maintained. As time passes, political and public favor mature, and infrastructure ages, contractual suits will increase. The energy pioneers of the oil and gas industry have shown the way.

E. Conditional Permit to Construct a Wind Farm

Wind-related litigation has also been filed regarding a city government’s issuance of a conditional permit allowing a wind developer to construct wind turbines on county property. In *Roberts v. Manitowoc County Board of Adjustment*, wind developer Navitas Energy, Inc. (Navitas) was granted a conditional use permit by the Manitowoc County Board of Adjustment (Board) to build a 49-turbine wind energy park called Twin Creeks Wind Park.⁶⁸ Several local residents sought review of the Board’s decision based on concerns about the project’s impact on their quality of life, health, and safety.⁶⁹ The trial court affirmed the Board’s decision, holding that the Board properly granted the conditional use permit.⁷⁰ On appeal, the appellate court affirmed the Board’s grant of the conditional use permit, finding that the Board was entitled to

61. *Id.*; See also IOWA CODE § 364.3(1) (2001).

62. *City of Akron*, 659 N.W. 2d at 225.

63. *Id.* (citing *Riley v. City of Hartley*, 565 N.W.2d 344, 348 (Iowa 1997)).

64. *City of Akron v. Akron-Westfield Cmty. Sch. Dist.*, 659 N.W.2d 223, 225 (citing *Marco Dev. Corp. v. City of Cedar Falls*, 473 N.W.2d 41, 43 (Iowa 1991)).

65. *Id.* (citing *Miller v. Marshall Co.*, 641 N.W.2d 742, 751 (Iowa 2002)).

66. *Friends of the Shawangunks, Inc. v. Edward Jacobs*, 110 A.D.2d 1002 (N.Y. App. Div. 1985).

67. *Id.* at 1004.

68. *Roberts v. Manitowoc County Bd. of Adjustment*, 721 N.W.2d 499 (Wis. Ct. App. 2006).

69. *Id.*

70. *Roberts*, 721 N.W.2d at 526.

deference in its interpretation and application of Manitowoc's Wind Energy System Ordinance, and that the Board's interpretation of the county ordinance was consistent with the State of Wisconsin's decision to promote renewable energy resources, including wind energy.⁷¹

IV. OFFSHORE WIND-RELATED LITIGATION AND LEGAL ISSUES

Some have argued that the future of wind energy depends on the offshore market. The advantages of harnessing wind power offshore include the strong winds generated over water, the vast space available for such facilities and the ability to distance such facilities from highly populated areas and highly traveled avian routes, thus moving the turbines out of the "backyards" of communities. Until recently, all wind-related litigation in the United States was related to land-based wind projects. This is the case because, unlike Europe, the United States currently does not have any existing offshore operational farms generating electricity, though there are some in the developmental stages.⁷²

A. *Currently Proposed Offshore Wind Developments*

Today, four U.S. offshore wind farms are in various stages of planning: (1) Nantucket, Massachusetts (the Cape Wind Project); (2) Long Island, New York (Long Island Offshore Wind Park Project); (3) Galveston, Texas; and (4) Padre Island, Texas.⁷³ Out of these four proposed projects, the Cape Wind Project is the only one to date that has encountered any wind-related litigation opposing its development.

1. The Cape Wind Project

The Cape Wind Project is a \$900 million offshore wind farm proposed by private developer Cape Wind Associates (CWA), covering twenty-four square miles. The proposed site is 13.8 miles from Nantucket Island, and would include 130 wind turbines, each rising approximately 250 feet above the water's surface.⁷⁴ The turbines will be sited at least five miles offshore, depending on the shoreline, and at their closest point to shore, would be visible on the horizon as half an inch high.⁷⁵ According to Cape Wind Associates, the wind farm will provide three quarters of the electricity used on Cape Cod and the Islands (Nantucket, Martha's Vineyard, and the Elizabeth Islands).⁷⁶

In 2001, CWA submitted an application with the U.S. Army Corps of Engineers (Army Corps) seeking a permit under section 10 of the Rivers and Harbors Act of 1899, which requires a permit from the Army Corps for any

71. *Id.* at 526, 529.

72. Jennifer Weeks, *Wind Resistance*, ON EARTH, Fall 2005, <http://www.nrdc.org/onearth/05fal/frontlines.asp>.

73. *Id.*; Press Release, Texas General Land Office, Patterson signs lease for biggest offshore wind farm in U.S. history—Second major Land Office wind lease in a year a prescription for America's addiction to oil, (May 11, 2006), <http://www.glo.state.tx.us/news/docs/2006-Releases/05-09-06-WL-2.pdf>.

74. CAPE WIND, CAPE WIND PROJECT UPDATES (2006), <http://www.capewind.org.org/news729.htm>.

75. CAPE WIND, PROJECT SITING AND VISUAL SIMULATIONS, <http://www.capewind.org/article7.htm> (last visited Aug. 27, 2007).

76. *Id.*

obstruction to the navigable capacity of any U.S. waterway.⁷⁷ CWA requested approval to construct and operate a 197-foot offshore data collection tower on the Outer Continental Shelf (OCS) in the Horseshoe Shoals area of Nantucket Sound.⁷⁸ Subsequently, the Army Corps presented a draft Environmental Impact Statement (EIS) to the Environmental Protection Agency to approve construction of the tower.⁷⁹ Two lawsuits were subsequently filed by two different environmental groups (the Alliance to Protect Nantucket Sound and Ten Taxpayer Citizens Group) and others, challenging the basis for the Army Corps' approval of the data collection tower and seeking to prevent its construction.

a. Alliance to Protect Nantucket Sound v. U.S. Dep't of the Army

In August 2002, the Alliance to Protect Nantucket Sound (Alliance), a non-profit, environmental group, filed suit against the Army Corps in Massachusetts federal district court challenging the Army Corps' decision to issue a section 10 permit to the CWA authorizing the construction of the data collection tower.⁸⁰ First, the Alliance objected to the Army Corps taking jurisdiction over the CWA's permit application, arguing that the agency lacks the authority to issue a section 10 permit for activities on the OCS unrelated to the extraction of gas, oil, and minerals from the seabed.⁸¹ The Alliance further argued that even if such jurisdiction existed, the Army Corps should have denied CWA's permit application because CWA did not have and could not obtain the requisite property interest to construct a data tower on the OCS.⁸² Finally, the Alliance alleged CWA's proposal contained procedural deficiencies violating the National Energy Policy Act (NEPA). In that regard, the Alliance alleged that the Army Corps:

- (1) failed to circulate the Corps' [environmental assessment] EA and [finding of no significant impact] FONSI for public comment, (2) it did not adequately consider alternatives to the data tower, (3) it acted improperly in reviewing the data tower application apart from the wind energy plant application, and (4) it did not consider the environmental effects of removal of the data tower.⁸³

77. Alliance to Protect Nantucket Sound, Inc. v. U.S. Dep't of Army, 398 F.3d 105, 107 (1st Cir. 2005).

78. Alliance to Protect Nantucket Sound, Inc. v. U.S. Dep't of Army, 288 F. Supp. 2d 64, 67 (D. Mass. 2003). The request stated that the tower would collect information on wind, waves, tide height, currents, and water temperature. CAPE WIND, MEASURING OFFSHORE CONDITIONS, <http://www.capewind.org/article28.htm> (last visited Sept. 6, 2007).

79. 288 F. Supp. 2d at 69. The Corps asserted its jurisdiction over the Cape Wind data tower and wind farm pursuant to section 10 of the River and Harbor Appropriations Act (RHA), as extended by the Outer Continental Shelf Lands Act (OCSLA). 43 U.S.C. § 1337 (2000); see also *Alliance to Protect Nantucket Sound, Inc.*, 288 F. Supp. 2d at 70-71.

80. *Alliance to Protect Nantucket Sound, Inc.*, 288 F. Supp. 2d at 72-73.

81. *Id.* at 72.

82. *Alliance to Protect Nantucket Sound, Inc.*, 288 F. Supp. 2d at 77-78. The Alliance maintained "Corps regulations require that an applicant have sufficient property rights as a prerequisite for a permit." *Id.* at 77-78. The Corps, in reviewing the data power permit application, acting in accordance with its own interpretation of what Corps regulations require, opted not to formally address the property interest issue. In doing so, the Corps relied on Administrative Rules that state in relevant part "[O]ur regulations . . . provide that the Corps should not enter into property disputes but should remind the applicant that the applicant's signature on the application is an affirmation that the applicant possesses the requisite property interest to undertake the proposed activity." *Alliance to Protect Nantucket Sound, Inc. v. U.S. Dep't of Army*, 288 F. Supp. 2d 64, 77 n.95 (D. Mass. 2003).

83. *Id.* at 78.

On September 18, 2003, the district court granted summary judgment in favor of the Army Corps and intervenor CWA.⁸⁴ Addressing the Army Corps' authority to issue a section 10 permit for the data tower, the district court found that the case law has "evolved in such a way that, today, a permit from the . . . [Army] Corps . . . is required for the installation of any structure in the navigable waters of the United States."⁸⁵ The court went on to examine the extent of the Army Corps' section 10 authority over the OCS lands, considering the language of the Outer Continental Shelf Lands Act of 1953 (OCSLA)⁸⁶ as it was originally drafted, the 1978 amendments to the Act, the legislative history of those amendments, and the Army Corps' interpretation of its own authority.⁸⁷ In doing so, the district court rejected the Alliance's argument that Congress, in amending the OCSLA in 1978, restricted the Army Corps' authority to issue section 10 permits on the OCS to "those structures erected for the purpose of extracting resources."⁸⁸ Rather, the court upheld the Army Corps' interpretation of the relevant statutory language, finding "that its section 10 authority extends to all artificial islands, installations, and other devices located on the seabed, to the seaward limit of the [OCS], including, but not limited to, those that *may be* used to explore for, develop, or produce resources."⁸⁹

The district court also rejected the Alliance's contention that the Army Corps' regulations "require that an applicant have sufficient property rights as a prerequisite for a permit."⁹⁰ Rather, the court found that the Army Corps' regulations are designed to keep the Army Corps out of property disputes, and "require only that a permit applicant *affirm*[] that the applicant possesses or will possess the requisite property interest to undertake its proposed activity."⁹¹ The court rejected the Alliance's complaints that the Army Corps failed to satisfy its obligations under the National Environmental Policy Act (NEPA),⁹² holding that (1) no "limited" circumstance existed to require the circulation of the EA and FONSI, (2) the Corps did, in fact, analyze alternatives to the data tower, (3) the data tower project and wind energy plant were properly considered separately, and (4) no evidence existed to suggest the removal of the data tower would cause environmental consequences which are "cumulatively significant."⁹³

Affirming the district court's granting of summary judgment, the court of appeals first determined that the Army Corps had jurisdiction to issue a section 10 permit for the CWA's data tower.⁹⁴ The court then found that the district court did not err in deferring to the Army Corps' interpretation of its own regulations and its decision not to evaluate the sufficiency of the CWA's

84. *Alliance to Protect Nantucket Sound, Inc.*, 288 F. Supp. 2d at 82.

85. *Id.* at 72. (citing PUD No. 1 v. Wash. Dep't of Ecology, 511 U.S. 700, 722 (1994)).

86. 43 U.S.C. §§ 1331-1356a (2000 & Supp. IV 2004); 16 U.S.C. §§ 1801-1883 (2000 & Supp. IV 2004).

87. *Alliance to Protect Nantucket Sound, Inc.* 288 F. Supp. 2d at 72-73.

88. *Id.* at 74.

89. *Alliance to Protect Nantucket Sound, Inc.*, 288 F. Supp. 2d at 75.

90. *Id.* at 77-78.

91. *Alliance to Protect Nantucket Sound, Inc. v. U.S. Dep't of Army*, 288 F. Supp. 2d 64, 77 (D. Mass. 2003).

92. *Id.*

93. *Alliance to Protect Nantucket Sound, Inc.*, 288 F. Supp. 2d at 78-82.

94. *Alliance to Protect Nantucket Sound, Inc. v. U.S. Dep't of Army*, 398 F.3d 105, 111 (1st Cir. 2005).

property interests in the OCS.⁹⁵ Finally, the court concluded that the Alliance's public interest argument failed because the Army Corps reasonably found that the CWA's data tower's impact on federal property rights would be "negligible."⁹⁶

b. *Ten Taxpayer Citizens Group v. Cape Wind Associates, LLC*

In September 2002, the Ten Taxpayer Citizens Group (TTCG), another non-profit environmental group, also filed suit against the CWA to prevent it from erecting the data tower.⁹⁷ TTCG alleged that Massachusetts state courts have jurisdiction over the project and that the CWA failed to obtain the necessary permits required under state law.⁹⁸ The CWA removed the suit to federal court, contending that TTCG's claims were based on federal law, and also filed a motion to dismiss TTCG's claims pursuant to Rule 12(b)(6) of the Federal Rules of Civil Procedure.⁹⁹ TTCG moved to remand the case back to state court.¹⁰⁰ After denying the motion to remand, the federal district court dismissed TTCG's claims, finding that no license from the Commonwealth of Massachusetts was required.¹⁰¹ TTCG appealed.¹⁰²

On appeal, the court found that, pursuant to the OCLSA,¹⁰³ federal law governs the OCS, which the court "defined as all submerged lands under U.S. sovereign control lying seaward of the three-mile boundary"¹⁰⁴ Affirming removal of the case to federal court, the appellate court held that TTCG's claims, though ostensibly premised on Massachusetts law, arose under the law of the United States, so the case was properly removed by CWA to federal court.¹⁰⁵ The court affirmed the trial court's dismissal of TTCG's claims, concluding that any Massachusetts state permit requirement that might apply to the Cape Wind Project is inconsistent with federal law.¹⁰⁶

95. *Id.* at 113.

96. *Alliance to Protect Nantucket Sound, Inc.*, 398 F.3d at 113.

97. *Ten Taxpayers Citizen Group v. Cape Wind Assocs.*, 278 F. Supp. 2d 98, 99 (D. Mass. 2003).

98. *Id.* at 100.

99. *Ten Taxpayers Citizen Group*, 278 F. Supp. 2d at 99.

100. *Id.*

101. *Ten Taxpayers Citizen Group*, 278 F. Supp. 2d at 101.

102. *Ten Taxpayer Citizens Group v. Cape Wind Assocs.*, 373 F.3d 183 (1st Cir. 2004).

103. 43 U.S.C. §§ 1331-1356a (2000 & Supp. IV 2004); 16 U.S.C. §§ 1801-1883 (2000 & Supp. IV 2004).

104. *Ten Taxpayers Citizens Group*, 373 F.3d at 188. *See also* 43 U.S.C. § 1331(a) (2000 & Supp. IV 2004). State laws, with the exception of Texas, govern lands three miles from shore. Texas has sole sovereignty out to 10.36 miles (3 marine leagues) into the Gulf of Mexico. *Id.*

105. *Ten Taxpayers Citizens Group*, 373 F.3d at 192.

106. *Id.* at 197.

c. Current Status of the Cape Wind Project

After enactment of the Energy Policy Act of 2005 (EPAct 2005),¹⁰⁷ regulatory authority over the Cape Wind Project transferred from the Army Corps to the Department of Interior's (DOI) Minerals Management Service (MMS). With respect to the Army Corps' initial EIS, the MMS decided to extend the public comment period by fourteen days ending on July 28, 2006.¹⁰⁸ The next phase in the MMS's review process is preparation of its own EIS regarding the project, which was scheduled to be published in May of 2007.¹⁰⁹ A final ruling on Cape Wind by MMS is not expected until 2008.¹¹⁰ The State of Massachusetts recently concluded that the Cape Wind Project complies with state environmental law.¹¹¹ That final approval was based in part on a \$10 million mitigation package for restoration of bird habitat, natural resource preservation, and marine habitat protection.

On October 4, 2006, the CWA announced it will boost its annual projections of wind-generated electricity production from the project by 7% using the new General Electric 3.6 Megawatt model xl turbine.¹¹² The new wind turbines are slightly taller than the previously proposed turbines, 258 feet up from 246 feet, and the maximum wind turbine blade tip height will now be 440 feet, up from 417 feet.¹¹³ According to the CWA, "this 5% increase in wind turbine height will not appreciably change the visual impact of the project from land."¹¹⁴ The CWA also announced that, in accordance with new wind farm lighting guidelines dictated by the Federal Aviation Administration (FAA), the number of red aviation lights used on its offshore wind turbines will be reduced

107. The EPAct 2005 will potentially help the United States redress the tremendous head start Europe has in promoting cooperative generation. Specifically, despite its seemingly huge potential, certain hurdles have prevented cooperative generation from succeeding in the United States. One of the hurdles is connecting local generation to the grid and receiving a fair price for any surplus capacity sold to a utility. With the passage of the federal Energy Policy Act of 2005, however, the federal government has made a powerful statement that net metering will soon be the law. GREG PAHL, *THE CITIZEN-POWERED ENERGY HANDBOOK* 84-85 (Chelsea Green Publishing Co. 2007). Of course, another impediment to local cooperative generation and net metering is existing prohibitions within zoning ordinances and/or homeowner association rules.

108. Press Release, U.S. Dep't of Interior, MMS Launches OCS Renewable Energy & Alternative Use Website (Oct. 6, 2005), <http://www.mms.gov/ooc/press/2005/press1006a.htm>. MMS requested public input via written comments and invited interested agencies to participate in the preparation of the EIS as it moved through the official approval process. Press Release, U.S. Dep't of Interior, MMS to Extend Comment Period on Cape Wind Energy Project Notice of Intent (July 13, 2006), <http://www.mms.gov/ooc/press/2006/press0713.htm>.

109. See Dick Farley, *First MMS Report is to Establish Rules for Development of Alternative Projects on the Federal Outer Continental Shelf*, CLEAN POWER NOW, Mar. 19, 2007, <http://www.cleanpowernow.org/index.php?name=News&file=article&sid=582&theme=Printer>.

110. *Id.*

111. Stephanie Ebbert, *Cape Wind Moves On To Federal Review*, THE BOSTON GLOBE, Mar. 31, 2007, available at http://www.boston.com/news/local/massachusetts/articles/2007/03/31/cape_wind_moves_on_to_federal_review/.

112. CAPE WIND, CAPE WIND PROJECT UPDATES (2006), <http://www.capewind.org/news729.htm>. "Although the maximum output of the turbines is unchanged at 3.6 megawatts, the new model is more productive during light wind conditions. Cape Wind's annual expected wind power production will now be 1,594,207 megawatt hours, up from 1,489,200 megawatt hours." *Id.*

113. CAPE WIND, *supra* note 112. "The bottom blade tip height is unchanged, at 75 feet. All dimensions are above the surface of the water." *Id.*

114. CAPE WIND, *supra* note 112.

from 260 down to 57, effectively reducing the visual impact of the turbines at night.¹¹⁵

2. Long Island, New York

On April 26, 2005, prior to the August 2005 enactment of the EAct 2005, the Long Island Power Authority (LIPA) and Florida Power & Light Company (FPL) filed a joint application with the Army Corps, seeking authorization to construct a 140 MW offshore wind project called the Long Island Offshore Wind Park (LIOWP) located off the South Shore of Long Island, New York.¹¹⁶ According to LIPA, the project will consist of forty turbines located 3.7 miles southwest of Robert Moses State Park and will provide electricity for approximately 44,000 Long Island homes. LIPA and FPL expect the LIOWP to be operational in 2008 following an extensive regulatory and environmental review by the MMS.

After enactment of the EAct 2005, regulatory authority over the LIOWP transferred from the Army Corps to the MMS. The MMS plans to complete a draft EIS regarding the LIOWP in April 2007, after which a public comment period, including public hearings, will be held to review and comment on the document. A final EIS is expected by February 2008.¹¹⁷ In preparation for the drafting of the EIS, the MMS completed a scoping report, which summarized concerns that individuals and organizations expressed regarding the project. The MMS released the Scoping Report in October 2006. According to that report, nearly 2,500 people and organizations submitted nearly 2,000 letters regarding the project.¹¹⁸ In support of the project, the Citizens Campaign for the Environment also submitted a “YES to Wind!” petition which included approximately 12,000 signatures.¹¹⁹ In contrast, a petition with fifty-four names was submitted by “Responsible Environmentalists for Saving Long Island’s Oceans and Coastlines,” and 151 members of the Biltmore Shores Civic Association submitted individually signed form letters opposing the project.¹²⁰

In summarizing the input received, the MMS identified comments which were brought generally as conceptual concerns. Those conceptual concerns were categorized as “support[ing] the project,” “opposing the project,” “supporting a full fair evaluation” or “support project IF it is evaluated AND the analysis determines there are no significant impacts.”¹²¹ According to the MMS, roughly

115. *Id.*

116. LONG ISLAND POWER AUTH., HISTORY OF THE OFFSHORE WIND PARK (2006), <http://www.lipower.org/cei/offshore.history.html>.

117. U.S. DEP’T OF INTERIOR, MINERAL MGMT. SERVS., SCOPING REPORT: LONG ISLAND OFFSHORE WIND PARK ENVIRONMENTAL IMPACT STATEMENT 1 (2006) <http://www.mms.gov/offshore/RenewableEnergy/LIOWPScopingvolumeI.pdf>. [hereinafter MMS SCOPING REPORT]; U.S. DEP’T OF INTERIOR, MINERAL MGMT. SERVS., MMS LAUNCHES OCS RENEWABLE ENERGY & ALTERNATIVE USE WEBSITE (2005), <http://www.mms.gov/ooc/press/2005/press1006a.htm>.

118. MMS SCOPING REPORT, *supra* note 117, at 3-4. The scoping process also involved public meetings, which were attended by more than 1,000 people. *Id.*

119. MMS SCOPING REPORT, *supra* note 117, at 3. Those signing that petition stated that “they believe that renewable energy needs to be given the opportunity to advance in our nation.” *Id.*

120. MMS SCOPING REPORT, *supra* note 117.

121. *Id.* at 6.

12% expressed opposition to the project,¹²² half of whom based their opposition on environmental concerns.¹²³ In contrast to this meager opposition, 62% expressed support for the project. Tellingly, more than half of these favorable responses cited environmental issues (i.e. the “environment” in general, human health, children, and safety) as the basis for their support,¹²⁴ with the balance of favorable support citing “energy independence or for other political reasons,” or economic reasons as the basis for their approval. Finally, 26% of those responding support a fair and thorough evaluation of the project.¹²⁵

Many of the specific comments regarding the project echoed those environmental concerns. For example, the Sierra Club expressed multiple concerns regarding the effect of the wind farm on avian life.¹²⁶ A substantial number of specific comments were also recorded regarding the effect of the wind farm on the visual aesthetic of the beaches and related impact on culture and tourism.

3. Texas Gulf Coast

According to Texas State Representative Phil King, “Texas is the best state in the nation for wind energy development.”¹²⁷ After securing its independence from Mexico in 1836, the Republic of Texas claimed the offshore boundaries observed under Spanish, then Mexican, rule.¹²⁸ “Sam Houston, president of the new republic, successfully maintained sovereignty over all submerged lands when Texas entered the Union in 1845.”¹²⁹ Texas, therefore, has sole sovereignty over its OCS and coastal waters out to 10.36 miles (3 marine leagues) in the Gulf of Mexico, as opposed to all other states that have sole sovereignty only out to three miles. In light of this fact, rather than dealing with a laundry list of federal agencies to lease OCS land and obtain approval for construction of an offshore wind farm, wind developers in Texas need only deal with the Texas Land Office as long as the project lies within 10.36 miles (3 marine leagues). The Texas Land Office has complete autonomy with respect to leasing within the offshore Texas jurisdiction and approving the construction of offshore structures, such as offshore wind farms.¹³⁰

Currently, there are two offshore wind farms in the planning stages off the Texas coast in the Gulf of Mexico: one near Galveston, Texas, and the other near Padre Island, Texas.¹³¹ While these projects have largely been spared from litigation, time will be the true test. Specifically, as construction begins to scar the horizons, and taxpayers begin to increasingly scrutinize public investment (via tax credits or otherwise), the honeymoon may come to an end. Such

122. MMS SCOPING REPORT, *supra* note 117, at 3.

123. *Id.* at 6.

124. MMS SCOPING REPORT, *supra* note 117.

125. *Id.*

126. MMS SCOPING REPORT, *supra* note 117, at 6.

127. Interview with Phil King, Chairman of the Tex. House Regulated Indus. Comm., Tex. House of Representatives, in Houston, Tex. (2007).

128. Press Release, *supra* note 73.

129. *Id.*

130. Press Release, *supra* note 73.

131. *Id.*

political uncertainty is only one of many risks with which the wind energy developer must contend.

a. Galveston, Texas

On October 23, 2005, Texas Land Commissioner Jerry Patterson announced plans to lease 11,000 acres in the Gulf of Mexico to Galveston Offshore Wind (GOW), a division of Wind Energy Systems Technologies located in New Iberia, Louisiana, for the development of an offshore wind farm.¹³² The multi-million dollar lease allows GOW to immediately begin construction of two meteorological towers to collect wind data in the proposed construction site.¹³³

As part of this three-phase agreement, GOW has agreed to use its own money to map the winds in the Gulf.¹³⁴ This valuable meteorological data may then be used by the Texas Land Office to demonstrate the Gulf's wind potential. In addition to collecting wind speed and pattern data, the lease requires GOW to conduct studies regarding the potential impact of the wind farm on migratory bird patterns and use the information to determine turbine placement.¹³⁵

Once the research phase of the lease is complete, the second phase—the construction phase—will begin.¹³⁶ Construction is expected to cost as much as \$300 million and could take as long as five years.¹³⁷ GOW plans to construct approximately fifty wind turbines that will produce at least 150 MW of wind-generated electricity, enough power for over 40,000 homes.¹³⁸ The turbines will be located approximately ten miles offshore, which is distant enough to preserve the treasured view but close enough to transport the electricity produced by the turbines to onshore substations over submerged power cables.¹³⁹

Upon the completion of construction, a thirty-year production phase will begin.¹⁴⁰ During the first eight years, GOW will pay the Texas Land Office a 3.5% royalty.¹⁴¹ That royalty will increase to 4.5% during years 9 through 16 of the thirty-year lease and escalate to 5.5% during years seventeen through thirty.¹⁴² Accordingly, through the Land Office, the state should earn a minimum of \$26 million in royalties over the thirty-year lease. Like oil and gas royalties generated on state lands, this money will go to the state's permanent University fund.

132. Tom Fowler, *Energy/A Gust of Activity/Construction Has Started on a Wind Farm Off Galveston, Which Could be First in U.S.*, HOUSTON CHRONICLE, Mar. 7, 2007, at B1.

133. Jenna Colley, *Louisiana Firm to Build Huge Wind Farm Offshore Galveston*, HOUSTON BUS. J., Oct. 31, 2005, <http://houston.bizjournals.com/houston/stories/2005/10/31/story6.html> [hereinafter Colley].

134. *Id.*

135. RENEWABLE ENERGY ACCESS, TEXAS BID COULD BE FIRST U.S. OFFSHORE WIND FARM, (2005), <http://renewableenergyaccess.com/rea/news/story?id=38618>.

136. Colley, *supra* note 133.

137. *Id.*

138. Colley, *supra* note 133.

139. Press Release, *supra* note 70, at 1.

140. Colley, *supra* note 133.

141. *Id.*

142. Colley, *supra* note 133.

b. Padre Island, Texas

On May 11, 2006, Commissioner Patterson announced plans for Texas' second offshore wind farm.¹⁴³ The multi-million dollar lease agreement grants Superior Renewable Energy [SRE] "rights to 39,900 acres of submerged lands in the Gulf of Mexico, just off the coast of Padre Island and south of Baffin Bay."¹⁴⁴ SRE plans to build a wind farm that will generate up to 500 MW of power, which is enough electricity to power approximately 125,000 homes.¹⁴⁵

"The lease provides [SRE] a 4-year research period, after which" it will construct turbines capable of producing "a minimum of 250 Mw of [wind-generated] electricity."¹⁴⁶ SRE has plans to expand the offshore wind farm to 500 MW or more. "Under the lease, [SRE] is allowed to assess Texas coastal winds, develop a production plan and construct the wind farm—all with its own money."¹⁴⁷

To address the potential impact of offshore wind farms on migrating birds, the lease requires SRE to retain an avian specialist

with at least five years of experience in studying how wind turbines might affect the migration, movement and flight patterns of birds. . . . In the event an Environmental Impact Statement is not required, the company is obligated to follow pre and post construction mitigation strategies, if any, as set forth by the report provided by the avian specialist. The scope and content of [that report is subject to approval] by the Land Office.¹⁴⁸

"Under the lease, [SRE] pays a modest \$80,000 initial fee, then pays the state 4 percent of its revenue for the first twenty years of operation and 5 percent thereafter."¹⁴⁹ "The General Land Office estimates that the wind farm could provide \$34 million to \$100 million in royalty payments during the life of the 30-year lease."¹⁵⁰

B. Future of Offshore Wind-Related Litigation

The fact that only two lawsuits regarding offshore wind development have been filed as of the date of drafting this article is not surprising since all of the current offshore wind projects are still in their planning stages. Because neither

143. Press Release, Texas General Land Office, Patterson signs lease for biggest offshore wind farm in U.S. history—Second major Land Office wind lease in a year a prescription for America's addiction to oil (May 11, 2006), <http://www.glo.state.tx.us/news/docs/2006-Releases/05-09-06-WL-2.pdf>.

144. *Id.*

145. Lynn Brezosky, *Wind Power is in the Works/Turbine Farm Off Padre Island Will be the Largest in the Country*, HOUSTON CHRON., May 12, 2006, at B1.

146. Press Release, *supra* note 143, at 2.

147. *Id.*

148. Press Release, *supra* note 143, at 2. The provisions in the lease requiring retention of an avian specialists appear to have been motivated by the absence of any Texas law that could require SRE (or Superior) to prepare an EIS. Thus, if an EIS is not required in connection with the permitting process, the lease imposes a contractual requirement "that Superior hire an aviation specialist to do a scientific review that will include recommendations and requirements to which Superior is bound." TEXAS GENERAL LAND OFFICE, OFFSHORE WIND GENERATION FAQs, <http://www.glo.state.tx.us/news/archive/2006/docs/SuperiorFAQ%27s.pdf> (last visited Aug. 28, 2007).

149. Steve Mufson & Juliet Eilperin, *Offshore Wind Farm is Approved: Plant off Texas Coast to be Biggest of its Kind in U.S.*, WASH. POST, May 12, 2006, at D1.

150. Press Release, *supra* note 143, at 2.

construction nor operation of any offshore wind turbines has begun, many of the legal issues commonly encountered when constructing and operating land-based wind farms (e.g., patent infringement, contract disputes, products liability, etc.) have not yet been developed in reported cases.

However, like land-based wind development, litigation regarding the aesthetic and environmental impact of offshore wind turbines is likely to increase. Offshore wind turbines are usually much larger than land-based turbines, and as wind turbine technology continues to improve, offshore wind turbines will likely continue to grow in size to further maximize the energy-generating potential of offshore wind. Accordingly, for the next three to five years, aesthetic concerns will likely continue to be one of the most commonly litigated issues regarding offshore wind development.

New technology being developed in relation to offshore wind farms may also become the subject of litigation. For example, technology is currently being developed that will eventually allow offshore wind farms to be constructed in water depths ranging from thirty meters to 200 meters.¹⁵¹ According to its website, Winergy Power, LLC (Winergy) is currently developing Plum Island Wind Park (PIWP), a research, development, and demonstration project, to test new technology that will make it possible to locate wind farms up to twelve to twenty miles offshore.¹⁵² The wind farms will be installed using a patented deepwater ocean platform technology developed by Atlantis Power, LLC.¹⁵³ Winergy is proposing to erect three wind turbines: two on traditional monopile bases, and one on a jack-up barge.¹⁵⁴ The PIWP site is located just south of Plum Island, New York, beyond the northeastern tip of Long Island. This site was selected because of its remoteness from population and marine traffic. The area has class six wind speeds, which are economically viable for wind development.¹⁵⁵ Importantly, transmission lines of a nearby substation are available within close proximity onshore.¹⁵⁶ The site has the added benefits of having a completed Final Environmental Impact Statement (FEIS) and of being within an exclusive use zone set aside by the State of New York.¹⁵⁷

Another offshore wind-related technology is being created by Paul D. Sclavounos, an MIT professor of mechanical engineering and naval architecture, and his MIT colleagues.¹⁵⁸

In 2004, [they] teamed up with wind turbine experts from the National Renewable Energy Laboratory (NREL) to integrate a wind-turbine with a floater [a

151. Press Release, Massachusetts Institute of Technology, Deep-sea Oil Rigs Inspire Designs For Giant Wind Turbines (Sept. 19, 2006), <http://www.sciencedaily.com/releases/2006/09/060912230012.htm>.

152. WINERGY POWER, LLC, ANSWERS TO FREQUENTLY ASKED QUESTIONS ABOUT THE PLUM ISLAND WIND PARK, http://www.wineryllc.com/projects_pi_faq.htm (last visited Aug. 28, 2007).

153. NORTH AM. OFFSHORE WIND PROJECT, PLUM ISLAND, <http://offshorewind.net/OffshoreProjects/Plum-island.html> (last visited Aug. 28, 2007).

154. RICHARD L. TOMER, U.S. ARMY CORPS OF ENGINEERS, PUBLIC NOTICE (2007), <http://www.nan.usace.army.mil/business/buslinks/regulat/pnotices/200500367.pdf>.

155. WINERGY POWER, LLC, THE PLUM ISLAND WIND PARK, http://wineryllc.com/projects_plum_island.htm (last visited Aug. 28, 2007) [hereinafter WINERGY POWER].

156. *Id.*

157. WINERGY POWER, *supra* note 155.

158. PHYSORG.COM, DEEP-SEA OIL RIGS INSPIRE MIT DESIGNS FOR GIANT WIND TURBINES, <http://www.physorg.com/printnews.php?newsid=76171515> (last visited Apr. 26, 2007).

floating structure]. Their design calls for a tension leg platform (TLP), a system in which long steel cables, or 'tethers,' connect the corners of the platform to a concrete-block or other mooring system on the ocean floor. The platform and turbine are thus supported not by an expensive tower but by buoyancy.¹⁵⁹

According to the MIT-NREL research team's analyses, the floater-mounted turbines could work in water depths ranging from 30 to 200 meters.¹⁶⁰

As to environmental concerns, offshore wind developers may eventually face lawsuits filed by private, non-profit environmental groups, and possibly the Environmental Protection Agency (EPA), if certain offshore wind turbine locations adversely impact a particular endangered species of bird or fish, or generally cause an inordinate number of bird or fish deaths compared to other offshore wind turbine locations. It is difficult to assess this potential litigation until offshore wind farms are constructed and begin operations in the U.S. Litigation relating to questions regarding the effects of the noise and electromagnetic fields created by wind farms, as well as the structures themselves, on marine mammals, birds, and even shellfish, are likely to surface.

As offshore wind development in the United States continues to expand, and U.S. demand for wind-generated electricity increases, so too will the research and development of new and improved offshore wind turbine technologies. Accordingly, offshore wind developers will almost surely face intellectual property lawsuits and related legal issues. For instance, the discovery of new, offshore wind technologies could result in patent infringement claims stemming from the unauthorized use of patented technology. As a practical matter, however, the pace of American offshore wind research and development will largely depend on the success or failure of the four current offshore wind projects. European wind developers, particularly Danish companies, have led the world in offshore wind turbine development for years. In fact, U.S. offshore wind developers will likely rely on much of Europe's offshore wind technology and experience in constructing and operating the four proposed U.S. offshore wind farms. The Department of Energy (DOE) recently announced plans to construct new turbine blade test facilities capable of testing blades up to 230 feet long, but these facilities will probably take years to catch up to the state-of-the-art wind facilities currently operating in Europe.¹⁶¹ Consequently, while U.S. patent infringement lawsuits regarding offshore wind turbine technology are bound to increase, technological advances are made.

Like land-based wind farm construction, building offshore wind farms may encounter an assortment of contract disputes during the planning, development

159. *Id.*

160. PHYSORG.COM, *supra* note 158.

161. Denmark and Germany in particular have excelled in technological innovation because their respective governments have enacted policies fostering development, including cooperative developments. Denmark and Germany have demonstrated the tremendous potential of community, or cooperative, wind generation. In Denmark, approximately 25% of wind generating capacity has been developed by cooperative-like organizations, and another 65% by farmers. In Germany, one third of capacity has been built by associations of local landowners and residents. GREG PAHL, THE CITIZEN-POWERED ENERGY HANDBOOK 71 (Chelsea Green Publishing Company 2007). This innovative approach is helping Europe dramatically grow its wind generating capacity, with some estimating that by the year 2020 Europe's wind generating capacity will be sufficient to satisfy one half of Europe's residential population, or about 195 million consumers. LESTER R. BROWN, PLAN B 2.0 188 (Amy Cherry ed., W.W. Norton & Company 2006).

and construction of offshore wind farms. Potentially significant contract issues offshore wind developers may face after the wind projects become operational relate to royalty payments, operational disputes, safety issues, facilities maintenance, and plug and abandonment issues.

As part of their lease agreement, offshore wind developers that lease federally-owned OCS land from the U.S. government must pay royalties to the U.S. government, and as discussed above, offshore wind farm developers that lease offshore land from the State of Texas must pay royalties to the Texas Land Office. If a developer defaults on one or more of these royalty payments or fails to erect turbines quickly enough to maintain output, the leasing entity (i.e., lessor), whether the federal government or the Texas Land Office, will have the right under their respective lease agreements to file suit against the developer seeking either full payment of the delinquent royalties or termination of the lease agreement. However, before filing suit, the lessor will be required under the lease to provide notice of the delinquency to the developer, affording the developer an opportunity to remedy the problem.

In addition to those issues identified above, once an offshore wind farm begins operating, offshore wind developers could also face increased products liability litigation. For instance, one or more offshore wind turbines could be damaged by a passing boat or ship resulting in litigation concerning damages to the turbines and the boat or ship. Alternatively, severe weather, faulty construction, defective design, or general wear and tear could cause an offshore turbine to throw a blade or collapse, possibly causing property damage to a nearby boat or ship, or to underwater transmission lines.

C. Lease Agreement Disputes

Wind energy lease agreements present one of the biggest potential areas of litigation for land-based wind developers. Before an onshore wind farm can be constructed, leases and other legal documents must be secured from the landowner.¹⁶² Onshore wind leases may easily be thirty to forty pages in length, exclusive of the land description, because wind leases contain many additional provisions that generally are not included in oil and gas leases.¹⁶³ For instance, wind leases involve a lease of the land surface only (i.e., a tenancy for years), as opposed to oil and gas leases which typically involve a conveyance of a fee simple determinable, thus requiring the addition of many provisions not found in most oil and gas leases.¹⁶⁴

1. Rent/Royalty Payments

The primary source of compensation to the landowner in a wind lease is found in the rental and/or royalty clause.¹⁶⁵ A royalty is described in the lease as a percentage of the gross revenues, as that term is defined in the lease.¹⁶⁶ It is

162. RODERICK E. WETSEL, H. ALAN CARMICHAEL, & LISA CHAVARRIA, 2007 WIND ENERGY INSTITUTE OF TEXAS SCHOOL OF LAW, CURRENT ISSUES IN TEXAS WIND ENERGY LAW 2007: LEASES, OWNERSHIP OF WIND RIGHTS AND LITIGATION 2 (2007) [hereinafter WETSEL, CARMICHAEL, & CHAVARRIA].

163. *Id.*

164. WETSEL, CARMICHAEL, & CHAVARRIA, *supra* note 162, at 2.

165. *Id.* at 6-7.

166. WETSEL, CARMICHAEL, & CHAVARRIA, *supra* note 162, at 6-7.

usually paid quarterly.¹⁶⁷ Typically, the only way the landowner can terminate the lease upon default by the wind developer is for non-payment, and then only after the wind developer has been notified of the default and given an opportunity to cure.¹⁶⁸ The wind developer's breach of any other term of the lease agreement only affords the landowner a "cause of action under applicable law."¹⁶⁹

2. Transmission of Electricity

Depending on the state in which a wind developer plans to build a wind farm, the wind developer may have to obtain and pay for a number of feasibility studies to determine whether the state's electrical power grid can handle the increase in power generated by the wind farm.¹⁷⁰ In some states, assuming all the results of the feasibility studies are acceptable, the local utility and the wind developer sign an interconnection agreement, which sets out how much power the wind farm will input to the grid, who will pay for necessary infrastructure improvements to the grid, when the wind developer is required to submit a bond for the benefit of the local utility, etc.¹⁷¹ Two key components of the interconnection agreement are: (1) the amount and timing of security submitted by the wind developer; and (2) whether the local utility guarantees the wind developer a specific in-service date.¹⁷² If the utility company fails to comply with the terms of its interconnection agreement, the wind developer may bring a breach of contract claim against it for any resulting damages.

V. CONCLUSION

Perhaps one day technological developments will enable mankind to generate limitless amounts of energy cleanly and inexpensively. Until that day arrives, however, we are faced with some very hard choices. Americans clearly want to lessen their dependence on foreign oil and reduce harmful emissions, while at the same time sustain our economic growth.¹⁷³ We almost universally applaud development of renewable energy sources, including wind energy, as long as the developments are in somebody else's backyard. We do not want to breathe polluted air, yet we are unwilling to subsidize new transmission lines to transport clean energy. We want to keep the thermostat low during the summer,

167. *Id.* Most wind leases also provide for additional compensation by way of bonus payments before commencement of construction, installation payments, and minimum royalty. WETSEL, CARMICHAEL, & CHAVARRIA, *supra* note 162, at 6-7.

168. *Id.*

169. WETSEL, CARMICHAEL, & CHAVARRIA, *supra* note 162, at 11. Given the huge amount of capital investment made by the wind developer and its investors in a wind project, the landowner will probably find it extremely difficult, if not impossible, to include a provision in the lease allowing the landowner to terminate the lease for anything other than a payment default. *Id.* at 12.

170. Steve DeWolf, *Blowin' in the Wind: Legal Issues Surrounding Development, Construction and Operation of Wind Farms*, 22 TEXAS LAWYER 24 (2006).

171. *Id.*

172. Steve DeWolf, *supra* note 170, at 2.

173. It will clearly take tremendous effort to meet future energy demands. "Global power consumption today is about 12 trillion watt-hours per year, of which 85 percent is fossil fueled. By 2052, the world will demand an additional 10 to 30 trillion watt-hours per year." S. FRED SINGER & DENNIS T. AVERY, UNSTOPPABLE GLOBAL WARMING 214 (Rowman & Littlefield Publishers, Inc. 2007).

yet we are unwilling to look at wind turbines outside our window or while sunbathing on our favorite beach. To borrow an old phrase, we want to have our cake and eat it too.

The authors do not intend to ignore those who question the viability of wind energy developments.¹⁷⁴ There can be no denying that wind farms present significant economic and social costs. Poorly placed farms, especially those utilizing older technology, are not particularly attractive, make some noise, and sometimes have a negative impact on wildlife, particularly when near sensitive avian migratory paths. Admittedly, much of the recent expansion in wind energy has been made possible only by enormous public spending in the form of tax credits and subsidies. Some argue that due to the intermittent nature of wind energy, resources would be better spent on other more traditional sources of energy. Clearly, reasonable people can and do disagree on the proper role of wind energy in America's energy portfolio. Nevertheless, it appears that wind energy is more than just a fleeting trend and that it will continue to expand.¹⁷⁵

With this expansion, objections to wind energy developments will continue to manifest themselves in many ways, including litigation to block developments or the use of certain technology, and also politically through efforts to limit or rescind tax credits which encourage much needed capital infusion by enabling private investors to recover a competitive rate of return on their investment. There will also certainly be significant legal battles instigated by communities, investors, business partners, and land owners as these massive developments begin to age and wear, especially when superior technology makes them increasingly obsolete and produces an inevitable outcry to remove or upgrade what might then be perceived as a festering eyesore.¹⁷⁶ It is largely up to legal development in the courts, regulatory agencies, and state and federal legislatures to facilitate growth by providing the precedent and the regulatory controls that will enhance predictability for those who would pursue wind power development. For now, we are still finding our way in largely uncharted waters, and we will make mistakes. Let us hope that we learn from these mistakes and that our society and way of life continue to prosper.

174. Some correctly point out that the amount of land necessary to generate wind energy sufficient to meet future demand is prohibitively large. "Ten trillion watt-hours per year of wind energy will need windmills occupying more than 600,000 square kilometers." *Id.* at 215.

175. In fact, many would argue that wind and other renewables are critical to fill the expected gap between the supply and demand of oil. In the 1950s, a geophysicist working for Shell Oil Company, M. King Hubbert, predicted that U.S. oil production would peak around 1970, and decline rapidly thereafter. He has been proven correct, as U.S. production peaked at around nine million barrels per day in 1970 and has since been in continual decline. Many geologists now apply Hubbert's theory to calculate world production peak. While their projections differ slightly, they typically agree that worldwide Hubbert peak will occur as early as this decade. While certain assumptions can extend the peak by a few years, the handwriting is still clearly on the wall. DAVID GOODSTEIN, *OUT OF GAS 16-17* (W.W. Norton & Company Ltd. 2004). Demand will soon outstrip supply. Will there be other technologies and supplies to fill the gap?

176. Michael Stroh, *Tuna Power: Engineers Take Lessons From Marine Life to Harness the Ocean's Energy and Light up Thousands of Homes*, *POPULAR SCIENCE*, April 2007, at 32 (explaining that some developers are already planning ahead to a time when it will be necessary to go below the ocean's surface to harness green energy).