The Answer, My Friends, Is in the Wind Rights Contract Act: Proposed Legislation Governing Wind Rights Contracts

by

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The Answer, My Friends, Is in the Wind Rights Contract Act: Proposed Legislation Governing Wind Rights Contracts

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I. INTRODUCTION

The Texas panhandle is again experiencing excitement like that of the oil rush of the early 1980s, or the land rush of the late 1800s.[1] However, the resource now in demand is not its rich soil, nor the crude hidden beneath. Today, prospectors seek wind.[2] When they find it, they buy the rights to its untapped energy from the farmers and ranchers who own the land across which the wind howls.[3] The result has been an unexpected economic boom for the panhandle; wildcatters have been supplanted by a new breed of speculator.[4]

This phenomenon is not limited to the Texas panhandle, however. The Great Plains—from the Rockies in the West to the Appalachians in the East, from Minnesota to Texas—stand to benefit from cheap, efficient, and environmentally-friendly wind energy.[5]

This Note explores the implications of this increased demand for wind. In particular, it examines the unique nature of contracts between the developers of large-scale wind farms and landowners for the right to the wind and its electricity-producing potential. This is a relatively new area of contract law, and as such, the relationships between the parties are being redefined with each new agreement.

A critical information imbalance between landowners and developers threatens to cripple this developing industry.[6] While wind power developers

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1. *See* Thaddeus Herrick, *The New Texas Wind Rush: Oil Patch Turns to Turbines, As Ranchers Sell Wind Rights; A New Type of Prospector*, WALL ST. J., Sept. 23, 2002, at B1 (describing the race to wrap up wind rights in Texas).

2. Wind, at its source, is solar energy. The earth's atmosphere and surface do not absorb the sun's energy evenly, making "some regions of Earth's atmosphere . . . warmer than others." SIDNEY BOROWITZ, FAREWELL FOSSIL FUELS: REVIEWING AMERICA'S ENERGY POLICY 145 (1999). It is estimated that two percent of the total solar energy that hits the earth is converted into kinetic wind energy. ROBERT W. RIGHTER, WIND ENERGY IN AMERICA: A HISTORY 3 (1996). As warm air rises and expands, it becomes less pressurized. BOROWITZ, *supra*, at 145. This causes air to flow from areas of high pressure to areas of low pressure, and results in wind. *Id.* The rotation of the earth ensures that the prevailing direction of flow is from west to east. *Id.* Surface features such as hills, mountains, valleys, and oceans impact the speed, turbulence, direction, and density of the wind. PAULA BERINSTEIN, ALTERNATIVE ENERGY: FACTS, STATISTICS, AND ISSUES 99 (2001). Wind is consistently stronger at higher altitudes and in areas with few physical obstructions, such as the Great Plains and the West Coast. BOROWITZ, *supra*, at 145.

3. Herrick, *supra* note 1.

4. This influx of income has even altered the sensibilities of some residents of McCamey, Texas, which lies in the heart of this region; for the second straight year, they celebrated Earth Day. *Id.* According to one resident, this is "kind of a daring move culturally." *Id.*

5. *See* Christine Real de Azua, *Emerging Issues in Energy and the Environment Symposium Essay: The Future of Wind Energy*, 14 TUL. ENVTL. L.J. 485, 487 (2001) ("[W]ind energy is revitalizing the economy of rural communities from Lake Benton, Minnesota, to Garret, Pennsylvania, and McCamey, Texas, by blowing cash into farmers pockets . . . .").

6. John Bailey, *Minnesota Farmers Must Quickly Learn New Math of Wind Power*, STAR TRIB. (Minneapolis), Aug. 7, 1994, at 26A; *see also* John H. Daniels, Jr., Wind Energy Easements,

likely have taken part in a number of wind rights deals, an individual landowner probably will do so only once in her lifetime.[7] Therefore, the developer has considerable knowledge and background, while the landowner has no comprehensive source of guidance in this field. This information imbalance holds the potential to lead to improvident and unfair contracts between landowners and developers.[8] A wind rights contract typically spans thirty years or more, meaning that a poor contract decision at the outset can have lasting consequences not only for the landowner, but for her children and subsequent purchasers of her land. Such contracts will lead to a distrust of developers, and eventually a population of landowners that is reticent to sell its wind rights. A hesitance to enter wind rights deals will eventually lead to underdevelopment of this valuable resource.

This Note attempts to prevent such a result. Contract law alone is ill-equipped to address the potentially fatal information imbalance, especially in light of the lengthy terms of wind rights contracts. Comprehensive legislation that establishes an acceptable range of contractual terms will decrease the destructive potential of this imbalance by giving the parties a semblance of bargaining equality, thus allowing them to enter a lasting and comprehensive agreement. Further, such legislation can produce wind rights contracts that benefit all parties and help to ensure the future development of wind as an alternative source of power.

Part II of this Note provides historical and contextual information regarding the increasing role of wind-generated electricity in the national energy scheme. Part II also sets forth the legal basis for the recognition of wind rights, which is rooted in large part in the common law of real property. Part III offers a detailed examination of the rights, duties, and liabilities that must be considered in a wind rights deal and examines the manner in which they should be addressed in a wind rights contract. Finally, Part IV proposes new legislation—called, for the sake of convenience, the Wind Rights Contract Act (WRCA)—that will control several of the terms of wind rights contracts. Such legislation will largely eliminate the potential for improvident contracts and ensure the future of wind power development.

Address at the Wind Energy: New Economic Opportunities Seminar (Nov. 21, 2002) (suggesting that landowners obtain advice of counsel prior to entering wind rights contracts).

7. Throughout the course of this Note, this hypothetical landowner is used to demonstrate the pitfalls of wind rights negotiations under the current system and the ways in which the proposed solutions set forth herein will remedy these problems.

8. Bailey, *supra* note 6.

II. BACKGROUND

A. *BRIEF HISTORY OF WIND ENERGY UTILIZATION IN THE UNITED STATES*

Humans realized the potential for harnessing wind energy over five thousand years ago.[9] It was the Dutch, however, who did the most to advance the technology in its early years.[10] The Dutch brought their expertise with them when they migrated to the United States at the end of the nineteenth century.[11] Millions of wind machines[12] were in operation in the first half of the 1900s, both for pumping water and for producing electricity.[13] However, the number of wind machines declined rapidly as rural electrification swept the country and made them seem, for much of the last century, relics of the past.[14]

In recent years, however, wind energy has enjoyed a significant renaissance. In 1978, Congress passed the Public Utilities Regulatory Policy Act (PURPA).[15] PURPA subsidized renewable energy projects and required utilities to buy whatever electricity could be generated by alternative

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9. Early civilizations migrated over distances of approximately one hundred kilometers using rudimentary sailing craft. RIGHTER, *supra* note 2, at 5–6. Sailing ships were also widely used in Egypt as early as 3100 B.C., and sailing technology continued to improve throughout the Roman empires, the Middle Ages, and into the present. *Id.* at 6–7. Wind energy was first captured by land-based windmills built to pump water for crops at the order of the Babylonian Emperor Hamurabi in the twentieth century B.C. BOROWITZ, *supra* note 2, at 145.

10. At one time, there were over nine thousand windmills in the Netherlands. RIGHTER, *supra* note 2, at 6–7. Between the fifteenth and seventeenth centuries, the Dutch erected dikes around their lands and pumped out vast quantities of water. BOROWITZ, *supra* note 2, at 146. This allowed them to live in comfort and develop an agrarian economy in spite of the fact that their lands are significantly below sea level. *Id.* This monumental effort prompted Descartes to say, "God made the earth, but the Dutch made Holland." *Id.*

11. BOROWITZ, *supra* note 2, at 146. Denmark, Holland's neighbor to the north, also has a thriving wind industry, largely due to the country's lack of fossil fuels. Derek Taylor, *Wind Energy*, *in* RENEWABLE ENERGY: POWER FOR A SUSTAINABLE FUTURE 304 (Godfrey Boyle ed., 1996). Research and development continued in Denmark throughout the nineteenth and twentieth centuries, and when wind technology began to take root in California, Denmark exported over seven thousand turbines to the state. *Id.* at 305. In fact, at the peak of the California wind boom, turbines trailed only Danish ham in export value to the United States. *Id.*

12. It is interesting to note that despite the fact that the machines this Note addresses are used solely to produce electricity, they are still popularly known as wind*mills*. This misnomer stems from the centuries-old conception that such machines were best suited for grinding grain using large stones affixed to the driveshaft of the mill. BOROWITZ, *supra* note 2, at 145–46. This Note refers to the machines by their proper, and more descriptive name, wind turbines.

13. Although the vast majority of these early "wind chargers" were quite small and were used by individual landowners to supply personal energy needs, there were some large-scale applications. MICHAEL D. LEVINE ET AL., COGENERATION AND DECENTRALIZED ELECTRICITY PRODUCTION 241–42 (1987). The most famous example was the 1.25 megawatt Smith-Putnam Wind Turbine erected on Grandpa's Knob in Vermont in 1941, which fed electricity into the grid for four years until one of its blades fell off and the project was discontinued. *Id.* at 242.

14. BOROWITZ, *supra* note 2, at 146.

15. 16 U.S.C. § 2601–2603 (2000).

sources.[16] Also, during the early 1980s, federal and state tax credits provided additional incentives for both individual landowners and utilities to produce electricity using alternative sources, including wind.[17]

The combination of the market guaranteed by PURPA and the incentives offered by federal and state governments provided ripe conditions for the industry's growth. During the 1980s the installed wind-generation capacity in the United States grew by nearly 1400%.[18] The vast majority of this growth occurred in California, which had the best sites and the most receptive political climate.[19] However, by the mid-1990s wind energy production leveled off after much of the Californian capacity had been developed.[20]

Beginning in 1998 and continuing into the present day, wind power installation again skyrocketed.[21] Much of the contemporary growth is concentrated in the Great Plains states due in large part to the abundance of suitable sites.[22] Two other factors have contributed to this growth.[23] First,

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16. MARTIN J. PASQUALETTI ET AL., WIND POWER IN VIEW: ENERGY LANDSCAPES IN A CROWDED WORLD 160 (2002).

17. *Id.*; *see also* 16 U.S.C. § 3832(a)(7)(B) (2000) (encouraging installation of wind turbines under the Erodible Land and Wetland Conservation and Reserve Program); 26 U.S.C. § 45 (2000) (providing tax credits for infrastructure associated with alternative sources of electricity production).

18. AM. WIND ENERGY ASS'N, WIND POWER: U.S. INSTALLED CAPACITY (MEGAWATTS) 1981–2003, *at* http://www.awea.org/faq/instcap.html (last visited Mar. 12, 2004) [hereinafter U.S. INSTALLED CAPACITY] (on file with the Iowa Law Review). Graphical materials on this Web site reflect a growth from ten megawatts installed in 1981 to 1396 megawatts installed in 1989. *Id.*

19. PASQUALETTI ET AL., *supra* note 16, at 160. Interestingly, many residents in areas surrounding California wind farms came to object to the early installations, which were often noisy, unreliable, and perceived as eyesores. *Id.* Despite this rocky start, today, objections to wind power in the area are virtually nonexistent. *Id.* at 163.

20. *See* U.S. INSTALLED CAPACITY, *supra* note 18 (evidencing that from 1990 to 1998, the installed capacity increased by only 323 megawatts, from 1525 to 1848).

21. *See id.* (showing a growth from 1848 megawatts in 1998 to 6374 megawatts in 2003).

22. The ten windiest states are all in the Great Plains: North Dakota, Texas, Kansas, South Dakota, Montana, Nebraska, Wyoming, Oklahoma, Minnesota, and Iowa. AM. WIND ENERGY ASS'N, WIND ENERGY: AN UNTAPPED RESOURCE, *at* http://www.awea.org/pubs/factsheets/top202001.pdf (last visited Mar. 12, 2004) (on file with the Iowa Law Review). North and South Dakota alone could supply eighty percent of the nation's energy needs using wind power, even if one were to completely exclude as potential sites "100% of environmentally sensitive and urban lands, 50 percent of forest lands, and 30 percent of agricultural lands." BOROWITZ, *supra* note 2, at 151 (citing a study by the Pacific Northwest Laboratories of Richland, Washington). These factors make the Great Plains especially well-suited for wind energy development and account for the region's rapid expansion. The area's enormous potential for energy production has prompted at least one commentator to call the Great Plains, and North Dakota in particular, "the Saudi Arabia of wind energy." Shane Thin Elk, *The Answer is Blowing in the Wind: Why North Dakota Should Do More to Promote Wind Energy Development*, 6 GREAT PLAINS NAT. RESOURCES J. 110, 113 (2001).

23. A third factor is the federal Production Tax Credit, which for the past ten years has provided a 1.8 cent-per-kilowatt-hour tax credit to producers. Energy Info Source, *U.S. Wind Power May Suffer Beyond 2004 Due to Tax Policy Uncertainty*, *at* http://www.energyinfosource.com/

many states have passed Renewable Portfolio Standards (RPS).[24] A RPS is a market-based mechanism for increasing the total amount of renewable energy in the overall electricity resource portfolio by requiring that utilities purchase a given percentage of their electricity from alternative sources.[25] Several national RPS standards have been proposed in recent congressional sessions; however, none has yet been signed into law.[26] Second, concessions made by traditional energy producers in exchange for relaxation of environmental regulations have contributed to the growth of wind energy in the Great Plains, particularly in Minnesota.[27]

B. BENEFITS OF WIND POWER

This upswing in production means that wind power stands poised to shoulder a greater burden in the production of the nation's electricity. Wind energy is now able to compete economically with the more established forms of energy production. The cost of wind energy has steadily declined as the technology[28] has improved. For instance, the levelized cost of wind energy at

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aoi/news-details.cfm?id=21040&flink=&tf+1 (Jan. 29, 2004) (on file with the Iowa Law Review). However, the credit expired at the end of 2003. One expert predicts that 1.6 gigawatts of new installations are threatened by the expiration of the credit in 2004 alone. *Id.* Debate continues in the Senate regarding a possible extension of the credit. *Id.*

24. AM. WIND ENERGY ASS'N, RENEWABLES PORTFOLIO STANDARD (RPS) PROGRESSES IN STATES AND CONGRESS, *at* http://www.awea.org/ pubs/factsheets/RPSfactsheetStateAugus2003.pdf (last visited Feb. 5, 2003) [hereinafter RPS] (on file with the Iowa Law Review). RPS provisions have been passed in eleven states, including Iowa and Wisconsin. John A. Herrick, *Federal Project Financing Incentives for Green Industries: Renewable Energy and Beyond*, 43 NAT. RESOURCES J. 77, 106 n.140 (2003). Two more Great Plains states, Illinois and Minnesota, have promulgated statutory renewable energy goals. *Id.*

25. RPS, *supra* note 24. Mass adoption of RPS would greatly increase the utilization of wind resources. Richard L. Ottinger & Rebecca Williams, *Renewable Energy Sources for Development*, 32 ENVTL. L. 331, 350 (2002) ("If [RPS] are widely adopted, they would encourage mass production of renewable energy generation equipment, substantially reducing equipment costs, thus making renewable energy more competitive against fossil fuels.").

26. *See, e.g.*, H.R. 1294, 108th Cong. § 609 (2003) (calling for twenty-five percent by 2025); H.R. 6, 108th Cong. § 264 (2003) (calling for ten percent by 2020); S. 1766, 107th Cong. § 265 (2001) (calling for 12.5% by 2020).

27. In May 1994, the Minnesota legislature increased the wind requirements of the Northern States Power Company to 425 megawatts by 2002. N. States Power Co., No. E-002/M-94-730, 1994 WL 733146, at *1 (Minn. Pub. Util. Comm'n Oct. 21, 1994). This requirement was levied in response to Northern States' authorization to store nuclear waste at another facility within the state. *Id.*

28. The most common design for wind turbines today is the horizontal-axis turbine. Real de Azua, *supra* note 5, at 488. This turbine has three blades affixed to a generator mounted atop a large tower. *Id.* The motion of the blades spins magnets in the generator to produce electromagnetic pulses. *Id.* These pulses are transformed into usable electrical current, just as in generators in conventional settings. *Id.* These turbines are typically very large; the tower of one of the most popular models stands 208 feet tall, and each blade measures seventy-nine feet long. *Id.*

The larger the turbine, the more energy it can produce, even though the blades spin more slowly. *Id.* The most commonly used model in large-scale applications is rated at 750

large sites is less than 3.5 cents per kilowatt hour.[29] This compares favorably with traditional sources of energy—coal costs 4.8 to 5.5 cents per kilowatt hour; nuclear costs 11.1 to 14.5 cents per kilowatt hour; and gas costs 3.9 to 4.4 cents per kilowatt hour.[30]

Several factors impact the economy of wind-generated electricity. First, the cost of the electricity is highly dependent on the wind at the site. Greater average wind speeds produce more electricity at less cost.[31] The optimal wind speed for a large-scale application is fifteen miles per hour or more.[32] This level of sustained wind is found in many areas throughout the Great Plains.

Second, wind power is a highly capital intensive technology. Its costs over the long term reflect its relatively high startup costs. Therefore, wind energy is sensitive to the interest rates charged on the startup capital. In fact, one study has shown that if wind plants were financed at the same interest rate as natural gas facilities, their costs would plummet by nearly forty percent.[33]

Third, the cost of wind energy is declining more quickly than the cost of other technologies. In the past decade, for instance, the cost of natural gas plants has decreased by fifteen percent, while the cost of wind generation has decreased by forty-five percent.[34]

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kilowatts at its peak output. *Id.* Some turbines produce even more electricity, up to 1.65 megawatts, enough to power approximately 250 average-sized homes. Henning Hansen, *Wind Energy—A Landowner's Perspective, at* http://www.windustry.com/farmer/hansen.htm (last visited Mar. 12, 2004) (on file with the Iowa Law Review).

29. AM. WIND ENERGY ASS'N, COMPARATIVE COST OF WIND AND OTHER ENERGY SOURCES 1, *at* http://www.awea.org/pubs/factsheets/Cost2001.PDF (last visited Mar. 12, 2004) [hereinafter COMPARATIVE COST] (on file with the Iowa Law Review). The following illustration provides a clear idea of the measures of electricity discussed throughout this Note:

> Suppose you are holding [a 100 watt] light bulb in your hand. . . . That is 100 watts of electrical power: the amount of power the light will consume when you install it and flip the switch on.
>
> Suppose you leave the switch on for one hour. The light will have consumed 100 watts for one hour, or 100 watt-hours of energy. Energy can be calculated by multiplying power by time: if you leave the light on for a day, it will have consumed 24x100=2400 watt-hours, or 2.4 kilowatt-hours. One kilowatt-hour, abbreviated kWh, is 1,000 watt-hours.

CAL. OFFICE OF APPROPRIATE TECH., COMMON SENSE WIND ENERGY 13 (1983).

30. COMPARATIVE COST, *supra* note 29, at 1.

31. *Id.* at 2. For example, the same turbine will generate electricity at 4.8 cents per kilowatt hour in sixteen mile-per-hour winds, 3.6 cents per kilowatt hour in eighteen mile-per-hour winds, and 2.6 cents per kilowatt hour in 20.8 mile-per-hour winds. *Id.*

32. *Id.*

33. *Id.*

34. *Id.* Also, the cost is expected to decrease by a further thirty-five to forty percent by 2006. *Id.*

Fourth, today's turbines are extremely reliable. They operate effectively ninety-nine percent of the time, a much better record than traditional power plants, which may be offline as much as one-third of the time.[35] Turbines also enjoy enhanced reliability because they may be repaired individually, rather than requiring the entire facility to shut down for maintenance, as is necessary for traditional energy sources.[36] Further, wind generators can be expected to last over thirty years.[37]

Fifth, the low environmental impact of wind power makes the technology even more cost effective when compared to traditional technologies.[38] Wind energy produces none of the air pollution that plagues other energy sources[39] and does not present the same complications in connection with the transportation of raw materials or disposal of spent fuels. Thus, every kilowatt hour of electricity produced using wind technology reduces the environmentally-dangerous side effects of traditional production methods.

Finally, the health effects of traditional power plants are often overlooked but should not be underestimated. The most comprehensive study conducted thus far on the effect of traditional energy sources on human health found that coal-burning power plants caused serious health complications for nearby residents.[40] Traditional energy generation technologies produce two-thirds of the sulfur dioxide in the air,[41] which

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35. Real de Azua, *supra* note 5, at 489.

36. *Id.*

37. *Id.*

38. COMPARATIVE COST, *supra* note 29, at 2.

39. For example, fuels other than wind, including coal, natural gas, and oil, emitted approximately five trillion pounds of carbon dioxide (the leading cause of global warming) into the air in 1998, compared with zero pounds for wind energy. AM. WIND ENERGY ASS'N, COMPARATIVE AIR EMISSIONS OF WIND AND OTHER FUELS 1, *at* http://www.awea.org/pubs/factsheets/EmissionKB.PDF (last visited Mar. 12, 2004) (on file with the Iowa Law Review). Further, those fuels emitted approximately twenty-eight billion pounds of sulfur dioxide (the precursor of acid rain) during the same period, compared with zero pounds emitted by wind generation. *Id.* The adverse environmental impacts of traditional fuels include

> damage to forests, lakes, rivers, and buildings from acid rain; damage to wildlife and loss of habitat from strip and mountaintop mining for coal and mining for uranium: drilling and transport of oil, natural gas, and associated risks of spills, leaks, and fires; damming of rivers, and intakes from rivers, to cool reactors; and damage to human and wildlife reproductive systems from toxic metals such as mercury.

Real de Azua, *supra* note 5, at 495.

40. JONATHAN LEVY & JOHN D. SPENGLER, CLEAN AIR TASK FORCE, ESTIMATED PUBLIC HEALTH IMPACTS OF CRITERIA POLLUTANT AIR EMISSIONS FROM THE SALEM HARBOR AND BRAYTON POINT POWER PLANTS (2000), *available at* http://www.hsph.harvard.edu/papers/plant/plant.pdf (on file with the Iowa Law Review).

41. DEVRA BACHRACH, POLLUTANTS, *at* http://www.green-e.org/your_e_choices/pollutants.html (last visited Mar. 12, 2004) (on file with the Iowa Law Review). Other pollutants that result from traditional electricity production include: ozone, particulates, carbon

increases respiratory illness, weakens pulmonary defenses, and aggravates cardiovascular diseases.[42] Further, nitrogen oxides, also created by traditional electricity generation, react with sunlight to create ground level ozone and smog that irritate the lungs and lower resistance to infections.[43] Wind turbines produce no harmful toxins, and therefore have no known adverse affects on human health.

Thus, wind power is prepared to take on a larger role in the nation's energy portfolio. It is a vast untapped resource[44] and cannot be depleted. Our landowner, aware of these benefits of wind power, may wish to sell her wind rights to developers. Part II.C examines the roots of her legal right to do so.

C. *EMERGENCE OF A PROPERTY RIGHT IN THE WIND*

It is somewhat counterintuitive that our landowner should be able to sell the right to the wind that blows across her land. However, recognition of this property right is a precondition to coming to an agreement about how a wind rights deal is to be structured.[45]

To date, only one court has recognized a distinct property right in the wind that can be severed from other interests in land. In *Contra Costa Water District v. Vaquero Farms, Inc.*,[46] the California Court of Appeals for the First District held that the rights for "wind energy power conversion and the transmission of power generated by wind, including . . . the exclusive and perpetual right . . . to develop, construct, install, maintain and operate wind power facilities" could be reserved as a property right distinct from the fee ownership of the underlying land.[47] This ruling indicates that the judiciary is willing to recognize wind rights, but no other cases have yet been reported.[48]

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monoxide, mercury, and radioactive waste. *Id.* These pollutants have been traced to all manner of health complications, from increased sensitivity to allergens to cancer and premature death. *Id.*

42. *Id.*

43. *Id.*

44. *See supra* note 22 (discussing the potential wind energy of various locations).

45. "Wind rights" is a shorthand way to refer to the right to sell an easement that will allow the easement's holder to conduct site surveys, erect wind turbines on the land, construct transmission lines, and so forth.

46. 68 Cal. Rptr. 2d 272 (Cal. Ct. App. 1997). As mentioned earlier, California was the first state to meaningfully embrace wind technology; this is perhaps the reason that the issue has been addressed only in that state.

47. *Id.* at 275.

48. *Prah v. Maretti*, 321 N.W.2d 182 (Wis. 1982), established a landowner's right to unobstructed *sunlight* for solar panels on the landowner's property under a private nuisance theory. This holding would appear to give the hypothetical landowner the right to enjoin the construction of wind-blocking structures, but this specific cause of action has yet to be litigated. For the purposes of this Note, *Contra Costa Water District* is the only judicial support for a property right in the *wind*.

Conventional wisdom holds, however, that wind rights may be recognized under several common law doctrines. First, according to the united fee ownership rule, the landowner's property rights extend to everything from the center of the earth to the sky.[49] Under this theory, some courts have held that landowners are entitled to the rainfall from clouds over their property.[50] The natural extension of this principle dictates a legal right to "harvest" the wind that blows across one's land, thereby clearing the way for the sale of this right.

Second, traditional mineral rights doctrine is informative vis-à-vis the right to sever and sell wind rights. It is well established that surface rights may remain in the possession of one person or entity, while the right to extract various minerals may reside in another.[51] Wind is arguably a "resource," similar to oil or natural gas. Because the surface owner's right to sell the right to the gas or oil under her property is well established, it is only a small and logical step to allow severability of wind rights.

Upon these theories, it is widely believed that wind rights may be severed from the underlying property interests. There is less agreement, however, as to *how* these rights are to be sold or leased. The following Part examines the terms of a contract for such a sale.

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49. As the Supreme Court has held:

> [T]hat the airspace is a public highway. Yet it is obvious that if the landowner is to have full enjoyment of the land, he must have exclusive control of the immediate reaches of the enveloping atmosphere. Otherwise buildings could not be erected, trees could not be planted, and even fences could not be run. . . . The landowner owns at least as much of the space above the ground as he can occupy or use in connection with the land. The fact that he does not occupy it in a physical sense—by the erection of buildings and the like—is not material.

United States v. Causby, 328 U.S. 256, 264 (1946); *see also* Broughton v. Humble Oil & Ref. Co., 105 S.W.2d 480, 482 (Tex. Civ. App. 1937) (holding in an adverse possession action that defendants' entry onto land gave them rights to the mineral rights below the surface as well as rights to the surface itself).

50. The Texas Court of Civil Appeals declared:

> We believe that under our system of government the landowner is entitled to such precipitation as Nature deigns to bestow. We believe that the landowner is entitled, therefore and thereby, to such rainfall as may come from clouds over his own property that Nature, in her caprice, may provide. It follows, therefore, that this enjoyment of or entitlement to the benefits of Nature should be protected by the courts if interfered with improperly and unlawfully.

Southwest Weather Research, Inc. v. Rounsaville, 320 S.W.2d 211, 216 (Tex. Civ. App. 1959).

51. OLEN PAUL MATTHEWS, LEGAL PITFALLS, LAND STATUS AND THE ACQUISITION OF MINERAL RIGHTS 4–5 (1981); *see also* Pawnee Oil & Gas, Inc. v. County of Wayne, 751 N.E.2d 1268, 1269 (Ill. App. Ct. 2001) (holding that mineral estates are taxable separate from surface estates); Evangelinos v. Ohio Div. of Reclamation, 691 N.E.2d 365, 366 (Ohio Ct. App. 1997) (validating a deed that severed surface from subsurface rights).

III. CONTRACTUAL CONSIDERATIONS IN THE SALE OF WIND RIGHTS

When drafting a contract for the sale or lease of wind rights, a number of factors bear consideration.[52] This Part sets forth the five most important substantive areas of concern and briefly discusses the way in which the WRCA deals with each of them.[53] The essential weakness of contract law regarding each of these considerations is its failure to account for the information imbalance between the parties, which carries the potential to

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52. John H. Daniels, Jr. isolates twelve questions to ask when entering a wind rights contract:

> 1. How much of my land is going to be tied up and for how long?
>
> 2. How much are they going to pay me and how are payments to be received?
>
> 3. Are the proposed payments adequate now and will they be adequate in the future based on what I am giving away?
>
> 4. If a lump sum payment is being offered for long term rights am I really being adequately compensated?
>
> 5. Does the proposed method of payment or the easement itself present any adverse tax consequences to me?
>
> 6. Are they actually going to develop my land or are they just trying to tie it up?
>
> 7. Are they willing to guarantee that a specific number of wind energy turbines will be built on my land or are they at least willing to guarantee me certain minimum payments?
>
> 8. If payments are to be based on revenues generated by the wind energy turbines, how much information are they willing to disclose concerning how their revenue will be determined?
>
> 9. What easement rights is the developer able to later sell or transfer without my consent and how might such transfer or sale effect [sic] me? Will the original developer still be liable to me if the new developer or owner of the easement rights does not pay me or otherwise defaults?
>
> 10. What are the developer's termination rights? Can the developer simply terminate the easement at any time and if so how does that effect [sic] future payments?
>
> 11. What are my termination rights and are they easily exercised?
>
> 12. If the easement is terminated either voluntarily or involuntarily what happens to the wind energy structures, and related facilities located on my land? Is the developer required to remove everything, including underground cables and foundations, and if so how soon and at whose cost?

Daniels, *supra* note 6.

53. Although many potential issues should be addressed in any contract, the proposed legislation deals only with those that are common to every wind rights contract and that carry the most potential for disrupting the agreement if poorly negotiated or overlooked entirely. At first glance, the WRCA seems to be a radical departure from traditional contract law in that it would take a portion of the parties' traditional bargaining power away from them. However, such legislation is not unprecedented, especially in the realm of utilities regulation. *See* sources cited *infra* note 135 (detailing state legislation that regulates the relationships between parties in net-metering relationships).

cripple the progress of wind power projects.[54] The WRCA emphasizes protecting the interests of the landowner, while at the same time providing incentives to developers,[55] resulting in mutually beneficial contracts and continued growth in wind-produced electricity.

A. COMPENSATION CONSIDERATIONS

1. Valuation of the Site

In most situations, the most important provisions of a wind rights contract will set forth the payment structure for the deal. Generally, three factors impact a potential site's suitability for wind power development: (1) windiness; (2) proximity of electric power lines; and (3) the cost of building access roads.[56]

The most important factor is the overall windiness of the site. The power contained in the wind varies in relation to the cube of its velocity.[57] Therefore, a fifty percent reduction in wind speed amounts to only one-eighth of the original power contained in the wind.[58] Generally, developers will not consider installing wind machines on land unless its wind speeds average at least eleven to thirteen miles per hour.[59] Sites that have sustained winds of greater velocity are more valuable. Valuations should be adjusted accordingly.

Second, the proximity of existing electrical lines can affect a site's value. Tap lines that feed the electricity into the existing grid cost $25,000–35,000 per mile to construct.[60] The ideal situation is an area where there are large wind resources near existing power lines, but due to the remote locations of many sites, this seldom exists.[61]

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54. See *infra* Part IV for a full discussion of the problems posed by contemporary contract law.

55. See *infra* Part IV.F for a discussion of the benefits given to developers under the WRCA.

56. Tom Wind & Lisa Daniels, *Land Values: A Landowner's Perspective on Wind Turbine Lease Payments*, *at* http://www.windustry.com/opportunities/lease.htm (last visited Feb. 5, 2003) (on file with the Iowa Law Review).

57. LYNDE COIT, SOLAR ENERGY RESEARCH INST., WIND ENERGY: LEGAL ISSUES AND INSTITUTIONAL BARRIERS 10 (1979).

58. *Id.*

59. AM. WIND ENERGY ASS'N, 10 STEPS IN BUILDING A WIND FARM 1, *at* http://www.awea.org/pubs/factsheets/10stwf_fs.PDF (last visited Mar. 12, 2004) (on file with the Iowa Law Review). A simple way to check the wind characteristics of one's own state is to consult the wind maps at the National Renewable Energy Laboratory Web site, at http://rredc.nrel.gov/wind/pubs/atlas.

60. Wind & Daniels, *supra* note 56.

61. The more potential sites there are on the land, the easier it is for developers to justify the cost of erecting the necessary power lines. *Id.* However, if there are only one or two potential turbine sites, this will decrease the value of the wind rights considerably, as there will be less income to defray the costs of the tap line. *Id.*

Finally, each turbine must be accessible. Increased distance from existing roads will make sites less valuable because of the added expense of constructing longer routes of access.[62] The parties must also analyze the characteristics of the land over which the roads will be built. More difficult terrain, of course, will cause further escalation of costs and make the wind rights less valuable.

2. Payment Structures

Wind rights payment provisions are grouped into two general types: lump-sum payments and annual or royalty payments.[63] Each payment structure has advantages and disadvantages, complicating any comparison.[64] Thus, the preferred form of payment will depend largely on the circumstances of the particular development.

Lump-sum payments are structured as a one time, per turbine payment.[65] For most landowners, these payments are quite significant, sometimes reaching into the low six figures, and are largely dependent on the size of the facility.[66] One of the obvious benefits of this form of payment is that it provides instant cash flow for the landowner.[67] Further, it allows the landowner to avoid the risk associated with receiving annual payments over the lifetime of the turbine.[68]

However, there are several drawbacks to lump-sum payments. First and foremost, the land consumed by the turbines and associated equipment will

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62. *Id.*

63. *Id.*

64. The preferred payment structure will depend on several factors, including "the cost of money, the term of the contract, the landowner's individual tax situation, some speculation about inflation in the future, and the landowner's immediate need for money versus a long-term desire to have dependable income and to pass on value to heirs." *Id.*

65. MINN. RURAL FIN. AUTH., EVALUATION OF THE WIND ENERGY CONVERSION FACILITY PILOT LOAN PROGRAM 10 (1997) [hereinafter EVALUATION OF WIND ENERGY] (on file with the Iowa Law Review).

66. *See* John Bailey, *Will Minnesota Farmers Benefit from Wind Power?*, *at* http://www.me3.org/issues/wind/windoped.html (Aug. 1994) [hereinafter *Minnesota Farmers*] (noting that this prospect for quick wealth may appeal to farmers in certain situations) (on file with the Iowa Law Review); Wind & Daniels, *supra* note 56 ("A typical lump-sum payment might be $75,000 to $100,000 for a 160 acre parcel of land.").

67. Wind & Daniels, *supra* note 56.

68. For the risk-averse, lump-sum payments offer obvious benefits:

> If the wind farm owner goes bankrupt, the landowner doesn't have to worry about receiving future annual payments. Likewise, if inflation gets out of control at some point in the future, the value of a lump-sum payment will be "locked in" when compared to the value of annual payments paid with inflated dollars, which are worth less.

Id.; *see also* EVALUATION OF WIND ENERGY, *supra* note 65, at 10 (noting that landowners are further protected from the potential that the turbines may produce less electricity than anticipated when paid a lump sum).

not be available for any other use during the term of the lease. Thus, upon accepting a lump-sum payment, the landowner has reduced her property value, albeit by a relatively small percentage, as the turbines and supporting infrastructure will generally consume three to five percent of the land area.[69] Second, as wind energy is by its very nature somewhat speculative, the landowner will miss out if the wind farm exceeds revenue expectations.[70] Finally, there is a distinct possibility of relations between the landowner and the utility or developer becoming strained after the lump-sum payment has been consumed.[71]

Annual payment contracts, on the other hand, are structurally different. In one type of arrangement, the developer may pay the landowner a set amount per kilowatt hour generated by the turbine, with this figure adjusted periodically for inflation.[72] Alternatively, the developer might initially pay the landowner a per-turbine amount, then pay a small percentage of gross revenue for a term of years, and then pay a somewhat larger percentage in later years.[73]

There are several advantages to an annual payment contract. First, this contract will produce income in each year over the life of the agreement.[74] This adds value to the property, as there is a certain amount of guaranteed income from the land for the term of the contract.[75]

Second, this type of arrangement will lead to improved relations between the landowner and developer.[76] There is a constant reminder of the reason the landowner abides the inconvenience of the turbines on her property, so she is less likely to object to the intrusion.[77] This is a benefit that should not be overlooked, as there is a natural human tendency to ask: What have you done for me lately? With annual payments flowing in, the answer is readily apparent.

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69. *Minnesota Farmers*, *supra* note 66 (noting that land values will be increased not only because of the added annual income, but also because ninety-five to ninety-seven percent of the land will remain available for other uses). *But cf.* DANISH WIND INDUS. ASS'N, 21 FREQUENTLY ASKED QUESTIONS ABOUT WIND ENERGY, *at* http://www.windpower.org/en/faqs.htm#anchor789527 (last visited Mar. 12, 2004) (suggesting that developments only take one percent of the available land area) (on file with the Iowa Law Review).

70. Lump-sum plans generally will not be adjusted during the life of the contract to reflect developments that perform better than had been expected.

71. *See* Wind & Daniels, *supra* note 56 (noting that annual payments tend to lead to improved relationships between the involved parties).

72. *Id.*

73. *Id.* Commonly, there is an initial payment of $2,500 per turbine, plus two percent of gross revenues in the first fifteen years of the contract and four percent in the following fifteen years. *Id.*

74. *Id.*

75. *Id.*; *see also Minnesota Farmers*, *supra* note 66 (noting that land values will be increased because of the added annual income).

76. Wind & Daniels, *supra* note 56.

77. *Id.*

Third, annual payments will lessen the instant impact on local land values. While lump-sum payments may cause speculative landowners to attempt to "bid up" land values in hopes of cashing in on quick income, the annual payment will largely avoid this problem.[78] This stability in the land market preempts later disruptions that would threaten land values in the areas surrounding wind power developments.

There are, however, several disadvantages inherent in annual payment contracts. In arrangements where annual payments are tied to the developer's revenues, the landowner is at a disadvantage under the current law. She cannot discover the terms of the contract between the developer and the utility, as that contract is proprietary.[79] While no two contracts are the same, it is fairly common for the utility to pay a premium for the wind-produced electricity while the developer is repaying construction bonds during the early part of the contract.[80] The utility will reduce payment to levels that are competitive with other sources later in the life of the contract.[81] This is why many annual payment contracts grant the landowner a larger percentage of the developer's revenues later in the contract.[82] To avoid the potential for lowered payments in later years, the WRCA requires transparency of contracts between utilities and developers during the negotiation of a wind rights contract between developers and landowners, and during the term of the agreement. This transparency is accomplished by granting the landowner the right to inspect, with the aid of legal counsel, the terms of any agreements between developers and utilities.

Second, in contracts where the landowner's revenues are determined by the number of kilowatt hours produced by the development, the landowner shares the risk of underperforming turbines.[83] Further, any faulty estimates with regard to average wind speed can have serious repercussions on the revenue stream to the landowner. For example, a drop of only one-half mile per hour in wind speed will result in a 7.2% reduction in power generation and, consequently, a corresponding reduction in payments to the landowner.[84] The payment structure and inspection rights set forth in the WRCA alleviate this potential pitfall.

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78. *Id.* Although the danger of "bidding up" land values exists with annual payments as well as with lump-sum payments, annual payment arrangements disincentivize such speculation.

79. This is because the contract between the developer and the utility is a private agreement between the parties and is therefore proprietary. *Id.*

80. *Id.*

81. Wind & Daniels, *supra* note 56.

82. "Since the wind farm owner doesn't divulge what the long-term expected gross revenue is, the landowner doesn't know how to estimate the payments over the longer term. This lack of information makes it impossible to directly compare the annual payment option with the lump-sum option." *Id.*

83. EVALUATION OF WIND ENERGY, *supra* note 65, at 11.

84. Wind & Daniels, *supra* note 56.

With these considerations in mind, the WRCA secures for the landowner several additional rights when negotiating wind rights contracts with developers. First, she may contract for the right to verify with the utility any data used to calculate payments.[85] Second, the WRCA ensures her right to inspect data from individual turbines to find out which, if any, are underperforming.[86] Pursuant to this contractual right, the developer would be required to keep detailed records pertaining to the turbines on the landowner's property, independent of any other wind farms the developer might have in the area.[87] Finally, the landowner can secure the right to an independent audit of the developer's books to verify that the developer continues to make payments as agreed in the original contract.[88] By securing these rights, our landowner is better able to accurately monitor the turbines and her income stream from them.

Both lump-sum and annual payment contracts have positive and negative aspects. The WRCA incorporates elements of each arrangement in establishing a payment structure. By balancing the two species of contracts, the advantages of each are realized while at the same time the drawbacks of each are minimized.

B. TORT LIABILITY CONSIDERATIONS

Although personal injury and property damage claims related to the operation of wind turbines are rare,[89] the potential remains for very costly judgments associated with the technology. The sheer scale of industrial wind turbines enhances the potential danger that they pose should catastrophic failure occur.[90] If blades were to become detached from the turbine, they

85. *See* EVALUATION OF WIND ENERGY, *supra* note 65, at 11 (noting the importance of such a provision).

86. *See id.* (suggesting such an approach). If one or more of the turbines are underperforming, the landowner may be able to pressure the developer to repair or replace it, thereby making the turbine more efficient and increasing the landowner's income stream.

87. *Id.*

88. *Id.*

89. Mick Sagrillo, *Advice from an Expert: Insuring Your Wind System, Potential Insurance Needs/Costs, at* http://www.awea.org/ faq/sagrillo/ms_insur2.html (last visited Mar. 12, 2004) (on file with the Iowa Law Review). However, accidents do happen. Terry Mehrkam, one of the true pioneers of wind turbine technology in this country, was killed by one of his own machines when it spun out of control and he climbed the tower to attempt to stop it. PETER ASMUS, REAPING THE WIND: HOW MECHANICAL WIZARDS, VISIONARIES, AND PROFITEERS HELPED SHAPE OUR ENERGY FUTURE 89–92 (2001). While attempting to control the mechanism with a screwdriver, Mehkram was thrown off the machine to his death. *Id.* Another tragic incident in the early days of American wind turbine technology occurred during the grand opening of a new vertical axis turbine when a Southern California Edison employee was decapitated when the turbine self-destructed during its dedication. *Id.* at 217.

90. One of the most popular models in use, the Z-750, manufactured by GE Energy, has three blades that weigh 5566 pounds each. Hansen, *supra* note 28. The turbine is mounted atop a tower that weighs approximately 125,000 pounds. *Id.* As turbines grow ever larger, the risk increases. One of the enormous new two megawatt machines manufactured by Vestas weighs up

may fly considerable distances and cause serious personal injury or death.[91] Likewise, falling towers or flying blades may cause substantial damage to surrounding property.[92]

To date, the law of wind rights has borrowed liberally from the liability principles of mineral rights law.[93] The default rule in mineral rights law is that the lessee bears liability for damages to real property.[94] The same is true for personal injuries that are attributable to the use of the mineral rights.[95] However, this liability may be waived by contract.[96] The WRCA mandates that developer liability is unwaivable, and further that the developer must carry sufficient insurance to cover any foreseeable liabilities. Additionally,

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to 315 metric tons and stands over 100 meters. *See generally* Vestas Wind Technology Web site, *at* http://www.vestas.com (last visited Mar. 12, 2004) (providing technical data on all wind turbines manufactured by the company). However, there have been no documented instances of members of the public being injured by wind turbines, in spite of the fact that there are now more than 35,000 turbines in operation around the world. BRITISH WIND ENERGY ASS'N, WIND ENERGY FAQS, *at* http://www.bwea.com/ref/faq.html (last visited Mar. 12, 2004) [hereinafter WIND ENERGY FAQS] (on file with the Iowa Law Review).

91. Sagrillo, *supra* note 89. Likewise, persons may be injured either by electrocution or by falling from the tower. *Id.* Additionally, there is a risk of injury due to ice accumulation on the blades of the turbine that is then thrown off as the wind picks up and the rotor begins to spin. 2 H. SELZER, POTENTIAL OF WIND ENERGY IN THE EUROPEAN COMMUNITY: AN ASSESSMENT STUDY, SERIES G 133 (1986). Finally, liability may result from collisions between low flying aircraft and turbines. *Id.*

92. Sagrillo, *supra* note 89.

93. *See supra* note 51 and accompanying text (discussing parallels between mineral and wind rights). Mineral rights are used as a frame of reference because the law is entirely undeveloped with regard to the sale of wind rights. It is fair to assume that the courts would at least consider mineral rights principles when resolving the liabilities of parties to a wind rights contract.

94. *See, e.g.*, Breeding v. Koch Carbon, Inc., 726 F. Supp. 645, 646 (W.D. Va. 1989) (noting that a landowner who has parted with his or her mineral rights has a right to have the land supported in its "natural condition"); Rocking M. Ranch, Inc. v. Sahara Coal Co., 576 N.E.2d 1120, 1122 (Ill. App. Ct. 1991) (holding that a state statute recognizes the liability of the lessee to the landowner for subsidence); Haseman v. Orman, 680 N.E.2d 531, 532 (Ind. 1997) (holding that mineral rights owners have an absolute duty to provide subjacent support and to prevent subsidence, so long as the subsidence is not caused by structures placed on the land by the owner of the surface rights); Magnolia Coal Terminal v. Phillips Oil Co., 576 So. 2d 475, 484 (La. 1991) (holding that a lessee's negligence in failing to plug an oil well, causing damage to soil, groundwater, and the Mississippi River, rendered the lessee liable for damages to the landowner and ordering the lessee to abate the nuisance).

95. This is an important contractual area because with mineral rights contracts, in the absence of a lease provision for the lessee to restore the land after use, courts have been unwilling to impose such a duty. *See* Amoco Prod. Co. v. Carter Farms Co., 703 P.2d 894, 897 (N.M. 1985) (refusing to impose a duty to restore land following oil and gas drilling in absence of an express provision in lease); Nichols v. Burk Royalty Co., 576 P.2d 317, 323 (Okla. Ct. App. 1977) (holding that defendants did not have a duty to restore land in absence of an explicit provision in the lease allocating this duty to them).

96. *See Rocking M. Ranch*, 576 N.E.2d at 1122–23 (holding that a clause in the mineral rights contract waiving "all surface damages of any sort" indemnified the lessee and was not contrary to public policy).

the WRCA requires that the landowner be named as an additional insured for an amount sufficient to cover the landowner's potential exposure.[97]

C. *PROPERTY TAX CONSIDERATIONS*

Most states tax wind power developments at a higher rate than surrounding farmland.[98] These higher rates can result in large tax burdens for either the landowner or the developer, easily reaching into the millions of dollars.[99] Under the tax provisions in effect in most areas, it would be impossible for the landowner to pay the property tax bill for the wind turbines,[100] as it is often many times the revenue that she could expect to earn by selling the wind rights. Under traditional contract law, the lessor is liable for property taxes, unless responsibility is assigned to the lessee in the lease agreement.[101]

It is easy to imagine a situation in which our landowner would be suddenly confronted with a tax bill that she would be incapable of paying. Under the WRCA, the tax burden is allocated to the developer in the contract since the developer is in a better position to bear that cost and reaps far greater rewards under the terms of the contract.

D. *ENVIRONMENTAL CONSIDERATIONS*

Wind-generated electricity is less polluting than traditional sources of electricity production.[102] There are, nevertheless, some environmental side effects to wind development, namely low-level noise and electromagnetic interference.[103]

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97. *See* Daniels, *supra* note 6 (suggesting such a provision).

98. For instance, Minnesota charges a wind energy production tax for all facilities installed after January 1, 1991. *Minnesota: Omnibus Tax Bill Makes Changes*, ST. TAX REV., May 28, 2002, at 24. This tax ranges from $0.012 per kilowatt hour for very small facilities to $0.12 per kilowatt hour for large-scale facilities. *Id.* It should be noted that municipalities may, at times, waive property taxes during the early years of a project as an incentive for development, although this waiver is usually eliminated during the latter years of the project.

99. Under the tax structure set forth *supra* in note 98, for example, if a landowner has a fairly moderate ten megawatt wind power installation on his land, which produces approximately thirty million kilowatt hours annually (assuming a thirty-five percent capacity factor), this would amount to $3.7 million in annual property taxes.

100. One unexpected benefit of wind development to local landowners is that the development may have the effect of actually lowering the tax burden on the rest of his or her land. Hansen, *supra* note 28. This is a direct effect of the base-broadening that occurs when the property tax revenue from a wind development is added to the local tax situation. *Id.*

101. *See* W.C. Crais, III, Annotation, *Liability as Between Lessor and Lessee, Where Lease Does Not Specify, for Taxes and Assessments*, 86 A.L.R.2d 670, § 3 (2003) (citing widespread acceptance of this rule).

102. *See supra* notes 38–43 and accompanying text (discussing environmental benefits).

103. In addition to noise and electromagnetic interference, much has been made of the impact of wind turbines on avian populations as an additional environmental risk associated with the technology. In reality, however, studies indicate that fewer than two birds are killed per turbine, per year, which is much lower than the impact of many other human activities on avian

There are two types of noise pollution created by turbines. Noise created by mechanical elements of the turbine itself is known as mechanical noise, while noise produced by the interaction of the turbine blades with the air is called aerodynamic noise.[104] Advances in wind turbine technology have alleviated most, if not all, of the noise pollution that plagued earlier turbines.[105] Comfortable noise levels are largely subjective, so our landowner may wish to contract for noise reduction measures. Even if the noise does not bother the landowner, she may wish to preempt any nuisance claims. First, the landowner should obtain a noise analysis of the site.[106] Second, she may contract for setbacks,[107] or choose not to lease wind rights to areas near her home. Contracting for these provisions assures the landowner that any noise from the site will not become bothersome.

When a turbine is situated between a radio, television, or microwave transmitter and a receiver, it may reflect some of the electromagnetic radiation, distorting the signal.[108] This effect depends mostly on the blade material.[109] Metal blades tend to cause the most interference,[110] but most modern blades are made from wood composite or fiberglass, thereby

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populations. AM. WIND ENERGY ASS'N, FACTS ABOUT WIND ENERGY AND BIRDS 1, *at* http://www.awea.org/pubs/factsheets/WEandBirds.pdf (last visited Mar. 12, 2004) (on file with the Iowa Law Review).

104. Taylor, *supra* note 11, at 296; *see also* G. Guidati et al., *Prediction and Reduction of Wind Turbine Noise: An Overview of Research Activities in Europe, in* A COLLECTION OF THE 2000 ASME WIND ENERGY SYMPOSIUM: TECHNICAL PAPERS PRESENTED AT THE 38TH AIAA AEROSPACE SCIENCES MEETING AND EXHIBIT 219–20 (ASME ed., 2000) (discussing substantive differences between various types of aerodynamic noise: low-frequency (produced by blade passing through the shadow of the tower), airfoil self-noise (produced by the blade itself), and inflow-turbulence noise (produced by interaction between the leading edge of the blade and the air)).

105. Although at one time noise pollution was a major consideration, modern advances in technology, to a large extent, have made noise a non-issue. *See* AM. WIND ENERGY ASS'N, FACTS ABOUT WIND ENERGY AND NOISE 2, *at* http://www.awea.org/pubs/factsheets/WE_Noise.pdf (last visited Mar. 12, 2004) (on file with the Iowa Law Review) (noting that turbines built in the 1980s were extremely noisy, such that their sound was annoying up to a mile away). Upwind turbines, which avoid the problem of the rotor passing through the wind "shadow" of the tower, have largely alleviated the problem of noise. *Id.* at 3. Also, design improvements including streamlining the body (or nacelle), soundproofing the nacelle, improving the efficiency of blades, and the use of advanced gearboxes contribute to the reduction of mechanical noise. *Id.* In fact, 750 to 1000 feet away from an operating wind farm, the noise is no louder than a refrigerator or a moderately quiet room. *Id.* at 2.

106. *Id.* at 4. This analysis will account for the topography of the area and the distance to nearby residences, and should give the landowner an accurate picture of the noise level that can be expected.

107. *Id.*

108. Taylor, *supra* note 11, at 299.

109. *Id.*

110. *Id.*

minimizing the interference.[111] However, the landowner may want to negotiate for a remedy to this problem, should it arise after the turbines are installed.[112]

By addressing potential environmental issues in the contract between the developer and landowner, each party is assured that these relatively minor problems will not pose major obstacles to their continued relationship in the later years of the contract. The WRCA's requirement of an environmental analysis allows our landowner to bargain for measures to reduce noise and electromagnetic distortion.

E. LAND REHABILITATION CONSIDERATIONS

Wind farm construction necessitates some disturbance of the surrounding land, although after construction the land is potentially tillable up to the base of each tower.[113] Also, the landowner can use the land up to the edges of the access roads for farming or other activities.[114] However, these advantages depend on the landowner contracting for land reconstruction after the turbines are built. If the property is left as it is after construction, relatively large areas will be unsuitable for use.[115] The WRCA mandates that the developer perform necessary repairs, thus ensuring the utility of the landowner's property during the life of the development.

Further, landowners can ensure that the developer will be responsible for decommissioning the wind farm at the end of its useful life.[116] Clauses that call for the removal of all visible traces of the turbines are relatively common and take care of the turbines and towers.[117] Further, while the developer may remove the concrete bases entirely, it may be less disruptive to simply construct them so that they can be covered with soil after the turbines are removed.[118] Roads may either be destroyed or left in place to provide easy access for the landowner after decommissioning.[119] By assigning

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111. RENEWABLE ENERGY RESEARCH LAB., WIND ENERGY: ELECTROMAGNETIC INTERFERENCE (EMI) WHITE PAPER, *at* http://www.ecs.umass.edu/mie/labs/rerl/research/emi.html (last visited Mar. 12, 2004) (on file with the Iowa Law Review).

112. This problem may be remedied fairly cheaply and easily by either installing relay transmitters or connecting affected persons to cable television service. Taylor, *supra* note 11, at 299.

113. *See* Hansen, *supra* note 28 ("There is no danger of farming up to the towers. All electric lines are underground, so there is no chance of hitting overhead lines or poles. There are no guy wires from the towers so there is no danger of hitting and damaging the towers.").

114. *Id.*

115. Although only three to five percent of the land is used when wind farms are fully operational, a somewhat larger proportion will be affected during construction.

116. Decommissioning refers to removal of necessary infrastructure if and when the developer decides to discontinue use of the site.

117. WIND ENERGY FAQS, *supra* note 90.

118. *Id.*

119. *Id.*

these responsibilities at the outset, the WRCA assures that the landowner is not left with a "bone yard"[120] after the wind power development is decommissioned.

Under traditional contract law, landowners have no protection from a contract in which they unwisely sell their wind rights for far less than their value, or fail to protect their interests. This may stifle future growth of wind technology as landowners grow to distrust developers and become unwilling to sell their wind rights at all. The WRCA ameliorates the impact of the information imbalance that results under the current law and allows landowners to effectively negotiate for the sale of their rights at an equitable price. The following Part details the particular provisions of the WRCA that establish the contractual parameters for each of the aforementioned areas of concern.

IV. THE WRCA SOLVES THE PROBLEMS OF DEFICIENT CONTRACT LAW

Traditional contract law, which is slowly expanding into the area of wind rights contracts, provides a less than ideal means to provide the balance of information necessary to ensure the future of wind energy.[121] Contracts that are based upon unequal access to information, and thus are objectively improvident or unwise, will not be deemed invalid upon that basis.[122] It has been universally held that the terms to which the parties agree should be honored, whether or not the bargain is a hard one, and no matter how unwise the terms may seem to third parties.[123]

In some limited circumstances, courts may find such a contract unconscionable, and therefore rescind or reform it. However, in the context of wind rights contracts, these remedies would be available only if the court found that the comparative experience and education of the parties necessitated such action,[124] or if the developer had grossly misrepresented the value of the wind rights in order to persuade the landowner to enter into the contract.[125] However, contracts are generally presumed valid and will only be declared void in the event of substantial injustice.[126]

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120. Many of the wind farms in California are strewn with junk parts of old turbines, creating both an aesthetic eyesore and an environmental hazard, and making other use of the land untenable.

121. *See supra* notes 6–8 and accompanying text (discussing this information imbalance).

122. 17A AM. JUR. 2D *Contracts* § 295 (2002).

123. *Id.*

124. *See* Jefferson Credit Corp. v. Marcano, 302 N.Y.S.2d. 390, 394–95 (N.Y. Civ. Ct. 1969) (holding that a customer with limited grasp of the English language who unwittingly waived both warranties of merchantability and fitness for purpose would not be bound by the contract because it was unconscionable).

125. *See* Davis v. Kolb, 563 S.W.2d 438, 438 (Ark. 1978) (holding that where a party that represents itself as experienced in the valuation of a commodity grossly misrepresents the value of that commodity, the contract will be found unconscionable).

126. 17A AM. JUR. 2D *Contracts* § 295 (2002).

Whether a wind rights contract is held valid in spite of unfair terms, or the landowner is able to have the contract declared invalid on grounds of unconscionability, the goal of expanding the use of wind energy is disserved. In the former case, the landowner is held to a contract that she does not feel treats her fairly, whether in terms of payments, liabilities or burdens. She will be reticent to sell her rights in the future, as will other landowners. In the latter situation, even if the contract is rescinded or reformed, the landowner similarly will feel that developers do not have her best interests at heart. Further, the parties will be forced to engage in additional negotiations, potentially harming the overall viability of the project. Therefore, this area of the law is ripe for normalizing legislation that protects the rights of the landowner and provides incentives for developers, thus guaranteeing the continued development of this valuable alternative energy source.[127]

Although contract law principles necessarily underlie any agreement for the sale or lease of a property right, legislation can supplement such agreements beneficially by setting forth acceptable parameters for wind rights contracts.[128] Further, such legislation can promote the development of wind power by blunting the impact of the information imbalance, thus removing a barrier to contractual relations between the parties.

A. *COMPENSATION PROTECTIONS*

First, with regard to compensation issues, the WRCA requires that landowners be paid annually the greater of a flat fee or a percentage of gross revenues. Such a provision will insulate the landowner from the risk of years in which some turbines under-perform or are out of service.[129] Legislatures cannot mandate specific values or percentages, as the value of the wind rights depend on siting considerations,[130] local property values, and other factors. However, the WRCA provides for reasonable compensation for the landowner. This provision thereby allows our landowner the main benefit of annual payment contracts (i.e. a steady stream of income over the life of the lease) while ameliorating some of the risks of such a payment structure.

In addition to this payment, under the WRCA the landowner has the option to receive payment at the outset for the market value of her farmland

127. Congress and some states have passed similar statutes establishing certain contractual terms to facilitate the use of certain natural resources. *See, e.g.*, 25 U.S.C. § 314 (2000) (providing compensation to landowners for construction of railroads on their land); 30 U.S.C. § 4b (2000) (establishing payment structure for contracts for the extraction of potash and oil); 43 U.S.C. § 1200a (2000) (setting forth appraisal formulas for mineral rights on Indian lands); IOWA CODE § 564A.5(3) (2003) (establishing payment amounts for solar energy easements).

128. Legislation of this type is not unprecedented. See *infra* notes 133–34 and accompanying text for a discussion of precedent for the WRCA.

129. The landowner would further be protected from the possibility that the developer might decide not to install turbines at all.

130. *See supra* Part III.A (discussing various siting issues that impact wind rights valuation).

removed from productive use,[131] subtracting such figure from her annual payments. Alternatively, the landowner may choose to amortize such payment over the life of the contract. This provision will allow the landowner to have the benefit of a lump-sum payment, while reducing the landowner's annual payments only slightly. This initial payment may then be used to defray the costs of having a portion of her land removed from production.[132]

The WRCA will also mandate full financial disclosure vis-à-vis the turbines placed on the landowner's property. Further, the statute will ensure the landowner's right to verify any production data with the utility. The WRCA also will require the developer to keep separate books for the landowner's turbines and allow the landowner to inspect those books upon reasonable notice. These provisions will enable her to monitor the income stream from those turbines more effectively and guard against diminution of her income due to under-performing turbines.

Finally, with regard to compensation, under the WRCA, the landowner has the right to examine any contracts between the developer and the utility. This right allows her to determine the value of her own rights more accurately because she can gauge the sum that the developer is paid for the electricity produced on her land.

B. TORT LIABILITY PROTECTIONS

The WRCA provides that the wind rights contract cannot waive the developer's tort liability for injury to persons and the surrounding land. Further, this legislation will require the developer to carry an insurance policy sufficient to provide coverage for foreseeable civil judgments and to include the landowner as an additional insured on this contract. This provision protects the landowner from unforeseen costs during the course of the contract term and shifts the burden of civil litigation to the developer, who likely is better able to sustain such an expense.

C. TAX LIABILITY PROTECTIONS

Third, the WRCA will require the developer to assume liability for any increases in property taxes as a result of the development. The amount of liability is determined by comparing the actual tax burden with the liability that would attach in the absence of any turbines. Thus, the developer, receiving the vast majority of the profits from the development, cannot hold

131. Note that this will be the value of the land *as farmland*, not as farmland with wind turbines installed upon it.

132. For example, if four percent of her land could no longer be used for farming activities, the WRCA will require compensation at four percent of her gross revenues from the land prior to the development, either at the time that the contract enters into force, or throughout the life of the contract, with a reasonable adjustment for inflation.

the landowner liable for the property taxes on land that is out of her possession and control.

D. ENVIRONMENTAL PROTECTIONS

The WRCA will provide for a full environmental impact study prior to the initiation of the contractual relationship, with the results of such study released to the landowner. This study must specifically address issues of noise generation and electromagnetic interference.[133] With this information, the landowner will be able to contract effectively for siting of the turbines and for modern designs that would minimize aural and electromagnetic interference.

E. LAND REHABILITATION PROTECTIONS

The WRCA includes provisions requiring the developer to bear the cost of rehabilitating the land both after installation and after the contract expires and is not renewed. This mandate will extend to cover the costs of removing the turbines and towers. Further, bases will be removed or covered with soil to a reasonable depth, roads will be removed, and the land will be made otherwise suitable for the same use as that which surrounds it. The present value of the estimated cost to complete such rehabilitation will be placed into escrow at the outset of the contract.

F. DEVELOPER INCENTIVES

Each of the aforementioned provisions is aimed at lessening the impact of the information imbalance between landowners and developers, consequently ensuring the long-term success of such contractual relationships and in effect enhancing the viability of wind power development. However, the WRCA includes some incentives for developers as well.

First, because of the large investment inherent in building infrastructure to support turbines, the WRCA will specify that wind rights contracts shall include renewal provisions, which would be operative for a like term. Further, the WRCA shall mandate that renewal options be enforced absent material breach of the contract by the developer. The effect of such provisions is to ensure the developer access to the wind site for a number of years.

Second, the WRCA will provide that the benefit of new technologies that greatly increase the output of the development over the life of the contract shall accrue to the developer, not to the landowner. Thus, if an unforeseen technology is developed during the term of the contract that increases production by fifty percent, for example, any gains over that

133. *See supra* Part III.D and accompanying notes (discussing environmental impacts of turbine development).

amount will not be subject to the aforementioned pricing structure. This provides incentive for the developer to continue to innovate, and allows the benefits of the funds spent on research and development to flow to the developer, who will have borne the cost of developing and acquiring the new technology.

Although these statutory mandates may seem heavy handed, they are not without precedent. In the case of contracts between utilities and small-scale producers regarding net-metering,[134] many states have passed provisions that set forth the duties that each party must assume.[135] Therefore, state governments would act within their authority in enacting legislation such as that outlined in this Note.

V. CONCLUSION

The WRCA would not entirely supplant contract law in the area of wind rights because contract law effectively structures and formalizes relations between the parties to any agreement. However, the unique characteristics of wind rights contracts necessitate legislative guidance as to the parameters of such contracts. Such guidance is invaluable in the formation of contracts that will stand the test of time. This is largely due to the fact such legislation will ensure that landowners will be willing to enter into this type of contract because the legislation diminishes the impact of the information imbalance in connection with this new technology. Thus, the public policy of expanding the role of wind power in the national energy scheme may be more effectively realized.

Wind power stands poised to assume an ever-larger role in the national energy picture. However, continued bargaining for wind rights under contemporary contract law may curtail the promise held by this technology. By supplementing this law with a legislative enactment that sets forth the parameters of wind rights contracts, the states can significantly reduce the information imbalance between developers and landowners. This will inspire greater confidence on the part of landowners in negotiating these contracts. This increased confidence will, in turn, pave the way for equitable

134. Net-metering is the process by which utility customers who also have small wind-generation facilities (or other alternative electricity sources) connect to the utility grid and feed electricity into the grid at times when their production outstrips their demands.

135. *See, e.g.*, CAL. PUB. UTIL. CODE § 2821 (West 2002) (giving California the power to establish equitable charges and "reasonable and prudent" terms and conditions for contracts between the parties); IND. CODE § 8-1-2.4-4 (2001) (requiring the purchase of power at rates that will further the public policy of promoting the development of alternative energy sources); IOWA ADMIN. CODE r. 199-15.5 (2003) (requiring that rates paid to the producer be "just and reasonable to the electric consumer and in the public interest"); ME. REV. STAT. ANN. tit. 35-A, § 3306 (West 2002) (mandating that costs for installing or improving electrical lines to a site be "apportion[ed] . . . upon the benefits to the small power producer or cogenerator and the transmission and distribution utility").

and lasting contractual relations between the parties, leading to the continued growth of wind energy production.

The benefits of this source of energy include better air quality, enhanced property values, lower electricity costs, enhanced human health, and more. These benefits make it imperative that legislatures do all that they can to promote the continued development of wind energy. Comprehensive legislation modeled after the WRCA will ensure the future of wind technology in the national energy scheme.