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The Answer is Blowing in the Wind: Why North Dakota Should Do More to Promote Wind Energy Development

by

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THE ANSWER IS BLOWING IN THE WIND: WHY NORTH DAKOTA SHOULD DO MORE TO PROMOTE WIND ENERGY DEVELOPMENT

SHANE THIN ELK[†]

I. INTRODUCTION

Although we rely upon electricity nearly every minute of the day, many Americans tend to take its availability for granted. The recent power shortage in California, however, has given notice to the entire country and helped to focus public attention on energy policy.[1] While this focus on energy policy exists, it is important that environmental concerns are not forgotten; in fact, renewable energy sources can help to prevent future energy shortages not only in California but also in the rest of the country as well. Today, the most promising renewable energy resource is wind energy.[2] Wind energy is not only

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1. *See generally* American Wind Energy Association (hereinafter AWEA), *Strong RFP Response Shows Wind's Potential in Western Power Crisis*, htttp://www.awea.org/news/news010524rfp.html (accessed Nov. 15, 2001).

2. Shi-Ling Hsu, *Reducing Emissions From the Electricity Generation Industry: Can We Finally Do It?*, 14 TUL. ENVTL. L.J. 427, 439 (2001).

pollution-free[3] but also has the potential to compete with traditional fossil-fuel combustion plants.[4]

While the viability of wind energy as a major source of our nation's power is largely dependent upon federal regulation such as the Public Utilities Regulatory Act (hereinafter PURPA),[5] the states also have a role in facilitating the development of wind energy.[6] This article attempts to give a brief introduction to wind energy technology as well as impediments to its development by focusing upon three recent North Dakota statutory amendments designed to facilitate the development of wind energy in that state. In addition, the article suggests that the tax incentives granted by the North Dakota amendments may be helpful in encouraging the development of wind energy, but that North Dakota should adopt a more comprehensive statutory scheme in order to be effective.

II. A BRIEF OVERVIEW OF WIND ENERGY

A. BASIC PRINCIPLES

Wind energy is a form of solar energy.[7] It has been estimated that around 2 percent of the sun's energy hitting the earth eventually becomes kinetic wind energy.[8] Given that the Earth does not uniformly absorb this energy, the warmth of the atmosphere differs in various regions. [9] Although a complex

3. Howard A. Learner, *Cleaning, Greening, and Modernizing The Electric Power Sector In The Twenty-First Century*, 14 TUL. ENVTL. L.J. 277, 296 (2001). "Wind power provides substantial environmental and public health benefits because it creates no air pollution, greenhouse gasses, or radioactive and other dangerous wastes. By applying responsible siting practices, wind projects can have minimal impacts on wildlife and natural resources." *Id.*

4. Hsu, *supra* note 2, at 439.

5. F. Paul Bland, *Problems of Price and Transportation: Two Proposals to Encourage Competition From Alternative Energy Sources*, 10 HARV. ENVTL. L. REV. 345, 370 (1986). "One of the least recognized, but most significant, portions of President Carter's National Energy Plan in 1978 was PURPA. Prior to its passage, extremely burdensome state regulations often stymied alternative energy producers. PURPA solved this problem by exempting certain qualifying cogenerators and small power producers from the full panoply of regulation facing normal electric utilities." *Id.* (citations omitted). "PURPA has enjoyed favorable treatment in the courts. . . ." *Id.* "Federal energy law is ubiquitous." John Dernbach, *Moving The Climate Change Debate From Models to Proposed Legislation: Lessons From State Experience*, 30 ENVTL. L. REP. 10933, 10976 (2000). "Federal environmental law also plays a role in shaping potential tools [to facilitate alternative energy production]." *Id.* at 10977.

6. Christine Real de Azua, *The Future of Wind Energy*, 14 TUL. ENVTL. L.J. 485, 497 (2001). "State experience provides a source for learning what works and what does not work. State actions provide insight into what actually happens when specific tools are employed, alone or in combination with others. Factual information about the effect of state laws or programs already in place is also more accurate and useful than projections based on assumptions about how the world works, particularly assumptions based on the choice of legal instruments. Because we have actual information about how these instruments work, we can consider applying them in other states or at the national level with some confidence about their likely effect and effectiveness." Dernbach, *supra* note 5, at 10950.

7. SIDNEY BOROWITZ, FAREWELL FOSSIL FUELS: REVIEWING AMERICA'S ENERGY POLICY 145 (Plenum Press 1999).

8. FRED BOSSELMAN ET AL., ENERGY, ECONOMICS, AND THE ENVIRONMENT 59 (Foundation Press 2000).

9. BOROWITZ, supra note 7.

interaction of many variables takes place,[10] it is the basic difference in air pressure between the warm (low pressure) and cool (high pressure) air regions that causes the air to flow.[11] It is this movement of air that we call wind.

As with all energy sources, wind energy is usually measured by its ability to produce energy; this unit is generally the watt.[12] A watt is simply a basic unit to measure electric power: a kilowatt equals 1,000 watts, and a megawatt equals 1 million watts.[13] Utility scale wind energy facilities generally range anywhere "from a few megawatts to hundreds of megawatts in capacity."[14]

B. HARNESSING THE WIND'S POWER: AN ANCIENT PHENOMENON

Although the ultimate source of wind's kinetic energy is of extraterrestrial origin, the concept of harnessing the wind for energy is by no means alien to humankind.[15] By 5,000 B.C., the Egyptians were using the wind to sail along the Nile.[16] Although most associate him with the codification of laws, the Babylonian Emperor Hammurabi proposed using wind mills to pump water for use in irrigation around 2,000 B.C.[17] In 200 B.C., windmills were in use in Persia and became widely established there by 600 A.D.[18] It seems that this technology was widely diffused in the East by the time of the Crusades, and that as the marauding Crusaders returned home, they may have helped to spread the use of windmills across Europe.[19] This technology was especially utilized and refined in Holland, and the Dutch brought their use of windmills with them when they immigrated to North America.[20]

C. WIND ENERGY ON THE GREAT PLAINS

Wind has always played a significant role in the lives of the people in the Great Plains Region. To the original inhabitants of the Great Plains, the wind was and continues to be an integral aspect of their spirituality and daily culture.[21] Moreover, anyone who has witnessed a tornado or viewed pictures of the devastation caused by a tornado can attest to the tremendous amount of energy potential present in the winds of the Great Plains.[22] Early farmers in

10. JOHN J. BERGER, CHARGING AHEAD: THE BUSINESS OF RENEWABLE ENERGY AND WHAT IT MEANS FOR AMERICA 138 (Holt 1997).
11. BOROWITZ, supra note 7.
12. AWEA, *The Most Frequently Asked Questions About Wind Energy*, http://www.awea.org/pubs/factsheets/FAQUPDATE.pdf (accessed Oct 25, 2001).
13. *Id.*
14. *Id.*
15. BERGER, supra note 10.
16. *Id.*
17. BOROWITZ, *supra* note 7.
18. BERGER, supra note 10.
19. *Id.* at 189.
20. BOROWITZ, *supra* note 7, at 146.
21. *See generally* JOHN NEIHARDT, BLACK ELK SPEAKS (U. of Neb. Press 1961). "Traditional Lakota believe that to feel the wind was the ability to touch the invisible or spirits." A.C. ROSS, MITAKUYE OYASIN: WE ARE ALL RELATED 184 (BEAR 1989).
22. BOROWITZ, *supra* note 7.

the area recognized that some of this great energy could be harnessed, and by the early 1900s there were around two million windmills in use on the Great Plains.[23] These windmills were used primarily for pumping water for livestock and agricultural use but also found significant utilization in sawmills and railroad yards.[24] With the introduction of rural electrification, however, the use and sales of windmills dramatically decreased.[25]

Today, it is widely recognized that the Great Plains has enormous potential to generate electricity relying solely upon the utilization of wind energy.[26] In fact, North Dakota and South Dakota not only have the capacity to meet their own state energy demands, but also the capacity to supply upwards of 80 percent of the entire nation's energy needs.[27] Realistically, it is "not unreasonable to expect that wind turbines stand ready to provide at least 20-30 percent of the United States electrical needs. . . ."[28] It is this untapped potential that has led many to describe the Great Plains region, and North Dakota in particular, as "the Saudi Arabia of wind energy."[29] According to recent calculations, the top ten states for wind energy potential in the nation are in the Great Plains region: North Dakota, Texas, Kansas, South Dakota, Montana, Nebraska, Wyoming, Oklahoma, Minnesota and Iowa.[30]

D. MODERN WIND ENERGY GENERATION SYSTEMS

Today, the most prevalent design of wind turbines utilizes the horizontal access turbine:[31]

> This type of turbine displays a set of feather-shaped blades, usually three, mounted atop a high tower to a unit called a nacelle. The nacelle contains the generator. As the winds spin the blades, the blades turn a shaft. The shaft is usually connected to a gearbox which spins magnets in the generator to produce electro-magnetic pulses, as in the generators of conventional power plants.[32]

These modern turbines are generally very large: the most popular design in the U.S. employs a tower standing 208 feet tall with each blade 79 feet long.[33] Modern turbines are also very quiet, usually not generating a sound any louder than that of the wind.[34]

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23. ROBERT W. RIGHTER, WIND ENERGY IN AMERICA: A HISTORY 281 (U. of Oklahoma Press 1996).
24. BERGER, *supra* note 10, at 139.
25. BOROWITZ, *supra* note 7, at 146.
26. *Id.* at 151.
27. *Id.*
28. *Id.*
29. RIGHTER, *supra* note 23.
30. *See* AWEA, *Wind Energy: An Untapped Resourse,* at http://www.awea.org/pubs/factsheets/top202001.pdf (accessed Oct. 25, 2001).
31. *See The Most Frequently Asked Questions About Wind Energy*, *supra* note 12.
32. Real de Azua, supra note 6, at 488 (citations omitted).
33. *Id.*
34. *Id.* at 489.

Another feature of modern wind energy conversion systems is their reliability.[35] Most systems are functional 99 percent of the time and general maintenance can usually be scheduled on a rotating basis among the turbines.[36] By comparison, conventional power plants must go entirely off-line when maintenance is necessary.[37] Thus, it may be said that percentage wise, wind energy facilities are generally more available than conventional power plants.[38]

III. STATE RESPONSES TO THE MAJOR IMPEDIMENTS IN THE DEVELOPMENT OF WIND ENERGY

With all of the positive aspects of wind energy, one may wonder why the technology is not more pervasive. As a matter of fact, wind energy only provides approximately 1 percent of the nation's energy production.[39] Many factors contribute to the slow growth of this technology and ignorance about modern wind generation systems is not the least of these factors.[40] In regards to individual states, the main challenges appear to be siting of wind energy generation facilities, stimulating investment in wind energy facilities, and ensuring the presence of adequate transmission lines once the facilities are functional.[41]

Due to the large amount of space generally required for wind farms, states must anticipate land use conflicts.[42] This land-use conflict is not unique to wind energy generation facilities, however, as siting has traditionally been a concern for most other types of power plants.[43] On the other hand, wind energy generation facilities are unique because the actual turbines only cover around 5 percent of the wind farm's total area.[44] Thus, these facilities are particularly suited to agricultural regions.[45] Wind can be viewed as a modern

35. *See generally* AWEA, *How Reliable are Wind Turbines?*, http://www.awea.org/faq/reliab.html (accessed Nov. 15, 2001).

36. *Id.*

37. Real de Azua, *supra* note 6, at 489.

38. *See The Most Frequently Asked Questions About Wind Energy*, supra note 12.

39. *See* U.S. Energy Information Admin., *Energy Data Rankings*, at http://www.eia.doe.gov/neic/rankings/rankindex.html (accessed Oct. 25, 2001).

40. Real de Azua, *supra* note 6, at 487-88.

41. BOROWITZ, *supra* note 7, at 154. "There are three basic components to the electricity industry: production, transmission, and distribution." F. Paul Bland, *Problems of Price and Transportation: Two Proposals to Encourage Competition From Alternative Energy Sources,* 10 HARV. ENVTL. L. REV. 345, 388 (1986). "The trade term for this set of transmission transactions is 'wheeling' which the Supreme Court has defined as the 'transfer by direct transmission or displacement of electric power from one utility to another over the facilities of an intermediate utility.'" *Id.* at 389 (*citing* Otter Tail Power Co. v. United States, 410 U.S. 366, 368 (1973)). "An alternative energy producer... usually wants access to wheeling services for the same reasons as the larger utilities. As rational profit seekers, these producers are seeking the best possible price for their power." Bland, *supra.* "Unfortunately, wheeling services are often hard to obtain." *Id.*

42. BOROWITZ, *supra* note 7, at 151. "Wind power production requires a great deal of space. Because of the turbulence created by the rotating blades, the machines have to be placed between 150-300 meters apart. An efficient wind farm must have at least 100 of these machines." *Id.*

43. *See* N.D. Cent. Code §49-22 (1994).

44. BOROWITZ, *supra* note 7, at 151.

45. Howard A. Learner, *Cleaning, Greening, and Modernizing The Electric Power Sector In The Twenty-First Century*, 14 TUL. ENVTL. L.J. 277, 297 (2001).

cash crop for farmers who "can often increase their incomes by 50 percent or more by leasing a portion of their land for wind turbines. . . farming operations on the rest of their land are unaffected."[46] As much of the Great Plains has traditionally been agricultural in nature, it does not appear that siting of wind energy facilities will present a significant challenge in this region. Conventional zoning systems can most likely be adapted to overcome this obstacle and it only remains for states to include wind energy facilities in their statutory language.[47]

States with high wind energy generation potential also face the task of stimulating investment in these facilities. One major impediment to the development of wind energy facilities is the fact that investors are usually unable to obtain the same financing terms as traditional power plants.[48] The higher interest rates charged to wind energy facilities are most likely due in large part to the misconceptions and outdated information that surround the technology.[49] In order to stimulate investment in these facilities, wind energy must become competitive with traditional forms of energy production. States have attempted to deal with this situation in three general ways: through indirect subsidies most often in the form of tax incentives,[50] through the establishment of renewable portfolio standards,[51] and through legislation that requires energy producers to internalize the environmental costs of their production methods.[52]

IV. THE NORTH DAKOTA APPROACH

In order to facilitate the development of wind energy in the state, the North Dakota legislature recently enacted three statutory amendments.[53] These laws, generally, seek to promote wind energy by granting various tax incentives to companies that locate wind energy generating facilities in the state.

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46. *Id.*

47. Kim R. York & Richard L. Settle, *Potential Legal Facilitation Or Impediment Of Wind Energy Conversion System Siting,* 58 WASH. L. REV. 387, 397 (1983). Minnesota is one state that uses siting to encourage the development of alternative energy sources. "Minnesota also requires that the added environmental costs identified in the planning process be used in the approval process for individual facilities. The state prohibits the siting or construction of large energy facilities unless the utility commission has issued a certificate of need. The certificate of need cannot be issued unless, among other things, the applicant demonstrates that the 'alternative selected is less expensive including the environmental costs than the power generated by a renewable energy source.'" Dernbach, *supra* note 5, at 10961.

48. *Wind Energy Weekly #709,* Aug. 12, 1996, htttp://www.awea.org/faq/cost.html (accessed July 26, 2001).

49. Real de Azua, *supra* note 6, at 492.

50. *Id.* at 511.

51. Alan Miller & Adam Serchuk, *The Promise and Peril In A Restructured Electric System,* 12-FALL Nat. Resources and Env't 118, 148 (1997).

52. Margaret Tortorella, *Will The Commerce Clause "Pull The Plug" On Minnesota's Quantification Of The Environmental Externalities of Electricity Production?*, 79 MINN. L. REV. 1547, 1549-51 (1995).

53. N.D. CENT. CODE § 57-39.2-04.2 (2000 & Supp. 2001); N.D. CENT. CODE § 57-02-02 (Supp. 2001); *and* N.D. CENT. CODE § 57-38-01.8 (Supp. 2001).

A. NORTH DAKOTA HOUSE BILL 1221

On January 12, 2001, Representative Dale C. Severson introduced House Bill 1221 (hereinafter HB 1221).[54] The House unanimously passed HB 1221 on February 8, 2001, and the Senate received the bill the following day.[55] On March 16, 2001, the Senate also unanimously passed the bill.[56] Governor John Hoeven signed HB 1221 into law on March 26, 2001.[57] The amendment applies to taxable events after June 30, 2001.[58]

The stated purpose of HB 1221 was "to amend and reenact subdivision b of subsection 1 of section 57-39.2-04.2 and subdivision b of subsection 1 of section 57-40.2-04.2 of the North Dakota Century Code, relating to sales and use tax exemptions for certain wind-powered electrical generating facilities."[59] Section 57-39.2-04.2 of the North Dakota Century Code provides certain exemptions for the construction of power plants as well as exemptions for production equipment; however, prior to the passing of HB 1221, wind energy generating facilities were not included in the definition of "power plant."[60] This omission of wind generating facilities from the definition of "power plant" for tax exemption purposes appears to be a common feature of most state statutory schemes.[61]

Under the statute, those wind generating facilities that qualify are entitled to exempt construction costs and sales of production equipment from the state sales tax.[62] In order for a wind generating facility to qualify for the exemptions, HB 1221 requires that "construction" of the facility and "all additions to the facility" must be completed before January 1, 2011.[63] In addition, HB 1221 requires that the facility have "at least one single electrical generation unit with a nameplate capacity of one hundred kilowatts or more."[64]

B. NORTH DAKOTA HOUSE BILL 1222

Introduced on January 12, 2001, by Representative Michael D. Brandenburg, North Dakota House Bill 1222 (hereinafter HB 1222) passed the House on February 8, 2001 by a vote of 97 to 1.[65] The Senate received the bill the following day and, after a committee hearing, unanimously passed HB

54. North Dakota Legislative Branch, *2001 Bills/Resolutions, House Bills*, http://ranch.state.nd.us/LR/01/bill_actions/BA 1221.html (accessed July 26,2001).
55. *Id.*
56. *Id.*
57. *Id.*
58. N.D. CENT. CODE § 57-39.2-04.2.
59. *Id.*
60. *Id.*
61. Real de Azua, *supra* note 6, at 511.
62. N.D. CENT. CODE § 57-39.2-04.2.
63. *Id.*
64. *Id.*
65. North Dakota Legislative Branch, *2001 Bills/Resolutions, House Bills*, http://ranch.state.nd.us/LR/01/bill_actions/BA 1222.html (accessed July 26,2001).

1222 on March 16, 2001.[66] On March 26, 2001, Governor John Hoeven signed HB 1222 into law.[67]

The principle purpose of HB 1222 was "to create and enact a new section to chapter 57-02 of the North Dakota Century Code, relating to reduction in taxable valuation of wind turbine electric generators that are centrally assessed property." [68] Under this new section, those wind turbine electric generators "with a nameplate generation capacity of one hundred kilowatts or more" that are completed before January 1, 2011, "must be valued at three percent of assessed value to determine taxable valuation of the property."[69]

Thus, for the purposes of North Dakota property taxes, those wind energy generation facilities that qualify will be assessed at 3 percent of their value as opposed to the rate of 10 percent of value that other North Dakota businesses are taxed.[70] This effectively decreases property taxes for the facilities by 70 percent.[71] The property tax reduction created by HB 1222 applies to those years after December 31, 2000.[72]

C. NORTH DAKOTA HOUSE BILL 1223

Representative Michael Brandenberg also sponsored North Dakota House Bill 1223 (hereinafter HB 1223) and introduced it in the House on January 12, 2001.[73] The House unanimously passed HB 1223 on February 8, 2001.[74] The Senate passed HB 1223 on March 16, 2001 by a margin of 45 to 1.[75] Governor John Hoeven signed the bill into law on March 26, 2001.[76]

HB 1223 was designed to "amend and reenact section 57-38-01.8 of the North Dakota Century Code, relating to application of the income tax credit for geothermal, solar, or wind energy devices."[77] Basically, HB 1223 amends the statute to allow any taxpayer who files a North Dakota income tax return and who leases North Dakota property to claim a credit of 3 percent for 5 years for the cost of a wind, solar, or geothermal device.[78]

Prior to the enactment of HB 1223, the statute only allowed the credit for those who owned property on which a wind, solar, or geothermal device was situated.[79] Thus, HB 1223 appears designed to directly address a problem faced by modern wind generating facilities—the cost of owning all of the land

66. *Id.*
67. *Id.*
68. N.D. CENT. CODE § 57-02-02.
69. *Id.*
70. N.D. CENT. CODE § 57-02-27.4 (2000).
71. *Id.*
72. N.D. CENT. CODE § 57-02-02.
73. North Dakota Legislative Branch, *2001 Bills/Resolutions, House Bills,* http://ranch.state.nd.us/LR/01/bill_actions/BA 1223.html (accessed July 26,2001).
74. *Id.*
75. *Id.*
76. *Id.*
77. N.D. CENT. CODE § 57-38-01.8.
78. *Id.*
79. *Id.*

on which a series of turbines is located.[80] Because the cost of owning all of the land necessary to establish a successful wind energy facility can be prohibitive, it is much more common for facilities to lease the land.[81] Therefore, since the adoption of HB 1223, companies leasing land for wind generating facilities may also claim the credit.[82]

D. ANALYSIS OF THE APPROACH

The recent North Dakota statutory amendments are designed to stimulate investment in wind energy facilities through indirect subsidies in the form of tax incentives. This approach has been used in various states over the years with varying degrees of effectiveness.[83] The California approach of the early 1980s offers a good example of the success that tax incentives can have in encouraging the development of wind energy facilities.[84] Under the approach, California provided an investment tax credit for those investors willing to install wind energy sites in California.[85] This tax incentive taken together with the federal investment tax incentive under PURPA resulted in the installation of 1200 mega watts wind energy generation potential in only four years.[86]

The California wind rush of the early 1980s came to an end, however, because of a number of factors including the limited state of the technology of the time.[87] Many of the machines failed or were unreliable.[88] Nevertheless, the success of the California tax incentives for encouraging investment in wind energy cannot by denied. As stated earlier, wind energy technology has increased dramatically both in terms of reliability and productivity.[89] Therefore, it appears the North Dakota tax incentives may be an effective means of initially stimulating investment in wind energy. In order to be more effective than the California plan of the early 1980s, however, North Dakota must realize that "tax credits will likely produce greater public benefits if they are coupled with other tools that are directed toward the same goal."[90]

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80. BOROWITZ, *supra* note 7, at 151-52.
81. *Id.*
82. N.D. CENT. CODE §57-38-01.8.
83. Real de Azua, *supra* note 6, at 511. "Tax law, including state tax law, has a significant yet mostly unrealized potential to protect and restore the environment." Dernbach, *supra* note 5, at 10971. "Among the many state tax tools available to address climate change, tax credits can and do encourage energy conservation, the use of renewable energy, and carbon sequestration." *Id.* (citation omitted).
84. Thomas Starrs, *Legislative Incentives and Energy Technologies: Government's Role in the Development of the California Wind Energy Industry,* 15 ECOLOGY L.Q., 103, 103-10, 119 (1988).
85. *See* California Energy Commission, *Wind Energy in California: Fast Facts,* http://38.144.192.166/wind/windfacts.html (accessed Oct. 25, 2001).
86. *Id.*
87. Dernbach, *supra* note 5, at 10972. "California's experience with tax credits for wind energy illustrates both the strengths and weaknesses of this tool." *Id.* "Wind technologies were still at relatively early stage of development, and some of these projects would have failed regardless of investor intentions. Because these projects were funded by investors who were simply seeking tax benefits, however, many had no hope of succeeding. The highly visible failure of these wind turbines led to the end of the [California] tax credit." *Id.*
88. Real de Azua, *supra* note 6, at 512.
89. *Id.* at 489.
90. Dernbach, *supra* note 5, at 10972.

Tax incentives are not the only way, however, which states have of encouraging the development of wind energy.[91] Another method, the use of renewable portfolio standards, has been used with success in other states.[92] Under this approach, the state requires that energy producers obtain a minimum percentage of power from renewable energy sources, and this percentage is usually designed to increase over time.[93] Power companies can either produce the required amount of energy themselves or trade for energy credits to meet the requirement.[94] Texas, in particular, has had the most success with this approach.[95] Analysts predict that, by the end of the year, Texas will produce almost as much electricity from the wind as does California, the current national leader in wind energy production.[96] The strength of this approach appears to be that, because companies will have the incentive to meet the requirement at the lowest possible cost, it stimulates competition not only among the utilities, but also among the various forms of renewable energy.[97]

Another method states have used to stimulate the growth of wind energy is requiring states' utilities to internalize the environmental costs associated with power production.[98] In order to utilize this method, lawmakers must quantify and assess monetary values to pollutants.[99] Once these values are taken into account, traditional means of producing electricity, such as fossil fuels, become more expensive; thus, renewable energy, such as wind energy, becomes more competitive in the open market.[100] Minnesota is one state that utilizes this approach.[101] Under the Minnesota statutory scheme, wind generation facilities did not immediately enjoy an increased demand.[102] This scheme gave wind energy technology an incentive to develop in the state, however, and wind energy has recently become competitive.[103]

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91. Real de Azua, *supra* note 6, at 513.

92. *Id.* at 515. "Renewable portfolio standards are attractive for many reasons. They set a legally binding statewide target for the use of renewable energy." Dernbach, *supra* note 5, at 10963. "Finally, and perhaps most fundamentally, portfolio standards create a growing long-term market for renewable energy." *Id.*

93. Real de Azua, *supra* note 6, at 515-16.

94. *Id.* at 516-17.

95. *Id.* at 515. *See* TEX. UTIL. CODE. ANN. § 39.904(b) (Vernon Supp. I 2001).

96. Real de Azua, *supra* note 6, at 515.

97. *See generally*, Dernbach, *supra* note 5, at fn. 332. "If policy makers are interested in relying, to the maximum extent possible, on competitive markets to deliver electric services, but want to ensure that those markets deliver a cleaner, more diverse resource base, then portfolio standards may be the most promising mechanism for achieving policy goals." *Id.* (citations omitted).

98. Tortorella, *supra* note 52, at 1548. "A large body of information indicates that coal pollution is a major cause of 'acid rain', or more correctly, 'acid deposition.' Acid deposition severely damages rivers, forests, and crops." F. Paul Bland, supra note 41, at 360 (citations omitted). "In addition, coal produces a large amount of carbon dioxide, one of the gases widely considered a primary cause of the 'greenhouse effect.'" *Id.* at 361 (citations omitted). "Nuclear power also externalizes substantial risks." *Id.* at 362. "The most significant governmental controversy surrounding nuclear power is the safety of storing nuclear wastes." *Id.*

99. Tortorella, *supra* note 52, at 1549-50.

100. *Id.*

101. *See* MINN. STAT. § 216B.2422 (1993).

102. Real de Azua, *supra* note 6, at 514.

103. *Id.*

V. CONCLUSION

Although the recent power shortages have not directly affected the Great Plains region, they have given us the impetus to reexamine our energy policy. Increased demand for power requires more energy to be produced, and the Great Plains region has the opportunity to meet some of the increased demand through the generation of wind energy. In addition to the economic benefits that the region may reap, wind energy can help to ensure clean air and water for future generations.

The recent amendments enacted by the North Dakota legislature are a step in the right direction. In order to adequately ensure the development and subsistence of wind energy generation facilities in the state, however, a comprehensive scheme should be developed. The Minnesota and Texas approaches are striking examples of the success that comprehensive schemes can have in facilitating the development of wind energy. By establishing renewable portfolio standards, North Dakota would help to create a market for wind energy in a state that has the highest wind energy potential in the nation. Through requiring power companies to be accountable for their environmental costs, North Dakota would ensure an increasing reliance upon renewable energy sources and wind energy in particular. Basically, these approaches allow wind energy to be competitive in the open market, and once wind energy producers have become competitive, the need for subsidy such as the recent North Dakota amendments may disappear or become less important.