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NOTES

THE POTENTIAL FOR PRODUCTION: REGULATING OKLAHOMA'S WIND ESTATE AND ENCOURAGING SUSTAINABLE WIND ENERGY DEVELOPMENT

Kayla J. Cawood*

I. INTRODUCTION

“Land is a unique resource because it is finite in quantity and cannot be moved.”¹ Residents, businesses, and industries all must compete to use this limited resource.² Warm and dry climates, often preferred by residential communities and farmers, have abundant solar and wind-energy potentials as well as oil and gas deposits buried beneath shale formations.³ Competition continues to grow: “the wind energy company wants to use the surface to access [energy] above the surface, . . . the oil

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1. Hannah J. Wiseman, Essay, *Urban Energy*, 40 *FORDHAM URB. L.J.* 1793, 1802 (2013).

2. *Id.* at 1803.

3. *Id.* at 1796, 1803.

or gas operator needs surface area . . . to extract the [energy] below,” and of course, the owner of the surface itself expects to be able to use the property.⁴ When conflicts arise, the law affords different rights to the various estates tied to one piece of land⁵:

[T]he landowner, although his legal relations in respect to oil and gas are not such that he may be said to own the oil and gas that is actually under his land, nevertheless has privileges of taking them and rights that others shall not take them, and that these relations create in him a property interest; that this property interest can be transferred to another in fee or for life.⁶

Mineral estate owners, like surface owners, may convey their ownership as they want.⁷ Whether the wind estate is considered separate (or severable) from the surface varies among states and is addressed in a later section. The purpose of this Note is to discuss how Oklahoma lawmakers can continue to develop law and policy to encourage productive use of all three estates—air, surface, and mineral—in a manner that allows the state to realize its vast potential for producing clean and profitable wind energy.

First, this Note gives an overview of wind energy, how it is produced, and why developing it is beneficial for both Oklahoma and the nation. The next section defines the three land estates and explains how conflicts arise when the estates’ interest holders all vie to use the land’s surface. Next, it reviews Oklahoma’s wind energy development and the current state of its governing law and policy. This Note then concludes by suggesting ways for Oklahoma lawmakers and policymakers to encourage growth in the wind-energy-development sector using zoning laws and various incentives and by approving a proposed transmission-line project.

II. BACKGROUND

To implement the best wind-energy plan, a state should understand the functions and history of wind energy development in the modern marketplace. First, this section discusses the virtues and possible

4. *Id.* at 1804–05.

5. See K.K. DuVivier, *Animal, Vegetable, Mineral-Wind? The Severed Wind Power Rights Conundrum*, 49 WASHBURN L.J. 69, 84–85 (2009).

6. 1A W.L. SUMMERS, *THE LAW OF OIL AND GAS* § 136 (perm. ed. 1954).

7. See DuVivier, *supra* note 5, at 79.

disadvantages of using wind as a renewable energy source. Second, it examines both global and national wind-energy capacity. Finally, it will address Oklahoma's growth potential for wind energy development.

A. *The Virtues of Wind*

To capture the wind, specialized infrastructure is needed—wind farms. Wind energy derives from solar energy.⁸ The sun heats the earth's surface at different rates, creating pressure imbalances in the lower atmosphere; the atmosphere's rebalancing results in wind.⁹ Wind turbines capture the wind's energy and convert it to electricity by turning a generator.¹⁰ To be economically viable, wind energy development requires the wind speed to average “at least 13 mph,”¹¹ primarily because “optimal wind production [occurs at] twenty-five to thirty miles per hour.”¹² The wind turbines themselves are massive; for example, in 2009, the General Electric (GE) 1.5 megawatt (MW) turbine, one of the most common turbines,¹³ stood 262-feet tall and had a rotor radius of 125 feet.¹⁴ And the turbines are growing. Seven years later, GE's base-model turbine stands as tall as “a 33-story building” and “[w]eighs as much as approximately 10 school buses.”¹⁵ Using the 2009 measurements, one study concluded that turbines are ideally situated in rows about 3,000 feet apart (running from north to south), with “buffer zones” of about ten rotor-lengths beyond the outside turbine to prevent obstructing the wind.¹⁶ The optimal spacing

8. See Crystal D. Masterson, Comment, *Wind-Energy Ventures in Indian Country: Fashioning a Functional Paradigm*, 34 AM. INDIAN L. REV. 317, 317–18 (2010).

9. *Id.* at 318.

10. *Id.*

11. Robert P. Wright, *A Primer on Wind Leases (with Form) the More Electricity the Nation Uses, the More Important Windfarms Will Become*, PRAC. REAL EST. L., Sept. 2010, at 9, 12.

12. Masterson, *supra* note 8, at 319.

13. GENERAL ELECTRIC CO., 1.5 MW: A PRODUCT OF ECOIMAGINATION 2 (2009), <http://geosci.uchicago.edu/~moyer/GEOS24705/Readings/GEA14954C15-MW-Broch.pdf> [<https://perma.cc/NE8M-45NG>] (“GE 1.5 MW . . . the most widely used wind turbine in its class”).

14. K.K. DuVivier & Roderick E. Wetsel, *Jousting at Windmills: When Wind Power Development Collides with Oil, Gas, and Mineral Development*, 55 ROCKY MT. MIN. L. INST. 9-1, 9-9 (2009).

15. *1.7-100/103 Wind Turbines*, GE RENEWABLE ENERGY (2016), <https://www.ge.renewableenergy.com/wind-energy/turbines/1-7-100-103.html> [<https://perma.cc/5QG5-3ZNG>].

16. DuVivier & Wetsel, *supra* note 14, at 9-10 to -11.

between the individual GE 1.5 MW turbines was about 1,000 feet.¹⁷ Unsurprisingly, as the turbines get larger, the surface area needed to support a wind farm correspondingly increases. Adding to the surface space requirements, transmission lines, both above and below ground, are used to carry the electricity to its intended destination.¹⁸

Wind power is an important source of clean energy, creating neither greenhouse gas emissions nor hazardous waste.¹⁹ It lacks the adverse environmental impacts of other sources, such as air pollution (coal), water pollution (ethanol), carbon dioxide emissions (oil, methane, coal, and ethanol), and waste disposal (coal and nuclear).²⁰ Unlike other energy-generation techniques, such as coal, nuclear, and natural gas, that use the Rankine steam turbine cycle,²¹ capturing the wind does not need water to spin a generator.²²

Certain regions have a stronger and more reliable wind flow, causing most wind farms in the United States to be located in the Midwest and

17. *Id.* at 9-10.

18. *Id.*; see also Masterson, *supra* note 8, at 318.

19. See K.K. DuVivier, *Rural Wind Windfalls*, 23 KAN. J.L. & PUB. POL'Y, 401, 409-10 (2014).

20. See DuVivier, *supra* note 5, at 69-70. See generally Joe Wertz, *Oklahoma is No. 2 in Oil Spills*, NPR: STATEIMPACT OKLA. (July 15, 2013, 1:24 PM), <https://stateimpact.npr.org/oklahoma/2013/07/15/oklahoma-is-no-2-in-oil-spills/> [<http://perma.cc/Q4AQ-VUK2>] (“There were 951 oil spills reported in Oklahoma last year, more than every other major energy state . . . except North Dakota . . .”); Mariano Castillo, *Pollution Flowing Faster than Facts in EPA Spill*, CNN (Aug. 10, 2015, 10:20 PM), <http://www.cnn.com/2015/08/10/us/colorado-epa-mine-river-spill/> [<https://perma.cc/CUD6-LKWF>] (discussing the Environmental Protection Agency’s accidental polluting of the Animas River while cleaning up an abandoned coal mine); John Flesher, *Drilling Boom Means More Harmful Waste Spills*, ASSOCIATED PRESS (Sept. 9, 2015, 12:45 AM), <http://bigstory.ap.org/article/39786bbf509e412a9feb9b58a6534a36/drilling-boom-brings-rising-number-harmful-waste-spills> [<http://perma.cc/EB3U-DK46>] (describing the frequency and harmful effects of oilfield wastewater spills and mentioning that those hardest hit are the surface owners “who must allow drilling access to their land if they don’t own the mineral rights”).

21. DuVivier, *supra* note 19, at 407 (“Most all other electricity sources . . . employ thermal energy through the Rankine steam turbine cycle.”). The Rankine cycle is defined as “the thermodynamic cycle in steam engines by which water is pumped into a boiler at one end and the steam is condensed at the other.” *Rankine cycle*, COLLINS ENG. DICTIONARY, <http://www.collinsdictionary.com/dictionary/english/rankine-cycle> [<http://perma.cc/Z7TX-7BSP>].

22. See DuVivier, *supra* note 19, at 407; see also Ronald H. Rosenberg, *Diversifying America’s Energy Future: The Future of Renewable Wind Power*, 26 VA. ENVTL. L.J. 505, 524 (2008) (“Wind power does not use water because it employs kinetic, not thermal, energy to spin the turbines in its generators.”).

“along mountain ridges and coastlines.”²³ Domestically produced wind energy brings our country closer to energy independence from “unstable and undemocratic nations.”²⁴ Besides being locally sourced, wind farms provide an energy-generating source that is “available 99% of the time to generate electricity,” one of the best rates of any production method.²⁵ The high reliability results from the operator’s ability to service wind turbines individually, precluding the need to shut down the entire wind farm.²⁶

1. The Pros of Wind Power in Rural Oklahoma

In addition to being a profitable enterprise for investors, wind farms also benefit surrounding communities and should be utilized in Oklahoma.²⁷ Because of the need for large buffer zones and strong winds, most wind farms are located in rural areas that could really use an “economic boost.”²⁸ With a total in-state investment of \$9.6 billion,²⁹ wind energy can improve the economic vitality of many rural Oklahoma communities and may possibly “be the least repugnant means of doing so,” increasing economic activity without sacrificing a community’s “ecological integrity.”³⁰ Wind development will allow the long-term status of rural farming and ranching practices to remain largely intact,³¹ which many prefer over other more disruptive means of development, such as “widespread urbanization or the construction of air-polluting factories.”³²

Besides serving as a general economic boost, wind development directly benefits Oklahoma landowners and workers.³³ Developers pay

23. Wright, *supra* note 11, at 12.

24. Masterson, *supra* note 8, at 323 (quoting Kelsey Jae Nunez, *Gridlock on the Road to Renewable Energy Development: A Discussion About the Opportunities & Risks Presented by the Modernization Requirements of the Electricity Transmission Network*, 1 J. BUS. ENTREPRENEURSHIP & L. 137, 145 (2007)).

25. Christine Real de Azua, *The Future of Wind Energy*, 14 TUL. ENVTL. L.J. 485, 489 (2001).

26. *See id.*

27. *See* Masterson, *supra* note 8, at 324; *Oklahoma Wind Energy*, AM. WIND ENERGY ASS’N [hereinafter *Oklahoma Wind Energy*], <http://awea.files.cms-plus.com/FileDownloads/pdfs/Oklahoma.pdf> [<http://perma.cc/52KD-MFS3>].

28. Masterson, *supra* note 8, at 324.

29. *Oklahoma Wind Energy*, *supra* note 27.

30. Masterson, *supra* note 8, at 399.

31. *See id.* at 325 (describing the various uses landowners retain while leasing property for wind farms).

32. *Id.* at 339.

33. *See id.* at 324–25 (explaining the multiple economic benefits wind farms “inject”

royalties to lease wind estates from landowners, and after construction is complete, farming and ranching activities on the land can resume.³⁴ Supplementary income for farmers can make a significant difference during periods of drought.³⁵ One Oklahoma farmer stated, “We had no grass, we had no wheat, water was getting tough. So, yes, income from wind generation did help fill in a gap to help us get to this point today.”³⁶ Additionally, construction and operation of wind developments increase revenue from property and sales taxes, along with the number of jobs in rural areas.³⁷ Jobs are created at a “rate of 4.8 job-years’ for every megawatt of wind power installed” and about ten permanent jobs per 100 MW of capacity.³⁸ Job growth and landowner revenue in rural areas can “stabiliz[e] rural populations in areas currently losing population” and attract other businesses to the area.³⁹

2. The Cons of Wind Power

Even though it is a clean energy resource, wind energy development exacts some ecological costs. The U.S. Fish and Wildlife Service “estimates that wind turbines may kill a half a million birds a year.”⁴⁰ While this number is concerning, more birds are killed annually by each of these hazards: “building[s], power line[s], car[s], house cat[s], tree[s], and cell phone tower[s].”⁴¹ Also, engineers have made progress in

into rural areas).

34. *See id.* at 325.

35. *See* Joe Wertz, *How a Wind Farm is Helping Save the Family Farm in Western Oklahoma*, NPR: STATEIMPACT OKLA. (Oct. 9, 2014, 9:33 AM), <https://stateimpact.npr.org/oklahoma/2014/10/09/how-a-wind-farm-is-helping-save-the-family-farm-in-western-oklahoma/> [http://perma.cc/9RBQ-RVGE].

36. *Id.* (statement of landowner and farmer Monte Tucker).

37. Lisa Chavarria, *Wind Power: Prospective Issues*, 68 TEX. B.J. 832, 834 (2005).

38. Masterson, *supra* note 8, at 324 (quoting Ronald H. Rosenberg, *Making Renewable Energy a Reality—Finding Ways to Site Wind Power Facilities*, 32 WM. & MARY ENVTL. L. & POL’Y REV. 635, 664 (2008)).

39. *Id.* at 325.

40. *Wildlife Concerns Associated with Wind Energy Development*, U.S. FISH & WILDLIFE SERV. [hereinafter *Wildlife Concerns*], <http://www.fws.gov/midwest/wind/wildlifeimpacts/index.html> [http://perma.cc/B958-Y58Z]; *see also* Sally A. Paez, Student Article, *Preventing the Extinction of Candidate Species: The Lesser Prairie-Chicken in New Mexico*, 49 NAT. RESOURCES J. 525, 535, 539–40 (2009) (describing the negative impact wind turbines cause to prairie chickens’ habitat).

41. Samuel J. Panarella, *For the Birds: Wind Energy, Dead Eagles, and Unwelcome Surprises*, 20 HASTINGS W.-N.W. J. ENVTL. L. & POL’Y 3, 5 (2014); *see also* AM. WIND

increasing turbine safety with specially designed blades to prevent deadly bird collisions.⁴² Wind developments can also have other drawbacks for avian species, fragmenting “large areas of continuous suitable habitat” and creating “habitat avoidance zone[s].”⁴³ However, one must remember that these costs “are completely dwarfed by the looming catastrophe of global warming.”⁴⁴

A wind farm uses substantially more land “than [a] traditional oil and gas development,”⁴⁵ limiting its possible location, and leading to possible land-use conflicts between the owners of the wind, surface, and mineral estates.⁴⁶ Neighbors of large wind developments also raise many complaints against the turning blades.⁴⁷ Aesthetics, land-use interference, noise,⁴⁸ shadow flicker, and a perceived lack of safety are common concerns.⁴⁹ Each of these concerns is addressed in the following sections of this Note.

B. Growing Wind-Energy Capacity

Wind-energy capacity is increasing “at a gold-rush pace” both in the

WILDLIFE INST., WIND TURBINE INTERACTIONS WITH WILDLIFE AND THEIR HABITATS: A SUMMARY OF RESEARCH RESULTS AND PRIORITY QUESTIONS 8 (2016), <https://awwi.org/wp-content/uploads/2016/07/AWWI-Wind-Wildlife-Interactions-Summary-June-2016.pdf> [<https://perma.cc/85GB-3E3M>].

42. See Kalyani Robbins, *Responsible, Renewable, and Redesigned: How the Renewable Energy Movement Can Make Peace with the Endangered Species Act*, 15 MINN. J.L. SCI. & TECH. 555, 573 (2014) (explaining that hidden blades and sail turbines are beginning to enter the market).

43. See Paez, *supra* note 40, at 525, 535, 539–40.

44. Patricia E. Salkin & Ashira Pelman Ostrow, *Cooperative Federalism and Wind: A New Framework for Achieving Sustainability*, 37 HOFSTRA L. REV. 1049, 1076 (2009) (quoting Robert D. Kahn, *Sitting Struggles: The Unique Challenge of Permitting Renewable Energy Power Plants*, ELECTRICITY J., Mar. 2000, at 21, 31). While the ethical issues surrounding the impacts of wind farms are important issues, how the EPA and other federal agencies address these ecological concerns is beyond the scope of this Note.

45. DuVivier & Wetsel, *supra* note 14, at 9–10. Factors contributing to the greater surface-area demands are “(1) turbine spacing, (2) buffer zones, (3) other surface uses such as for roads, substations, operations and maintenance facilities, and laydown yards, and (4) overhead and underground transmission, collection, and distribution lines.” *Id.*

46. See Wiseman, *supra* note 1, at 1803–04.

47. Ernest Smith, *Wind Energy: Siting Controversies and Rights in Wind*, 1 ENVTL. & ENERGY L. & POL’Y J. 281, 290–93 (2007) (discussing possible nuisance lawsuits by wind farm opponents).

48. See *id.* at 290–91.

49. See Salkin & Ostrow, *supra* note 44, at 1071–72.

United States and around the globe.⁵⁰ In 2015, “[w]ind power represented the largest source of U.S. electric-generating capacity additions” at 41% of the growth, its second-highest level of growth ever.⁵¹ And throughout the preceding decade, “wind power represented 31% of all U.S. capacity additions.”⁵² At its highest growth level, wind accounted for 43% of all new capacity in 2012, “overtaking natural gas-fired generation as the leading source of new capacity.”⁵³ The American Wind Energy Association (AWEA) reported that developers installed 1,725 MW of capacity during the first three quarters of 2016, bringing the United States’ operational capacity to 75,716 MW with more than 20,000 MW “under construction or in advanced development” as of October 20, 2016.⁵⁴

Increasing energy-production capacity has the added benefit of lowering overall wind costs. In fact, recently, the price of wind has become competitive with traditional nonrenewable fuel sources, with some utility companies “signing contracts, known as power purchase agreements, for solar or wind at prices below that of natural gas.”⁵⁵ Between 2013 and 2015, these power purchase agreements totaled more than 13,000 MW of

50. Robbins, *supra* note 42, at 568 (“The U.S. wind industry is developing at a gold-rush pace, having added over thirty-five percent of all new generating capacity over the past four years, second only to natural gas.”); *see also* RYAN WISER & MARK BOLINGER, U.S. DEP’T OF ENERGY, 2015 WIND TECHNOLOGIES MARKET REPORT 1 (2016), <http://energy.gov/sites/prod/files/2016/08/f33/2015-Wind-Technologies-Market-Report-08162016.pdf> [<https://perma.cc/3UGW-D8GY>] (describing the “rapid clip” of wind-power-capacity additions in the United States); *id.* at 5–6 & tbl.1 (discussing global wind power additions in 2015 and noting that while the United States is second in overall additions, it is “a distant second to China”).

51. WISER & BOLINGER, *supra* note 50, at 4.

52. *Id.*

53. RYAN WISER & MARK BOLINGER, U.S. DEP’T OF ENERGY, 2012 WIND TECHNOLOGIES MARKET REPORT 5 (2013), http://energy.gov/sites/prod/files/2015/12/f28/2012_wind_technologies_market_report.pdf [<https://perma.cc/RT53-8GFX>]; Robbins, *supra* note 42, at 568 (“The U.S. wind industry is developing at a gold-rush pace, having added over thirty-five percent of all new generating capacity over the past four years, second only to natural gas.”).

54. AM. WIND ENERGY ASS’N, U.S. WIND INDUSTRY THIRD QUARTER 2016 MARKET REPORT 1 (Oct. 20, 2016) [hereinafter 2016 MARKET REPORT], <http://awea.files.cms-plus.com/FileDownloads/pdfs/3Q2016%20AWEA%20Market%20Report%20Public%20Version.pdf> [<https://perma.cc/K6MW-SL7D>] (AWEA public version).

55. Diane Cardwell, *Solar and Wind Energy Start to Win on Price vs. Conventional Fuels*, N.Y. TIMES (Nov. 23, 2014), http://www.nytimes.com/2014/11/24/business/energy-environment/solar-and-wind-energy-start-to-win-on-price-vs-conventional-fuels.html?_r=2 [<http://perma.cc/UX3U-95G7>] (discussing the lowered costs of wind and solar energy).

wind energy,⁵⁶ and energy contracts are quickly gaining in popularity. A 2016 year-to-date report shows a thirty-nine percent increase over the 2015 activity.⁵⁷ Wind power has the added benefit of being virtually limitless, and our country enjoys significant “reserves” over the continental United States that will allow for further growth.⁵⁸ As Oklahoma businessman T. Boone Pickens put it, the “United States is the Saudi Arabia of wind power.”⁵⁹

C. Oklahoma’s Wind Potential

According to the AWEA’s Third Quarter 2016 Market Report, Oklahoma was the fourth-largest producer of wind energy in the United States and “on pace to become the third . . . ranked state[] in installed capacity by the end of 2016.”⁶⁰ As of the end of 2015, Oklahoma had 2,915 wind turbines, the fourth-highest total in the nation,⁶¹ and an “installed wind capacity” in excess of 5,400 MW.⁶² Two of the states with greater installed wind capacity are Texas and California.⁶³ Given the size of Texas and California, compared to Oklahoma, this ranking is impressive and speaks volumes about the potential wind energy flowing over Oklahoma. The AWEA reported that Oklahoma wind developments supported between 7,001 and 8,000 in-state jobs (both direct and indirect) in 2015 and paid over \$10 million for land leases.⁶⁴ Oklahoma also boasts “the second lowest wind power price in the [United States].”⁶⁵ And the

56. AM. WIND ENERGY ASS’N, U.S. WIND INDUSTRY THIRD QUARTER 2015 MARKET REPORT 3 (Oct. 22, 2015), <http://awea.files.cms-plus.com/FileDownloads/pdfs/3Q2015%20AWEA%20Market%20Report%20Public%20Version.pdf> [<http://perma.cc/JP72-AJBF>] (AWEA public version).

57. 2016 MARKET REPORT, *supra* note 54, at 3.

58. *See* DuVivier, *supra* note 5, at 70–71.

59. *Id.* (quoting *The Plan*, PICKENSPLAN.COM (July 17, 2008), https://web.archive.org/web/20081221115951/http://www.pickensplan.com/pdf/ThePlan_0710_01.pdf [<https://perma.cc/J4LY-58J5>]).

60. 2016 MARKET REPORT, *supra* note 54, at 7.

61. *Id.* (ranking wind power capacity installations); *see also* *Oklahoma Wind Energy*, *supra* note 27; Paul Monies, *Oklahoma Ranks 4th Nationally for Wind Power Generation*, TULSA WORLD (Jan. 30, 2015, 12:00 AM), http://www.tulsaworld.com/business/energy/oklahoma-ranks-th-nationally-for-wind-power-generation/article_e58cf3fa-9c7a-557f-a878-1947d97c1a59.html [<http://perma.cc/U6QQ-YYHB>].

62. *Oklahoma Wind Energy*, *supra* note 27.

63. Monies, *supra* note 61; *see also* 2016 MARKET REPORT, *supra* note 54, at 7.

64. *Oklahoma Wind Energy*, *supra* note 27.

65. Joy Hampton, *Keeping State Beautiful*, NORMAN TRANSCRIPT (Feb. 4, 2015), <http://>

potential for growth is astounding; “The Oak Ridge National Laboratory estimates that Oklahoma has 10 times the wind potential necessary to satisfy all electric energy demand in the Southwest Power Pool.”⁶⁶

III. THE NATURE OF PROPERTY CONFLICTS: THE ISSUES FACING OKLAHOMA WIND DEVELOPMENT

This section addresses three of the “sticks” located within the “bundle of rights” we associate with property ownership: surface rights, mineral rights, and wind rights.⁶⁷ The interactions of these three ownership rights can cause tension when their best interests do not align.⁶⁸ Each state has chosen to address the tension in a slightly different manner.⁶⁹ First, this section discusses surface rights in Oklahoma, nuisance claims against wind developers, and how Oklahoma will likely resolve nuisance issues. Next, this section discusses mineral rights and their dominance over the other estates. Then this section addresses wind rights and severance, including the pros and cons of severance, how other states address the issue, and the implications of Oklahoma’s approach. Finally, this section addresses the development of wind energy law within the judicial system.

A. Oklahoma’s Surface-Rights Conflicts

Most real-property conflicts begin with a parcel of land. Oklahoma defines land as “the solid material of the earth, whatever may be the ingredients of which it is composed, whether soil, rock or other substance, and includes any pore space.”⁷⁰ Land is considered property that may be

www.normantranscript.com/news/oklahoma/keeping-state-beautiful/article_56946938-f9cf-5cef-bd6e-9a470997e25f.html [http://perma.cc/W6QN-HKL3].

66. OFFICE OF GOVERNOR, OKLAHOMA FIRST ENERGY PLAN 15 (2011), <https://www.ok.gov/governor/documents/Governor%20Fallin's%20Energy%20Plan%20-%20Jan%202012.pdf> [https://perma.cc/5WG3-JKF4].

67. Jane B. Baron, *Rescuing the Bundle-of-Rights Metaphor in Property Law*, 82 U. CIN. L. REV. 57, 58–59 (2013).

68. See, e.g., Joe Wertz, *Oklahoma Wind Power Companies Run into Headwinds*, NPR, (Aug. 18, 2014, 4:16 PM), <http://www.npr.org/2014/08/18/340399916/oklahoma-wind-power-companies-run-into-headwinds> [http://perma.cc/PEC3-TY4M] (discussing ecological, tribal, and oil-related opposition to wind developers in Osage County, Oklahoma).

69. See Alan J. Alexander, Note, *The Texas Wind Estate: Wind as a Natural Resource and a Severable Property Interest*, 44 U. MICH. J.L. REFORM 429, 451–54 (2011) (discussing various states’ treatment of wind as a property interest).

70. OKLA. STAT. tit. 60, § 6(A) (2011).

owned,⁷¹ and ownership is defined as “the right of one or more persons to possess and use it to the exclusion of others.”⁷² Property rights derive from the “notion[] that property consists not of things, but of legal relationships.”⁷³ Furthermore, these relationships are not directed *toward* objects, but rather *among* people.⁷⁴

Not everyone agrees that more wind development is a good idea. Landowners who hold their right to possession and exclusion in high regard can have conflicting views on the increase of wind development in Oklahoma.⁷⁵ Some Oklahomans oppose the growing expansion of wind development.⁷⁶ For example, certain rural Oklahomans believe that turbines on the horizon spoil the view and fragment the prairie.⁷⁷ A turbine-siting expert explained, “Americans put a high value on wilderness and open space. Sparks fly when lands viewed as public viewscapes . . . appear threatened.”⁷⁸ Because many rural roads are unable to support the various weights of the necessary equipment, constructing wind farms “can cause significant road damage, result in a loss of productive crop land, and cause substantial erosion and/or soil compaction.”⁷⁹

As seen in the recent anticipatory-nuisance claim in the United States District Court for the Western District of Oklahoma, some Oklahomans are concerned about “potential adverse health effects from noise . . . associated with the turbines.”⁸⁰ While the complaint was dismissed on other grounds,⁸¹ the court concluded that the plaintiffs “adequately stated

71. See OKLA. STAT. tit. 60, § 2 (2011) (“There may be ownership of all inanimate things . . .”).

72. OKLA. STAT. tit. 60, § 1 (2011).

73. See Baron, *supra* note 67, at 62–63 (discussing Wesley Newcomb Hohfeld’s contribution to the “bundle-of-rights metaphor”). See generally Wesley Newcomb Hohfeld, *Some Fundamental Legal Conceptions As Applied in Judicial Reasoning* (pts. 1 & 2), 23 YALE L.J. 16 (1913), 26 YALE L.J. 710 (1917) (pioneering the theory of property as legal relationships).

74. Baron, *supra* note 67, at 62.

75. See Wertz, *supra* note 68.

76. *Id.*

77. *Id.*

78. Salkin & Ostrow, *supra* note 44, at 1071 (quoting Kahn, *supra* note 44, at 23).

79. *Id.* at 1075.

80. Walker v. Apex Wind Const., L.L.C., No. CIV-14-914-D, 2015 WL 348778, at *1, *4 (W.D. Okla. Jan. 26, 2015).

81. *Id.* at *7 (granting defendant’s motion for summary judgment because the complaint did not “allege facts to plausibly support associational standing,” but giving the plaintiffs the option to amend the complaint).

a plausible claim for anticipatory nuisance.”⁸² This in spite of one scholar’s assertion that “a wind turbine located 250 meters from a residence is no noisier than a kitchen refrigerator.”⁸³ People’s tendency to consider wind turbines “noisy” stems from older models of the 1980s.⁸⁴ Today, the amount of sound generated by the turning blades is “partly masked” by the noise of “the wind itself.”⁸⁵

Regardless of whether wind turbines inflict actual damage, a lack of zoning regulations in an area could give rise to nuisance cases.⁸⁶ If a wind farm is located in the wrong place, landowners may have the ability to bring nuisance and damage claims against a wind developer.⁸⁷ In an oil-and-gas nuisance case, the Oklahoma Supreme Court has stated that “[t]he fact that a person or corporation has authority to do certain acts does not give the right to do such acts in a way constituting an unnecessary interference with the rights of others.”⁸⁸ To raise a successful nuisance claim, the plaintiff must show an act or omission that either “[a]nnoys, injures or endangers the comfort, repose, health, or safety of others; or . . . [u]nlawfully interferes with, obstructs or tends to obstruct, or renders dangerous for passage” any waterway or thoroughfare, or that endangers life or use of property.⁸⁹

Because wind-farm nuisance is a new issue, there is no applicable Oklahoma case law; but it is reasonable to assume that Oklahoma will apply wind-related nuisance rules in a manner similar to Texas, which shares a body of similar oil-and-gas nuisance law.⁹⁰ Texas has rejected nuisance claims based on “dust and noise from . . . construction,”⁹¹

82. *Id.* at *4.

83. Masterson, *supra* note 8, at 340 (quoting Avi Brisman, *The Aesthetics of Wind Energy Systems*, 13 N.Y.U. ENVTL. L.J. 1, 75 (2005)).

84. Salkin & Ostrow, *supra* note 44, at 1073.

85. Masterson, *supra* note 8, at 340 (first quoting Brisman, *supra* note 83, at 76).

86. *Cf.* Smith, *supra* note 47, at 295–96 (discussing nuisance litigation outcomes for wind farms and single wind turbines).

87. *See id.*

88. *Briscoe v. Harper Oil Co.*, 1985 OK 43, ¶ 10, 702 P.2d 33, 36.

89. OKLA. STAT. tit. 50, § 1 (2011).

90. *Cf.* 1 WILLIAM H. RODGERS, JR. & ELIZABETH BURLESON, RODGERS’ ENVIRONMENTAL LAW § 2:18, Westlaw (database updated Dec. 2015) (“Escaping salt water from oil operations in Texas and Oklahoma is treated as a nuisance” (footnotes omitted)); 4 NANCY SAINT-PAUL, SUMMERS OIL AND GAS § 42:13 (3d ed. 2009) (discussing oil-and-gas nuisance law and citing cases from Texas and Oklahoma).

91. *See* Smith, *supra* note 47, at 291 (explaining that temporary construction activities with “clearly disruptive impacts . . . , such as dust and noise” fail to establish successful nuisance claims).

aesthetics,⁹² emotional reaction to an obstructed view,⁹³ and the “substantial[] interfere[nce] with [the] enjoyment of [private] homes.”⁹⁴ Texas has, however, granted damages for nuisance when neighboring “air conditioning equipment” caused constant noise.⁹⁵

Many nuisance cases assert damages for wind farms lowering property values.⁹⁶ However, the impact of wind farms on property value is debatable.⁹⁷ A West Virginia case allowed landowners to seek nuisance damages based on their “injury to the use and enjoyment of their properties as a result of constant loud noise from the wind turbines, the turbines’ unsightliness, and reduction in the appellants’ property values.”⁹⁸ The Supreme Court of Nevada allowed landowners to assert nuisance claims for diminished property value when combined with allegations of aesthetics, “noise, [and] shadow flicker.”⁹⁹ While outside of Oklahoma some plaintiffs have won damages for decreased property values,¹⁰⁰ most studies indicate that there may not actually be any impact on values of property near wind farms.¹⁰¹

As a general rule, if landowners bring nuisance claims, the court will consider “whether the defendant’s activity is appropriate for the location; the degree of harm to the plaintiff; the benefit to the defendant of the complained-of activities; the alternatives available to the defendant; the

92. *Id.* at 290.

93. *Rankin v. FPL Energy, L.L.C.*, 266 S.W.3d 506, 512 (Tex. App. 2008) (“[N]o case or other authority specifically gives a nuisance-in-fact cause of action based on fear, apprehension, or other emotional reaction . . .”).

94. *Smith*, *supra* note 47, at 295 (explaining that Texas courts often rule in favor of wind farms in nuisance claims).

95. *See Estancias Dallas Corp. v. Schultz*, 500 S.W.2d 217, 218, 222 (Tex. Civ. App. 1973).

96. *See, e.g., Sowers v. Forest Hills Subdivision*, 294 P.3d 427, 430 (Nev. 2013); *Burch v. Nedpower Mount Storm, L.L.C.*, 647 S.E.2d 879, 892 (W. Va. 2007).

97. *See* BEN HOEN ET AL., ERNEST ORLANDO LAWRENCE BERKELEY NAT’L LAB., A SPATIAL HEDONIC ANALYSIS OF THE EFFECTS OF WIND ENERGY FACILITIES ON THE SURROUNDING PROPERTY VALUES IN THE UNITED STATES 37–38 (2013), <https://emp.lbl.gov/sites/all/files/lbnl-6362e.pdf> [<http://perma.cc/N5NW-M3CW>] (finding little-to-no impact on property values).

98. *Burch*, 647 S.E.2d at 893.

99. *Sowers*, 294 P.3d at 430 (“[A]esthetics of a wind turbine alone are not grounds for finding a nuisance. However, we conclude that a nuisance in fact may be found when the aesthetics are combined with other factors, such as noise, shadow flicker, and diminution in property value.”).

100. *Id.* at 434 (affirming the permanent injunction).

101. *See, e.g., HOEN ET AL., supra* note 97, at 37–38.

plaintiff's ability to avoid the harm; and the social utility of the defendant's conduct."¹⁰² The landowner must be prepared to show the wind farm's harm will outweigh its benefits, which will be difficult when the Oklahoma Legislature has concluded that:

1. Oklahoma's wind energy resources are an important asset for the continued economic growth of the state and for the provision of clean and renewable power to both the people of the state and the nation as a whole;
2. Promotion of the development of wind energy resources is important to the economic growth of the state¹⁰³

As these legislative findings show, states such as Oklahoma and Texas have traditionally favored "all aspects of the energy industry" when they conflict with surface owners.¹⁰⁴ Many laws offer little recourse to landowners who claim interference with enjoyment of their property when the developer is acting properly, "regardless of the severity and duration of the disruptions caused to neighboring landowners,"¹⁰⁵ because "abatement of a lawful place of business is a harsh remedy."¹⁰⁶

B. Oklahoma's Mineral Rights Conflicts

Historically, mineral rights have long been severed from the surface estate.¹⁰⁷ While not novel, the United States' tradition of severed mineral

102. Smith, *supra* note 47, at 292.

103. OKLA. STAT. tit. 17, § 160.12 (2011).

104. Smith, *supra* note 47, at 291–92 (questioning whether nuisance claims would prevail in states that favor the "energy industry"); *What Oil and Natural Gas Mean to Big-Energy Oklahoma*, NPR: STATEIMPACT OKLA., <https://stateimpact.npr.org/oklahoma/tag/energy-industry/> [<https://perma.cc/4QT6-Y38W>].

105. Smith, *supra* note 47, at 291–92.

106. *Storey v. Cent. Hide & Rendering Co.*, 226 S.W.2d 615, 618 (Tex. 1950).

107. See DuVivier, *supra* note 5, at 77–80 ("While the Greek and Roman systems allowed prospectors to retain a portion of the fruits of their efforts, the concept of granting an entirely separate estate below the surface seems to have originated in Western Europe in the area that now encompasses modern Germany."); John C. Lacy, *Going with the Current: The Genesis of the Mineral Laws of the United States*, 41 ROCKY MT. MIN. L. INST. 10-1, at 10-10 to -11 (1995) (discussing the origins of the separate mineral estate in twelfth-century Germany); cf. DuVivier, *supra* note 5, at 79–80 (discussing the Spanish, French, and English approaches where, unlike the German system, the sovereign "retained ownership of mineral rights," or at least the "precious metals").

and surface estates is traceable to the 1848 California Gold Rush.¹⁰⁸ The practice was more economically efficient¹⁰⁹ and also reflected a common belief that the coveted minerals were too far below the surface for surface owners to exploit on their own.¹¹⁰

In Oklahoma, the surface estate is servient to the severed mineral estate.¹¹¹ Oil and gas developers do not need permission to enter land and may do so “even over the surface owner’s objection.”¹¹² However, the dominant mineral estate owners are only “entitled to use so much of the surface as is reasonably necessary for the exploration and development of the mineral estate.”¹¹³ Because Oklahoma oil and gas developers are subject to the Surface Damage Act,¹¹⁴ damages are owed “when an oil and gas owner interferes with a surface owner’s interest.”¹¹⁵ The Act also

108. Cf. GREGORY YALE, LEGAL TITLES TO MINING CLAIMS AND WATER RIGHTS IN CALIFORNIA, UNDER THE MINING LAW OF CONGRESS, OF JULY, 1866, at 25–29 (San Francisco, A. Roman & Co. 1867) (discussing the case *United States v. Castillero*, 67 U.S. (2 Black) 17 (1863), which involved a dispute over title to a mine on land acquired during the California Gold Rush); *Castillero*, 67 U.S. (2 Black) at 158, 166–68 (discussing whether mineral rights are distinct from surface rights, as in Mexican law, and addressing the issue of whether the United States Land Commission had jurisdiction over a mine under the land); ROSSITER W. RAYMOND, MINERAL RESOURCES OF THE STATES AND TERRITORIES, H.R. EXEC. DOC. NO. 40-54, at 218 (1869) (advising the House of Representatives on mining policy fourteen years after the California Gold Rush). Commissioner Raymond recommended the following approach to mineral severance:

Although history abundantly shows that mining flourishes best when the property in minerals is distinguished from the ownership of the soil, it seems to me good policy for the United States, in selling the mines, to sell also the surface. In most cases the land will never be taken up for agricultural purposes, and if the miner does not buy it no one will. I do not mean that the ownership of minerals shall go invariably with the soil, but that, where the United States has both for sale, both should be sold to the same party, who may afterwards dispose of either as he likes.

Id.

109. See DuVivier, *supra* note 5, at 82.

110. *Id.* at 81 (“[T]he severed minerals are so far below the surface that the surface owner normally would not want, or be skilled enough, to exploit them.”).

111. David R. Green, Comment, *Earth and Wind Industries Playing with Fire: The Concurrent Rights of Wind Farm Operators, Oil and Gas Developers, and Landowners in Kansas*, 61 U. KAN. L. REV. 1089, 1106 (2013).

112. Wiseman, *supra* note 1, at 1804.

113. *Roye Realty & Developing, Inc. v. Watson*, 1990 OK CIV APP 21, ¶ 11, 791 P.2d 821, 824.

114. Surface Damages Act, OKLA. STAT. tit. 52, §§ 318.2–.9 (2011 & Supp. I 2015).

115. Chantel James, Comment, *Windustry and the Accommodation Doctrine: Should Oklahoma Follow in the Steps of the Lone Star State?*, 67 OKLA. L. REV. 901, 901 (2015)

includes other protections; for example, Oklahoma law requires the oil and gas developer and the landowner to negotiate damage payments before drilling begins.¹¹⁶ While the Surface Damages Act provides important protections to surface owners for on-site oil and gas operations, if the wind is recognized as a separate estate, it is likely that new legislation will be required to apply the Act or an accommodation doctrine to wind operations as well.¹¹⁷

C. *The Wind Estate and Severance*

Some states allow the wind estate to be severed from the surface estate, and some do not.¹¹⁸ Allowing the wind estate to be owned separate from the surface will cause wind to be viewed as a resource to be exploited above the land, much as minerals are exploited beneath it.¹¹⁹ Similarly, Texas has realized the value of holding different elements of a land estate separate, “such as limestone, sand, and gravel.”¹²⁰

When states choose to sever the wind estate, they create commodity markets that place a higher value on the wind estate than the land.¹²¹ By creating a severed market, developers are more likely to develop land associated with a wind-estate lease than if they had to buy the land outright.¹²² This market would provide rural landowners with a one-time payment and would place the wind estate in the hands of those most likely

(describing the “Surface Damages Act [as] merely a liability rule requiring payment of damages when an oil and gas owner interferes with a surface owner’s interests”). James argued that, in addition to the Surface Damages Act, Oklahoma should follow Texas’s lead and adopt the “accommodation doctrine,” which provides that if the mineral lessee uses surface area beyond what is reasonably necessary and fails to reasonably accommodate the surface owner’s existing use, the lessee may owe damages to the surface owner. *Id.* at 901–05.

116. OKLA. STAT. tit. 52, § 318.5(A) (2011).

117. See Smith, *supra* note 47, at 315–16 (explaining the accommodation doctrine and its possible application to wind developers); cf. OKLA. STAT. tit. 52, § 318.2(1) (2011) (defining “operator”—the only party the Surface Damages Act regulates—as a person “engaged in drilling or preparing to drill for oil or gas”).

118. See Alexander, *supra* note 69, at 451–52 (explaining various state courts’ reactions to the issue of severability of wind interests).

119. See *id.* at 440.

120. Smith, *supra* note 47, at 306.

121. Cf. Alexander, *supra* note 69, at 454 (“[T]he current lack of legislation puts landowners at a competitive disadvantage in trying to negotiate complicated long-term lease arrangements with wind energy developers.”).

122. See *id.*

to efficiently develop the resource.¹²³ When conflicts arise between the estates, each party in a severed-interest state will be able to engage in private negotiations; and if the parties do not reach an agreement, then at least some states enforce a form of accommodation doctrine similar to that used in mineral-surface relations.¹²⁴

As mentioned above, some states have already chosen to sever the wind estate. For example, the California Court of Appeals held in 1997 that the wind estate is severable and “one may have a right to use windpower rights without owning any interest in the land.”¹²⁵ New Mexico severed the wind estate¹²⁶ and created the Renewable Energy Transmission Authority (RETA) composed of the state treasurer and five appointees with public-utility and renewable-energy expertise.¹²⁷ The RETA has the power to buy, sell, and lease land; enter into partnerships; issue bonds; and even exercise eminent domain in order to encourage development of wind energy within the state.¹²⁸ South Dakota and Minnesota also adopted “wind easements” that serve as pseudo-severance because “it generally prohibits a landowner from erecting a structure or engaging in any activity that might obstruct the free flow of wind.”¹²⁹

Severance of the wind estate also has its drawbacks. Because of the nature of wind farms, much more surface area is needed for turbines, roads, and the transmission grid than typical mineral and oil extraction.¹³⁰ As a result, wind developers potentially need access to more surface area.¹³¹ If the surface owner, wind-estate owner, and wind developer were separate parties, the “developer would not need to consult [with] the surface owner regarding surface access” but would instead only work with the wind-estate owner.¹³² While this is partially advantageous, it also leads to uncertainty as to whether other parties can be present on the land.¹³³ By

123. *See id.*

124. *See* James, *supra* note 115, at 902 (“Some states have implemented the Accommodation Doctrine to attempt a balance between the rights of a surface interest owner and a mineral interest owner.”).

125. *Contra* Costa Water Dist. v. Vaquero Farms, Inc., 58 Cal. App. 4th 883, 893 (1997).

126. *See* Alexander, *supra* note 69, at 453.

127. N.M. STAT. ANN. § 62-16A-3 (2015).

128. § 62-16A-4; *see also* Brent Stahl et al., *Wind Energy Laws and Incentives: A Survey of Selected State Rules*, 49 WASHBURN L.J. 99, 118 (2009).

129. Chavarria, *supra* note 37, at 836.

130. DuVivier, *supra* note 5, at 85.

131. *Id.*

132. Alexander, *supra* note 69, at 455.

133. *See id.* (“If severed wind rights carry an implied surface easement, then the wind

possibly requiring a wind developer to purchase both the surface and wind estate to prevent conflict, this method could introduce inefficiency and needlessly increase costs for development.¹³⁴ Another drawback could occur if others besides wind developers decide to acquire the severed wind estates, such as neighbors who do not wish to have a wind farm nearby, the potential energy would be completely unrealized.¹³⁵

One of the best benefits of wind power—its renewability—is also the strongest reason why the wind estate should not be severed from the surface estate.¹³⁶ Theoretically, the wind farm could produce energy indefinitely, forever leaving the land burdened.¹³⁷ In contrast, even if certain mining methods require large portions of land surface, the resource will eventually be depleted, and the surface-estate owner can reclaim the land.¹³⁸ If wind developers purchase wind estates outright, then the surface owner will have no negotiating power in the planning and use of the possibly permanent wind farm.¹³⁹ This can cause issues with access for the developer and nuisance claims for the surface owner.¹⁴⁰

Just as landowners prefer non-severance, wind developers favor having the ability to enter into lease agreements with landowners.¹⁴¹ First, leases are less expensive for wind developers than purchasing land.¹⁴² Second, in addition to the savings for developers, “[a]pproximately 95% of the land involved in a wind farm can be used for other purposes besides the wind development.”¹⁴³ Third, the wind developer wishing to build a wind farm in a particular area would rather just “secure access to the land”

farm developer would not need to consult the surface owner regarding surface access . . .”).

134. See Wiseman, *supra* note 1, at 1808 (“It is likely unwise to grant wind . . . developers fully dominant rights to the air estate against the surface owner’s wishes. But it also might be unfair, and in some cases inefficient, to require that wind and solar developers acquire both the surface and the air estate.”).

135. Alexander, *supra* note 69, at 456.

136. See DuVivier, *supra* note 5, at 86 (stating that “wind power is renewable and never depleted, thus, wind generation facilities might require perpetual surface use”).

137. *Id.*

138. *Id.* at 85–86.

139. See *id.* at 86 (“Taking [surface owners] out of the equation seriously complicates surface access and damages negotiations.”).

140. See *id.* (explaining that the owners of each estate “seek only to maximize their own distinct interests” instead of working together).

141. See Wright, *supra* note 11, at 15 (listing the primary reasons why developers lease).

142. *Id.*

143. *Id.*

through wind leases with the holder of the wind estate.¹⁴⁴ Another author has pointed out that one other practical reason for wind developers to favor leases is that many landowners in rural areas of a state have been farming and ranching the same fields for generations and would be opposed to selling the land outright.¹⁴⁵

In non-severance states, the developer need not gain rights to the land itself, just to the wind, much like oil and gas developers that use the surface to extract minerals.¹⁴⁶ Like mineral leases, wind leases allow surface access because to do otherwise would make the grant virtually useless.¹⁴⁷ The situation is more complex, and therefore more expensive, when the wind estate has been severed and has a separate owner from the surface estate.¹⁴⁸ Some developers may be hesitant to work in such conditions and take their plans elsewhere.¹⁴⁹

The Oklahoma State Legislature has chosen not to sever the rights to “airspace” from the surface estate; rather, the airspace is considered to be real property belonging to the landowner.¹⁵⁰ With the decline in profitability of agricultural enterprises in the Southwest and Great Plains,¹⁵¹ wind-development leases are a great way for Oklahoma’s rural landowners to remain profitable.¹⁵² Therefore, wind developers who wish to make use of airspace must enter into lease agreements with the “legally authorized owner of the surface estate.”¹⁵³ Any lease agreement struck between the wind developer and surface owner may not interfere with any statutory or common-law rules regarding “aviation, air transportation, . . . or air operations.”¹⁵⁴

144. *Cf. id.* at 13, 15 (explaining that wind developers must obtain land access from all estate owners and prefer to lease rather than purchase).

145. *Id.* at 15.

146. Wiseman, *supra* note 1, at 1806.

147. *See* Chavarria, *supra* note 37, at 839.

148. *See* Alexander, *supra* note 69, at 438–39 (arguing that without statutory clarity upon the issue “the market for severed wind rights will not develop”).

149. *Id.* at 438.

150. *See* OKLA. STAT. tit. 60, § 820.1 (2011).

151. *See, e.g.,* Maria Gallucci, *Southwest, Great Plains States Are Ill-Prepared for Megadroughts This Century*, INT’L BUS. TIMES (Feb. 19, 2015, 9:04 AM), <http://www.ibtimes.com/southwest-great-plains-states-are-ill-prepared-megadroughts-century-1821046> [<http://perma.cc/LP77-75LD>].

152. *See* Chavarria, *supra* note 37, at 834 (suggesting that “the wind industry has been enormously profitable for Texas”).

153. § 820.1(B).

154. *Id.* § 820.1(C).

D. The Wind Estate in the Courts

Oklahoma courts have not yet answered questions relating to the interaction between wind leases and landowner claims for damages. The most analogous situation is that of a mineral lease. For example, in *Thompson v. Andover Oil Co.*, the Oklahoma Court of Civil Appeals considered land ownership in an oil-and-gas case and stated that “in order to maintain a cause of action for nuisance, the plaintiff must prove an unlawful act or omission of duty which either injured or endangered his use of his *property*.”¹⁵⁵

The same principles were applied in an anticipatory-nuisance claim against a wind developer where plaintiffs were landowners and the “Oklahoma Wind Action Association (OWAA) . . . [brought] suit on behalf of itself and its members.”¹⁵⁶ The defendant was a wind-energy company negotiating lease agreements with plans to construct a wind farm near the plaintiffs’ land.¹⁵⁷ The court granted in part and denied in part the defendant’s motion to dismiss largely on procedural grounds¹⁵⁸ because the OWAA did not properly establish associational standing by “demonstrat[ing] that the individual members would have [had] standing to sue in their own right.”¹⁵⁹ In order to have standing, the court required the OWAA to show that the landowner’s impacted by the development were members and “the impact of the wind farm [would be] ‘substantially [the same]’ on each of its members.”¹⁶⁰ While the plaintiffs in this case were granted leave to file an amended complaint,¹⁶¹ it would be even more difficult for a non-association plaintiff to establish standing through the Oklahoma negligence standard that requires “injured or endangered . . .

155. *Thompson v. Andover Oil Co.*, 1984 OK CIV APP 51, ¶ 18, 691 P.2d 77, 83 (emphasis added); *see also* OKLA. STAT. tit. 50, § 1 (2011) (stating that “[a] nuisance consists in unlawfully doing an act, or omitting to perform a duty, which act or omission . . . [i]n any way renders other persons insecure in life, or in the use of property”).

156. *Walker v. Apex Wind Constr., L.L.C.*, No. CIV-14-914-D, 2015 WL 348778, at *1 (W.D. Okla. Jan. 26, 2015).

157. *Id.*

158. *Id.* at *7 (stating defendant’s motion was granted regarding allegations of “associational standing,” the “anticipatory trespass claim,” and “[c]lass [a]llegations”; the motion was “[denied] in all other respects”).

159. *Id.* at *2.

160. *Id.* (quoting Plaintiffs’ Response in Opposition to Defendants’ Motion to Dismiss at 4).

161. *Id.* at *7.

use of [the plaintiff's] *property*"¹⁶² when landowners do not have control over the wind rights above their surface property.¹⁶³

There was another attempt to halt the construction of a wind farm in *United States v. Osage Wind*.¹⁶⁴ In this case, the Osage Nation claimed that a wind developer, Osage Wind, L.L.C., violated a federal law¹⁶⁵ requiring approval before starting to dig on Osage land.¹⁶⁶ The Osage Nation, and later the United States as the plaintiff, alleged that when Osage Wind, L.L.C. "excavat[ed] and extract[ed]" dirt, "limestone, dolomite, and other sedimentary materials" in order to build foundations for turbines, the company failed to secure the approval required for its "mining" activities.¹⁶⁷

The plaintiff argued that the language in 25 C.F.R. § 214.7, which states that "mining or work of any nature" must be "approved by the Secretary of the Interior," was intended to be interpreted broadly in favor of the Osage Nation and thus included the wind-development project.¹⁶⁸ The district court held that the requested application of the statute would be "overly broad and impractical," and "'mineral development' covers the activities of an entity engaged in the science, technique, and business of *developing minerals*, not those of an entity that incidentally encounters minerals in connection with surface construction activities."¹⁶⁹ It was not the intent of Congress, the court concluded, to require approval for the construction of all "basements, house foundations, septic tanks, and

162. *Thompson v. Andover Oil Co.*, 1984 OK CIV APP 51, ¶ 18, 691 P.2d 77, 83 (emphasis added).

163. *Cf.* Brief of Amici Curiae Audubon of Kansas and the Kansas Wildlife Federation at 13–14, *Zimmerman v. Bd. of Cty. Comm'rs*, 218 P.3d 400 (Kan. 2009) ("[I]f 'wind rights' are severable . . . , the Plaintiffs have no standing to assert any claim with respect to wind, having conveyed their rights by lease to non-parties to this suit."). The amici in *Zimmerman* were arguing on behalf of the County Commissioners' new zoning regulation banning commercial wind-farm development—a regulation challenged for interfering with the plaintiffs' wind rights. *Id.* at 1–2. *Cf.* DuVivier, *supra* note 5, at 86 (arguing that "separating wind rights from the surface estate" takes an important stakeholder, the surface owner, "out of the equation").

164. *United States v. Osage Wind, L.L.C.*, No. 14-CV-704-JHP-TLW, 2015 WL 5775378 (N.D. Okla. Sept. 30, 2015), *argued*, No. 15-5121 (10th Cir. Nov. 16, 2016).

165. 25 C.F.R. § 214.7 (2016) (stating that "[n]o mining or work of any nature will be permitted upon any tract of land until a lease covering such tract shall have been approved by the Secretary of the Interior and delivered to the lessee").

166. *Osage Wind*, 2015 WL 5775378 at *2.

167. *Id.* at *3.

168. *See id.* at *8.

169. *Id.* at *6, *9.

football fields” within the Osage Nation lands.¹⁷⁰ This decision will likely be influential for future wind development on Oklahoma tribal lands by curbing arguments that statutes governing the use of tribal lands are necessarily construed broadly in favor of the tribe.

IV. WIND DEVELOPMENT OPERATIONS UNDER OKLAHOMA LAW

This section addresses four large areas of law that govern Oklahoma wind development: wind leases, the Oklahoma Exploration Rights Act, the Oklahoma Wind Energy Development Act, and zoning law.

A. Leasing the Oklahoma Wind Estate

Because Oklahoma has not severed the wind estate, landowners have the option to lease directly with a developer¹⁷¹ and must understand the highlights of a lease.¹⁷² Just because property is located in a windy area does not make it a good candidate for a wind lease.¹⁷³ Many variables such as “[n]ature, technology, and consumer must be brought together to give wind tangible value.”¹⁷⁴

AWEA recommends that before beginning a project, a wind developer should consider the following: the amount of wind in a given area, land rights, government permits, transmitting the energy generated, a buyer for the energy, and financing for the project.¹⁷⁵ If these factors align and a developer is pursuing a wind lease, the landowner should expect a lengthy lease duration because even a relatively small development “of two dozen or so wind turbines would require an initial investment of well over twenty million dollars.”¹⁷⁶ The wind-energy developer must make the lease long enough to build the wind farm, “recoup [the] initial capital investment, [and] make a profit.”¹⁷⁷ The normal “useful life” of a wind turbine “is typically 20 to 25 years,” so the landowner can expect to negotiate a thirty

170. *Id.* at *10.

171. *See* OKLA. STAT. tit. 60, § 820.1 (2011).

172. *See* Wright, *supra* note 11, at 16–18 (discussing the various elements of a wind lease).

173. Chavarria, *supra* note 37, at 834.

174. *Id.*

175. *Siting Wind Farms Requires Choosing a Proper Location*, AM. WIND ENERGY ASS'N, <http://www.awea.org/Issues/Content.aspx?ItemNumber=853&navItemNumber=671> [<http://perma.cc/Y2Y9-9P3U>].

176. Smith, *supra* note 47, at 305.

177. *Id.*

to thirty-five year lease, which will possibly include an optional extension period.¹⁷⁸

The landowner may be surprised by the amount of land the developer wants to obtain, but “[t]he more land that is tied up, the more ability a developer has to maximize the value of its project by optimal siting of turbines within the area available.”¹⁷⁹ Because the wind developer must account for “buffer zones” and exact “placement of the turbines,” many leases will call for non-obstruction of the wind for ten or more rotor-lengths or about “one half to one mile” from the outside turbines.¹⁸⁰ Ideally, the land under a wind lease would cover enough acreage for the wind and mineral developers to use the surface as needed.¹⁸¹ However, in order to curtail conflicts, the wind developer should encourage the use of clauses that limit mineral-development activities, such as “drilling within a [certain] distance of any wind turbine” and measures for coordinating the use of roads and pipeline construction.¹⁸² Terms in a lease can also restrict other activities such as hunting, farming, and livestock grazing for safety.¹⁸³

Land-use agreements are only possible if landlord–tenant rules are applied to wind leases, so where a lessee “is entitled to the exclusive use and possession of the premises for the duration of the lease term, . . . the lessor has no right to enter the premises unless there is express authorization in the lease agreement.”¹⁸⁴ If the traditional rules apply, the land “not actually occupied by the wind [developer’s] turbines, roads, and other installations, will be limited to the express contractual conditions that the lessor includes in the lease.”¹⁸⁵ Matters are further complicated when the severed mineral interests have multiple holders separate from the landowner.¹⁸⁶ Developers must “[u]nderstand[] the nature of the mineral estate, who owns it, and the specific impacts existing[-] or future[-]mineral development in the vicinity may have on a project.”¹⁸⁷

Wind leases being created today will vary in their terms, so the

178. Wright, *supra* note 11, at 17.

179. *Id.* at 20.

180. DuVivier & Wetsel, *supra* note 14, at 9-10 to -11.

181. *See* Wright, *supra* note 11, at 20.

182. *Id.* at 23.

183. Smith, *supra* note 47, at 316.

184. *Id.*

185. *Id.*

186. *See* Wright, *supra* note 11, at 23.

187. *Id.*

landowner can expect some negotiation to make the agreement fit with their use of the land.¹⁸⁸ Scholars compare today's wind leases to the type of fixed-term lease used by the oil-and-gas industry in the early 1900s.¹⁸⁹ Normally, the landowner can expect to be paid a royalty from energy production, much like an oil-and-gas lease.¹⁹⁰ Typically, "[r]oyalties are calculated based on a stipulated percentage of the project's gross revenue."¹⁹¹ At one time, these percentages ranged "from four to six percent,"¹⁹² but one article in 2015 found that royalty payments can reach up to ten percent.¹⁹³

Landowners should carefully consider what uses they would still like to make of the land—whether those are farming, grazing, hunting, or simply access.¹⁹⁴ While most of these activities will likely be permitted to some extent, there will be some land-use restrictions and non-obstruction requirements around turbines for safety reasons.¹⁹⁵ The restrictions will usually take the form of a "wind-flow easement" to keep the land "free of obstructions or topographical changes that could affect wind velocity, direction and constancy. This grant could be coupled with a grant in fee or a long-term lease of the geographic area where the installations would be placed."¹⁹⁶

B. The Oklahoma Exploration Rights Act: Balancing the Three Estates

The triangle of ownership rights between the mineral estate, wind estate, and surface estate in Oklahoma is addressed in the Exploration Rights Act of 2011.¹⁹⁷ Under the Act, wind developers may "not

188. See Smith, *supra* note 47, at 316.

189. *Id.* at 304; see also Shannon L. Ferrell, *Wind Energy Agreements in Oklahoma: Dealing with Energy's New Frontier*, 80 OKLA. B.J. 1015, 1019 (2009) (identifying important distinctions between typical oil-and-gas and wind-development leases).

190. Wright, *supra* note 11, at 18.

191. *Id.*

192. *Id.*

193. Brad Reid, *A Landowner's Legal Introduction to Wind Energy Leases*, HUFFINGTON POST: THE BLOG (Nov. 9, 2015, 1:10 PM), http://www.huffingtonpost.com/brad-reid/a-landowners-legal-introd_b_8511702.html [https://perma.cc/UQ2F-AMH7].

194. Smith, *supra* note 47, at 316.

195. See *id.*

196. *Id.* at 306–07.

197. Exploration Rights Act of 2011, OKLA. STAT. tit. 52, §§ 801–805 (2011). See generally Exploration Rights Act of 2011, ch. 197, § 1, 2011 Okla. Sess. Laws 725, 725

unreasonably interfere with the mineral owner's right to make reasonable use of the surface estate."¹⁹⁸ This means that even if a wind lease is "prior in time" to an oil-and-gas lease, the wind estate remains servient to the mineral estate.¹⁹⁹ Therefore, "a wind lessee may be subject to the risk that drilling activities will, at least temporarily, have some impact on wind conditions, and that placement and even use of roads and electric lines may have to give way to the needs of an oil and gas lessee."²⁰⁰ Oklahoma's Exploration Rights Act places the wind lessee in the same position as an agricultural lessee on the same land.²⁰¹

Oklahoma has assigned other requirements on the wind developer. Thirty days before the wind developer begins construction, or even enters onto the surface estate, he must notify "[a]ny operator . . . who is conducting oil and gas operations upon all or any part of the surface estate as to which the wind energy developer intends the construction of the wind energy facility."²⁰² If the wind developer does not comply with the requirements, "any affected person may petition the district court in the county in which the real property is located for either declaratory relief . . . or injunctive relief . . . or both, in addition to any other remedies at law or in equity that may otherwise be available."²⁰³

The surest way for the wind estate holder to prevent conflicts with oil-and-gas developers would be to create covenants with landowners who also own the mineral rights to govern the location of wind turbines, equipment, and access roads.²⁰⁴ These covenants would protect the wind development activities from future dominant oil-and-gas activities.²⁰⁵ However, even if the land is not previously under an oil-and-gas

("As the wind industry continues to develop, there is risk for potential conflicts between the wind energy developer and the right of mineral owners to reasonable use of the surface for oil and gas exploration and production."); *id.* § 2(3), 2011 Okla. Sess. Laws at 726 ("The prudent development of wind energy resources requires addressing the relationship of the needs of wind energy developers with those of the mineral estate owners . . . and balancing the needs of wind energy developers with those of the landowners . . .").

198. OKLA. STAT. tit. 52, § 803(B) (2011).

199. Smith, *supra* note 47, at 315.

200. *Id.*

201. *See id.* at 314 ("Because the mineral estate is dominant, an agricultural lessee whose interest was created after the severance of the mineral estate has no right to prevent oil and gas operations that interfere with his ranching or farming operations.").

202. § 803(C)(1).

203. § 803(G).

204. Smith, *supra* note 47, at 315.

205. *Id.*

agreement, the landowner may not own a large enough fraction of the mineral estate to impact any subsequent oil-and-gas development in the area.²⁰⁶ The most practical solution would be “good faith negotiations” and “joint use agreement[s]” between all parties involved rather than expensive and time-consuming litigation over the issue.²⁰⁷ However, given the Exploration Rights Act’s strong preference for oil-and-gas operators,²⁰⁸ bargaining power for both the surface owner and wind developer will be decreased in negotiations.²⁰⁹

*C. The Oklahoma Wind Energy Development Act:
Regulating Wind Energy Development and Decline*

The Oklahoma Wind Energy Development Act²¹⁰ strives to balance the interests of “wind energy developers with those of the landowners who provide access to the wind energy resource.”²¹¹ The Act provides guidelines and restrictions for wind-development operations by placing the burden of information on the large company rather than landowners, who often lease the land individually to the large companies.²¹² Before a developer may begin construction, the operations must be covered by either a “[c]ommercial general liability insurance policy” or a self-insurance policy supplemented with “an excess liability insurance policy.”²¹³ While the requirement of insurance is common business practice, it is uncommon to require the owner/operator to “deliver to the

206. *See id.* (explaining that covenants protecting wind farms and turbines are only “realistic” if the landowner “owns a sufficiently large fraction of the mineral estate”).

207. DuVivier & Wetsel, *supra* note 14, at 9-30.

208. *See* tit. 52, § 803(B) (“Notwithstanding any provision in a wind or solar energy agreement . . . the wind energy developer shall not unreasonably interfere with the mineral owner’s right to make reasonable use of the surface estate”); *id.* § 803(F) (“It is the intent of this act to confirm the mineral owner’s historical right to make reasonable use of the surface estate . . . and nothing in this act is intended to expand or diminish those historical rights.”).

209. *See* Wiseman, *supra* note 1, at 1805 (discussing the bargaining power of the “oil or gas operator [who] arrives first” in terms of ownership).

210. Oklahoma Wind Energy Development Act, OKLA. STAT. tit. 17, §§ 160.11–.22 (2011 & Supp. I 2015).

211. OKLA. STAT. tit. 17, § 160.12(3) (2011).

212. *See id.* (requiring “assurances that wind . . . energy facilities will be properly decommissioned,” and that landowners can “verify the accuracy of their payments, and that they will be adequately protected against hazards and accidents”); OKLA. STAT. tit. 17, §§ 160.14–.19, 160.21 (2011 & Supp. I 2015).

213. § 160.19(A).

landowner a certificate of insurance evidencing the policy.”²¹⁴ Also, the landowner must receive a thirty-day “notice of any material modification, cancellation or termination of the insurance.”²¹⁵

If the wind lease requires the wind operator to pay the landowner “based on the amount of [power generated],” then the operator must deliver a statement to the landowner “within ten (10) business days.”²¹⁶ The statement must provide “information reasonably necessary to provide the landowner an understanding of the basis for the payment to the landowner and a means of confirming its accuracy.”²¹⁷

After payment is delivered, the landowner is also allowed to inspect the records of the wind developer “for the purposes of confirming the accuracy of any payments made to the landowner within the past twenty-four (24) months.”²¹⁸ While the landowner must not cause an “undue disruption” to operations, the developer must “make available within the state all records, documents, data, and other information, or copies thereof, as are necessary for a landowner to conduct the inspection.”²¹⁹

The Act also requires that the wind developer provide certain information annually to the Corporation Commission; namely, the amount of energy generated, the labeled capacity of the turbine or turbines, and the location where the power was generated.²²⁰ In addition to the annual information, the developers who first generate commercial quantities of energy after December 31, 2016, must provide “evidence of financial security” to the Corporation Commission after the facility has been in operation for five years.²²¹ The evidence of security, such as a “surety bond, collateral bond, parent guaranty, cash, cashier’s check, certificate of deposit, bank joint custody receipt or other approved negotiable instrument,” must show that the company has sufficient value to “cover the anticipated costs of decommissioning the wind energy facility.”²²² To encourage compliance, the Act allows for “an administrative penalty,” up

214. *Id.* § 160.19(C).

215. *Id.*

216. § 160.16.

217. *Id.*

218. OKLA. STAT. tit. 17, § 160.17(A) (2011).

219. *Id.* § 160.17(B).

220. OKLA. STAT. tit. 17, § 160.18(A) (2011).

221. OKLA. STAT. tit. 17, § 160.15(A) (2011 & Supp. I 2015) (providing further that all developments that reached the “commercial generation date prior to December 31, 2016” must submit the required evidence on the fifteenth year of operation).

222. *Id.*

to \$1,500, for every day the wind-development owner fails to file the financial reports.²²³

When it comes time to decommission a facility or individual wind turbine, the owner will be financially responsible for the following:

1. Removal of wind turbines, towers, buildings, cabling, electrical components, foundations and any other associated facilities, to a depth of thirty (30) inches below grade; and
2. Disturbed earth being graded and reseeded or otherwise restored to substantially the same physical condition as existed prior to the construction of the wind energy facility by the owner, excluding roads, unless the landowner specifically requests in writing that the roads or other land surface areas be restored.²²⁴

This decommissioning activity must take place within “twelve (12) months after abandonment²²⁵ or the end of the useful life of the . . . equipment in the wind energy facility.”²²⁶ The owner will be insulated from decommission requirements when “the owner or operator has elected not to run the facility, but it has been maintained in proper working order and is capable of generating electricity.”²²⁷ While the Oklahoma Wind Energy Development Act and the Exploration Rights Act of 2011 are a great beginning to the regulation of wind development in Oklahoma, there are additional issues that must be addressed.

D. Zoning Laws

Zoning has been a valuable tool for regulating land use and location of industry for decades.²²⁸ Zoning laws are needed, not to keep wind farms away from certain areas, but to control placement of wind energy development.²²⁹ Because a wind development is not considered a public

223. *Id.* § 160.15(C).

224. OKLA. STAT. tit. 17, § 160.14(B)(1)–(2) (2011).

225. *Abandonment* is defined as “the failure to generate electricity from commercial wind energy equipment for a period of twenty-four (24) consecutive months for reasons other than curtailment, repowering, a valid judicial order or other governmental regulatory action, with no pending negotiations for purchase.” OKLA. STAT. tit. 17, § 160.13(1) (2011).

226. 160.14(C)(1).

227. § 160.13(1).

228. *E.g.*, Clint C. Small, Jr., Recent Case, 16 TEX. L. REV. 265, 265 (1938).

229. See James M. McElfish Jr. & Sara Gersen, *Local Standards for Wind Power Siting: A Look at Model Ordinances*, 41 ENVTL. L. REP. NEWS & ANALYSIS 10825, 10825 (2011);

utility (which can have eminent domain powers), states use zoning to avoid “long and costly legal battles” with property owners.²³⁰ Boding well for wind development, the general sentiment toward wind energy is overwhelmingly positive.²³¹ In fact, a 2014 bipartisan poll found that eighty-seven percent of Midwesterners supported the increased use of wind energy.²³² Yet both wind developers and governments face the not-in-my-backyard mentality—a problem prevalent among local municipalities where wind developers seek to locate.²³³

Zoning ordinances can take the place of costly and unproductive nuisance cases where local residents attempt to prevent or delay the installation of wind farms.²³⁴ Supporting a centralized zoning solution, Professor Wiseman has argued that “state[s] should . . . preempt [some] nuisance claims” and increase the plaintiff’s initial burden when bringing nuisance claims for other reasons to prevent citizens neighboring a pending wind farm from using the courts as a delay tactic, hindering wind development in the state overall.²³⁵ This method would control predictable nuisances and support fairness for those with legitimate claims against wind developers.²³⁶ If there are no centralized zoning regulations, then developers and municipalities alike will not have a standard on which to base claims and defenses, so there would be an increase in litigation.²³⁷ The best way to protect citizens from nuisances and dangers is to give wind developers notice of what is required as to setbacks, turbine size, and noise limits in the given area.²³⁸

Kristina Culley, *Has Texas Nuisance Law Been Blown Away by the Demand for Wind Power?*, 61 BAYLOR L. REV. 943, 972 (2009).

230. See Hannah Wiseman, Lindsay Grisamer & E. Nichole Saunders, *Formulating a Law of Sustainable Energy: The Renewables Component*, 28 PACE ENVTL. L. REV. 827, 850 (2011).

231. See Joshua S. Hill, *Midwesterners Increasingly in Favor of Renewable Energy*, CLEAN TECHNICA (Sept. 12, 2014), <http://cleantechnica.com/2014/09/12/midwesterners-increasingly-favor-renewable-energy/> [<http://perma.cc/JFE3-2BXG>].

232. *Id.*

233. Salkin & Ostrow, *supra* note 44, at 1051–52.

234. See Wiseman, *supra* note 1, at 1819–20 (“[N]uisance law and other doctrines serve as important backstop authority when a local zoning ordinance or state regime fails to address certain negative or unanticipated impacts of development.”).

235. See *id.* at 1820.

236. See *id.* at 1819.

237. *Cf. id.* at 1811 (explaining the negative impacts of energy development, which zoning helps to control).

238. See *id.* at 1811–12 (describing successful zoning ordinances regarding renewable energy development).

V. OKLAHOMA'S SOLUTION:
STATEWIDE MINIMUM ZONING

This section includes a variety of law and policy proposals that will help Oklahoma fully realize its wind-energy-development potential while productively balancing the needs of all three estates. First, the state should enact zoning laws that are proven to be effective based on historical usage. Second, Oklahoma should offer economic incentives to encourage wind development within the state. This action is needed because the federal government's incentive grants are unreliable, other states have seen success implementing similar policies, and Oklahoma is poised for change. Finally, Oklahoma should invest in energy transmission lines, beginning in the Oklahoma Panhandle.

The Oklahoma Legislature should consider prohibiting local zoning laws from arbitrarily excluding wind farms.²³⁹ Without state oversight, there is a possibility that local governments would “completely block wind development in their jurisdictions as a result of local political pressure.”²⁴⁰ In fact, scholars have found “[i]n states where local control over renewable technology siting and construction has not been preempted, a growing number of municipalities have chosen to ban renewable development or certain types of renewable development—particularly wind farms.”²⁴¹

In the past, a problem similar to turbine siting was the installation of cellphone towers.²⁴² The solution was for Congress to require local governments to permit towers but allow some local discretion as to exact placement.²⁴³ The national cellphone-tower-siting policy “leaves substantive siting decisions primarily in the hands of local decision makers, but constrains local discretion in certain specific areas. In so doing, the . . . [p]olicy balances legitimate local concerns against the broader national interest in developing a communications network.”²⁴⁴

Many potential problems with wind farms, such as viewshed, light

239. *See id.* at 1813–14.

240. Alexandra B. Klass, *Property Rights on the New Frontier: Climate Change, Natural Resource Development, and Renewable Energy*, 38 *ECOLOGY L.Q.* 63, 117 (2011).

241. Wiseman, Grisamer & Saunders, *supra* note 230, at 872 (footnote omitted).

242. *See* Salkin & Ostrow, *supra* note 44, at 1082 (discussing Congress's implementation of the “cell phone tower siting policy”).

243. *See id.*

244. *Id.* (footnote omitted); *see also* 47 U.S.C. § 332(c)(3), (7) (2012); *U.S. Cellular Corp. v. City of Wichita Falls*, 364 F.3d 250, 253–54 (5th Cir. 2004) (describing the Telecommunication Siting Policy's balance of national and local interests).

emissions, advertising, turbine color, size, and height, have been regulated through zoning, FAA regulations, and requirements that electrical cables are located underground whenever practical.²⁴⁵ By allowing local municipalities to tailor their siting policies, states can increase local acceptance of wind farms.²⁴⁶ This is critical because people's reactions to turbines vary over such a wide scale.²⁴⁷ For example, "[s]ome people feel that turbines are intrusive; others see them as elegant and interesting," so by allowing communities to make some of their own decisions, they will feel a sense of ownership of the local wind farm.²⁴⁸

Oklahoma's legislature should enact statewide, minimum zoning requirements. The statute should require local governments to "specify the zoning classifications within which large wind facilities are a permitted, conditional, or special use," thus allowing local control "for how and where wind facilities will be authorized."²⁴⁹ Instead of using the yes-or-no system for wind-farm locations, Oklahoma should make use of the most valuable rural wind locations first, then it can work down the list to expand development into less valuable areas to meet demand or reduce reliance on fossil fuels.²⁵⁰ The state statute should allow an exception where a wind farm would harm local industries, cultural aspects, or environmental resources.²⁵¹ To help ensure local acceptance of the state-mandated zoning, as several scholars have recommended, the Oklahoma Legislature should draft model ordinances for local governments, provide information and support for local leaders, and encourage municipalities to open a dialogue with their residents about wind-energy concerns in the community.²⁵²

An amendment to the Oklahoma Wind Energy Development Act places siting limitations near schools, airports, and hospitals.²⁵³ This

245. See McElfish & Gersen, *supra* note 229, at 10828–29 (providing examples of various states' ordinances regarding visual impacts of wind farms and turbines).

246. *Id.* at 10828.

247. Salkin & Ostrow, *supra* note 44, at 1074.

248. *Id.* (quoting U.S. DEP'T OF ENERGY, 20% WIND ENERGY BY 2030: INCREASING WIND ENERGY'S CONTRIBUTION TO U.S. ELECTRICITY SUPPLY 116 (2008), http://www.20percentwind.org/20percent_wind_energy_report_revOct08.pdf [<http://perma.cc/M3U8-5F8X>]).

249. McElfish & Gersen, *supra* note 229, at 10828.

250. See Robbins, *supra* note 42, at 575.

251. Wiseman, *supra* note 1, at 1818.

252. *Id.* at 1830; see also Sean F. Nolon, *Negotiating the Wind: A Framework to Engage Citizens in Siting Wind Turbines*, 12 CARDOZO J. CONFLICT RESOL. 327, 367 (2011).

253. OKLA. STAT. tit. 17, § 160.20(A)(1)–(3) (Supp. I 2015).

amendment took effect September 1, 2015, and is a good start on zoning requirements in Oklahoma because it applies statewide.²⁵⁴ The statewide template should be employed again by requiring that each county or municipality allow wind development in some designated area, as described above.

A. Economic Incentives

Because the up-front cost of building a wind farm can be prohibitively expensive,²⁵⁵ governments have taken action to ensure clean energy resources are developed.²⁵⁶ The most common forms of economic incentives are tax credits, which along with other incentives have encouraged growth in the business.²⁵⁷

The federal government has an “on-again, off-again” relationship with economic incentives.²⁵⁸ Congress has set a negative precedent by allowing federal Production Tax Credits to expire then later renewing them, causing “boom and bust cycles” in wind development.²⁵⁹ The rise and fall of incentives harms the renewable-energy market by creating artificially low prices when incentives are in effect and later re-imposing tax burdens on wind developers, who must either absorb the loss (hampering future growth) or pass on costs to consumers.²⁶⁰ The normal extension for the federal Production Tax Credits is one or two years, which limits the planning period available to a wind developer.²⁶¹ In effect, the federal tax incentive program has hindered development through its

254. *Id.* But see Joe Wertz, *Oklahoma Landowners Fight Wind Farms by Registering Private Airstrips*, NPR: STATEIMPACT OKLA. (May 25, 2016), <https://stateimpact.npr.org/oklahoma/2016/05/25/oklahoma-landowners-fight-wind-farms-by-registering-private-airstrips/> [<https://perma.cc/X9E3-C7QZ>] (proving that the recent siting limits are merely a start, as landowners take advantage of them to block wind-farm development by registering private airstrips).

255. Smith, *supra* note 47, at 305.

256. See generally Ernest E. Smith & Becky H. Diffen, *Winds of Change: The Creation of Wind Law*, 5 TEX. J. OIL GAS & ENERGY L. 165, 166–76 (2010) (explaining the various federal and state incentives for wind energy).

257. *Id.* at 168–69 (“A variety of federal and state incentives, including tax credits, renewable portfolio standards, and property tax abatements, have assisted in the wind industry’s dramatic growth.”).

258. Chavarria, *supra* note 37, at 834.

259. *Id.*

260. Alexander, *supra* note 69, at 440.

261. Mitchell Ward, *The PTC and Wind Energy: Restructuring the Production Tax Credit As a More Effective Incentive*, 11 HOUS. BUS. & TAX L. J. 455, 464 (2011).

unpredictability.²⁶² Oklahoma needs to act as a safe haven for the wind industry by providing stable economic incentives.

Other states have had success implementing economic incentives paired with zoning requirements for wind development. The AWEA ranks Oregon eighth in installed wind capacity,²⁶³ and the state offers up to \$20 million in tax credits to wind operators “producing renewable energy resources.”²⁶⁴ Additionally, “[t]he Oregon Public Utilities Commission has statewide siting requirements and the Oregon Department of Fish and Wildlife has established environmental guidelines [And] the state encourages local governments to create zoning limitations to protect the installation and use of solar and wind energy systems in their jurisdictions.”²⁶⁵ Washington has also had success with statewide siting requirements where developers work with county governments to obtain siting permits, but the state monitors the permits and can override any denial.²⁶⁶

The North Dakota legislature has also aimed to encourage development within its windy state, and because most of the energy produced needs to be transported beyond its borders, North Dakota’s wind-lease regulations are some of the most comprehensive.²⁶⁷ Besides not allowing severance, North Dakota offers a twenty-year tax credit and other incentives to developers and requires they apply for a permit with the state to validate any lease made with landowners.²⁶⁸ While Kansas has had generous tax exemptions in the past, in a “largely symbolic renewable energy bill,” the legislature put a ten-year cap on the tax exemption going forward.²⁶⁹

Oklahoma’s relatively new wind energy laws are in a state of transition with several wind-industry-related bills introduced in the 2016

262. *Id.*

263. *Oregon Wind Energy*, AM. WIND ENERGY ASS’N, <http://awea.files.cms-plus.com/FileDownloads/pdfs/Oregon.pdf> [https://perma.cc/N5WT-VXXU].

264. OR. REV. STAT. ANN. § 469B.142 (West Supp. 2015).

265. Klass, *supra* note 240, at 106.

266. *Id.*

267. See Stahl et al., *supra* note 128, at 122, 125 (“North Dakota’s success in wind development depends on its ability to transport energy to highly populated areas outside the state.”).

268. See *id.* at 122–24.

269. See Andy Marso, *Property Tax Change Part of Largely Symbolic Renewable Energy Bill*, KAN. HEALTH INST. (May 12, 2015), <http://www.khi.org/news/article/property-tax-change-part-of-largely-symbolic-renewable-energy-bill> [https://perma.cc/JB8Z-SSBL]; KAN. STAT. ANN. § 79-201 (Supp. 2015).

legislative session.²⁷⁰ In 2015, the Oklahoma Wind Energy Development Act saw changes in its setback requirements,²⁷¹ as previously discussed, and new filing procedures.²⁷² Proposed changes would have doubled the setback requirement from airports²⁷³ and allowed landowners to petition the Oklahoma Corporation Commission “to issue an order to prevent the construction of a potential wind energy facility if the landowner is concerned the potential . . . facility will negatively affect the landowner’s property.”²⁷⁴ The proposed Landowner Partnership Act would have directed the Corporation Commission to conduct a study regarding landowner compensation—including the “equitable” distribution of wind-farm proceeds to neighbors “within a reasonable distance who are subject to potential nuisances.”²⁷⁵

The tax code is also far from stable ground for the wind-energy industry. The amount of tax credits has decreased from \$0.0075 per kilowatt-hour (kWh) before 2004, to \$0.0050 from 2004 to 2007, then to \$0.0025 from 2007 to 2012.²⁷⁶ Zero Emissions Tax credits are set to be stable at \$0.0050 per kWh for wind farms “placed in operation” between 2007 and 2021.²⁷⁷ However, a zero-emissions-power-production tax of two-to-seven percent was the subject of a proposed referendum for the November 8, 2016 ballot.²⁷⁸ The Senate Finance Committee’s data shows that “while incentives cost the state \$60 million in 2015, landowners with wind leases received only \$9 million from wind companies.”²⁷⁹ Oklahoma recently approved several measures that ended both the ad valorem tax exemption and investment tax credit for wind farms after December 31,

270. See Randy Ellis & Paul Monies, *Tax Incentives for Oklahoma Wind Farms Are Getting Scrutiny*, NEWSOK (Apr. 26, 2016, 11:55 AM), <http://newsok.com/tax-incentives-for-oklahoma-wind-farms-are-getting-scrutiny/article/5493853> [<https://perma.cc/N4RT-4H77>]; H.B. 2440, 55th Leg., 2d Reg. Sess. (Okla. 2016); H.B. 2817, 55th Leg., 2d Reg. Sess. (Okla. 2016); S.B. 1162, 55th Leg., 2d Reg. Sess. (Okla. 2016); S.B. 1244, 55th Leg., 2d Reg. Sess. (Okla. 2016); S.B. 1415, 55th Leg., 2d Reg. Sess. (Okla. 2016).

271. OKLA. STAT. tit. 17, § 160.20 (Supp. I 2015).

272. OKLA. STAT. tit. 17, §§ 160.15, 160.21(A) (2011 & Supp. I 2015).

273. H.B. 2440.

274. H.B. 1415.

275. S.B. 1244.

276. OKLA. STAT. tit. 68, § 2357.32A(B) (Supp. II 2015).

277. *Id.*

278. H.B. 2817, 55th Leg., 2d Reg. Sess. (Okla. 2016).

279. Joe Wertz, *Wind Power Superhighway Could Help Transform Panhandle into U.S. Energy Hub*, NPR: STATEIMPACT OKLA. (Feb. 5, 2015, 7:43 AM), <http://stateimpact.npr.org/oklahoma/2015/02/05/wind-power-superhighway-could-help-transform-panhandle-into-u-s-energy-hub/> [<http://perma.cc/6LGC-4YJJ>].

2016.²⁸⁰ Other bills in 2015 were forecasted to result in a seventy percent reduction of current tax credits.²⁸¹ Lawmakers defend their decision by noting “the state is facing a \$600 million budget gap,”²⁸² even though the existing incentives had encouraged companies to spend billions in Oklahoma, rather than Texas, Kansas, and Nebraska.²⁸³

When deciding the future of economic incentives for renewable energy, the legislature should consider utilizing Oklahoma’s vast wind resource.²⁸⁴ A Stanford professor has put forth a state-by-state plan for “transition[ing] to renewable energy.”²⁸⁵ The plan calls for sixty-five percent of Oklahoma’s energy consumption to be derived from wind energy by 2050.²⁸⁶ Additionally, new turbine construction would provide over 46,000 construction jobs and more than 20,000 operations jobs over the next forty years.²⁸⁷ The “[p]lan pays for itself in as little as 2 years from air pollution and climate cost savings.”²⁸⁸ When considering tax credits,

280. David Dank Tax Incentive Reform Act of 2015, ch. 335, 2015 Okla. Sess. Laws 1211 (codified at OKLA. STAT. tit. 68, § 2902 (Supp. II 2015)) (removing wind farms from the definition of “manufacturing concern” eligible for ad valorem exemptions); Act of May 20, 2015, ch. 336, 2015 Okla. Sess. Laws 1218 (codified at OKLA. STAT. tit. 68, § 2357.4 (Supp. II 2015)) (ending investment tax credit for wind energy).

281. See ASSOCIATED PRESS, *House Passes Bill Reducing Wind Industry Tax Subsidies*, KGOU (Mar. 2, 2015), <http://kgou.org/post/house-passes-bill-reducing-wind-industry-tax-subsidies> [<http://perma.cc/E2CG-N8UT>]. One bill, S.B. 501, 55th Leg., 1st Reg. Sess. (Okla. 2015), passed by the Senate but not the House, would have set a cap of \$6 million for the zero-emission tax credit.

282. Joe Wertz, *Oklahoma Senate Unanimously Approves Bills Limiting Wind Energy Tax Incentives*, NPR: STATEIMPACT OKLA. (Mar. 11, 2015, 12:36 PM), <http://stateimpact.npr.org/oklahoma/2015/03/11/oklahoma-senate-unanimously-approves-bill-limiting-wind-industry-tax-incentives/> [<http://perma.cc/M2QE-5TL7>].

283. Joe Wertz, *Scrutiny of Subsidies Could Test the Economics of Wind Energy in Oklahoma*, NPR: STATEIMPACT OKLA. (Dec. 4, 2014, 6:15 AM), <http://stateimpact.npr.org/oklahoma/2014/12/04/scrutiny-of-subsidies-could-test-the-economics-of-wind-energy-in-oklahoma/> [<http://perma.cc/VU4B-7ZJQ>] (quoting Governor Mary Fallin saying that she believed the incentives “have worked”).

284. See Paul Monies, *Plan Offered to Move Oklahoma to All-renewable Energy by 2050*, NEWSOK (Mar. 7, 2014, 2:00 PM), <http://newsok.com/plan-offered-to-move-oklahoma-to-all-renewable-energy-by-2050/article/3940717> [<http://perma.cc/BHY5-KDJ7>] (“Two-thirds of Oklahoma’s energy needs could be served by wind power in 2050 . . .”); 100% Oklahoma, SOLUTIONS PROJECT, <http://thesolutionsproject.org/infographic/#ok> [<http://perma.cc/K4PC-9G3W>] (describing the transition plan to “wind, water, and solar” energy).

285. See sources cited *supra* note 284.

286. 100% Oklahoma, *supra* note 284.

287. *Id.*

288. *Id.*

Oklahoma lawmakers must always balance the costs and benefits to determine what is in the best interest of the state. I propose that, in addition to considering dollar costs and benefits, the legislature should also weigh the ecological benefits, long-term growth potential, and future energy needs of both Oklahoma and the United States.

B. Energy Transmission

For Oklahoma to continue its success in the renewable-energy field, it must ensure there are enough high-voltage transmission lines in place to carry energy from rural wind farms to larger centers of energy consumption.²⁸⁹ California, for example, “has experienced a major slow[down] in wind energy development” in part because of “a lack of transmission.”²⁹⁰ Because transmission lines are vital, the lack of them is “one of the highest barriers to the development of renewable energy.”²⁹¹ An example of this problem can be seen in Oklahoma’s panhandle where “one of the state’s richest sources of wind energy . . . is home to very few wind farms.”²⁹² The “transmission gap” is evident as developers have leased over 175,000 acres of the Panhandle for wind development, but the area has “only two of the state’s 33 wind farms.”²⁹³

The cause of transmission gaps in Oklahoma is readily apparent. The cost of building the required infrastructure is prohibitive to individual wind developers.²⁹⁴

To construct a transmission line herself, a renewable developer would typically have to apply to the state public utility commission for a certificate of convenience and necessity—the granting of which often requires a formal administrative hearing—and obtain local approval for siting the lines. She would then have to approach multiple property owners to request transmission rights-of-way and would likely have to use eminent domain powers, if available—which they often are not for non-

289. See Wiseman, Grisamer & Saunders, *supra* note 230, at 853–54 (“A renewable development is useless if it lacks access to a high-voltage transmission line that carries electricity to a consumer population.”).

290. Stahl et al., *supra* note 128, at 100.

291. Wiseman, Grisamer & Saunders, *supra* note 230, at 854.

292. Wertz, *supra* note 279.

293. *Id.*

294. Wiseman, Grisamer & Saunders, *supra* note 230, at 855–57.

utilities. If the developer used eminent domain, she would have to pay for the value of the property taken, including (in some cases) the losses resulting from individuals' fears about the health impacts of transmission lines. Finally, she would need to obtain an agreement from the owner of the nearest transmission line to interconnect her wires with the larger grid.²⁹⁵

As a result, developers choose to invest elsewhere.²⁹⁶

Oklahoma and other states have begun to bridge the transmission gap by requiring public utilities to purchase renewable energy, motivating the utilities "to build out transmission to clusters of renewable development[s]."²⁹⁷ This approach causes utility companies to "propose the new lines through a centralized process at the public utility commission, where the commission will determine the location for the lines and the rates that may be charged to recover the costs."²⁹⁸ Oklahoma's Corporation Commission presumes that costs "for transmission upgrades approved by a regional transmission organization" are recoverable.²⁹⁹ However, the legislature has placed a sunset provision on the presumption of recoverability, and recoverable costs today only include upgrades to transmission projects installed before December 31, 2013.³⁰⁰

Texas, the leader in wind energy production,³⁰¹ took a different approach. The Texas Legislature identified areas best suited for wind development, then required several utility companies to construct transmission lines for the benefit of renewable energy.³⁰² The legislature placed a priority on transmission-line construction in order to complete the project "on an expedited basis."³⁰³ Another leader in wind energy, California, has taken a similar approach, authorizing cost sharing between utilities and consumers to fund transmission lines.³⁰⁴

295. *Id.* (footnotes omitted).

296. *See id.*

297. *Id.* at 856.

298. *Id.* at 857 (footnote omitted).

299. OKLA. STAT. tit. 17, § 286(A)(1) (2011).

300. *Id.* § 286.

301. *See* 2016 MARKET REPORT, *supra* note 54, at 6–7.

302. Wiseman, Grisamer & Saunders, *supra* note 230, at 857.

303. *Id.*

304. *Id.* at 858.

A Texas company is proposing³⁰⁵ to construct a “\$2 billion transmission line [to] transform the prairie into a national wind energy hub.”³⁰⁶ The wind power “superhighway,” dubbed the “Plains and Eastern Clean Line,” would connect Oklahoma with Memphis, Tennessee, “where it would connect to the power grid in the southeastern United States.”³⁰⁷ The creators of the transmission-line plan estimate that the company will pay about \$35 million in “easement and structure payments” with Oklahoma landowners and \$13 million annually in ad valorem taxes within Oklahoma.³⁰⁸

Construction of transmission lines in Oklahoma’s panhandle needs to begin as soon as possible because “[i]t can take up to five years or longer from the time a proposed transmission project is introduced . . . to the time construction begins”;³⁰⁹ fortunately, a commercial-sized wind farm takes only two to six months to complete.³¹⁰ Oklahoma should act on its obligation to enact laws that serve to maximize development in a way consistent with public policy, using natural resources to benefit its citizens.³¹¹

VI. CONCLUSION

The overall goal of wind energy policy should be to improve the efficiency, safety, and sustainability of our energy resources, while not inhibiting growth in the energy industry.³¹² Oklahoma’s legislature has

305. *Proposed Transmission Line Could Turn Oklahoma Panhandle into Wind Superhighway*, POWER ENGINEERING (Feb. 5, 2015), <http://www.power-eng.com/articles/2015/02/proposed-transmission-line-could-turn-oklahoma-panhandle-into-wind-superhighway.html> [<http://perma.cc/77LA-JQUR>].

306. Wertz, *supra* note 279.

307. *Id.*

308. Editorial, *Wind Transmission Proposal Stands to Benefit Oklahoma, Workers*, NEWSOK (Dec. 21, 2015, 12:00 AM), <http://newsok.com/article/5467664> [<http://perma.cc/384W-CEV9>].

309. NAT’L GRID, TRANSMISSION AND WIND ENERGY: CAPTURING THE PREVAILING WINDS FOR THE BENEFIT OF CUSTOMERS 18 (2006), https://www9.nationalgridus.com/non_html/c3-3_NG_wind_policy.pdf [<https://perma.cc/8FC5-9S9S>].

310. *Wind Energy’s Frequently Asked Questions*, EUR. WIND ENERGY ASS’N, <http://www.ewea.org/wind-energy-basics/faq/> [<https://perma.cc/S8FK-2BZV>].

311. See Chavarria, *supra* note 37, at 839–40 (referencing Texas’s “obligation to maximize its development and formulate rules of law that are consistent with the public policy of developing all of the state’s natural resources”).

312. See Robbins, *supra* note 42, at 557 (“We must, absolutely must, get large-scale renewable energy up and running as soon as possible.”).

2016]

*The Potential for Production***239**

laid a strong foundation, but it must now build a more comprehensive policy to balance the needs of the landowner, wind developer, and mineral-estate owner. The success of all three parties is both necessary and beneficial to Oklahoma's future as a leader in energy production.