

William & Mary Environmental Law and Policy Review

Volume 40 (2015-2016)
Issue 3

Article 5

May 2016

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Kimberly E. Diamond, *Wake Effects, Wind Rights, and Wind Turbines: Why Science, Constitutional Rights, and Public Policy Issues Play a Crucial Role*, 40 Wm. & Mary Envtl. L. & Pol'y Rev. 813 (2016), <https://scholarship.law.wm.edu/wmelpr/vol40/iss3/5>

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WAKE EFFECTS, WIND RIGHTS, AND WIND TURBINES: WHY SCIENCE, CONSTITUTIONAL RIGHTS, AND PUBLIC POLICY ISSUES PLAY A CRUCIAL ROLE

KIMBERLY E. DIAMOND*

ABSTRACT

Developers of onshore, utility-scale wind farms seek to purchase or lease parcels on which commercial wind turbines will be sited, carefully selecting each particular parcel based on its access to high wind speeds and unobstructed wind flowing across it in the free stream. Accordingly, a wind farm developer's purchase or lease of a tract of land generally entails a large monetary investment and carries with it an investment-backed expectation that such land will be used for its originally intended purpose. Wind wakes, which disrupt the wind velocity in the free stream, cause downwind turbines to encounter diminished wind speeds and turbulence, as well as experience structural fatigue and stress. Collectively, these factors can substantially reduce these downwind turbines' originally projected energy output over the course of their operational lives. When wind wakes generated from wind turbines on an immediately adjacent neighbor's property extend over a downwind neighbor's land, that land will experience wake-related adverse impacts. As a result, wind turbines that are already in place, or which are scheduled to be erected, on the downwind parcel may experience wake effects from its neighbor's upwind turbines. Purchasing or leasing land that experiences wake-related adverse impacts can deprive a wind farm developer of the opportunity to realize its investment-backed expectation, translate into millions of dollars of future lost income, and render the parcel at issue effectively useless in terms of the original purpose for which it was obtained. This Paper provides an overview of wake effect-related matters wind farm developers and other prospective purchasers should consider in their respective decisions regarding land purchasing and leasing, wind

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turbine siting and placement, rights associated with wind flow across a particular parcel, and measures that can be taken to legally protect such rights. First, it presents a brief scientific overview about wind wakes and describes why they are important considerations with respect to land purchasing or leasing, particularly with respect to legally mandated setback requirements. Second, it provides background about other countries' legal precedent and U.S. precedent for whether a federally recognized property right to unobstructed wind flow over a landowner's parcel exists. Third, it discusses how safety concerns, not generally accepted scientific concepts relating to wind wakes and wake effects, are used to establish setback limits for commercial wind turbines from shared property lines. Fourth, it provides an overview of notice requirements and the establishment of entitlements under the Fourteenth Amendment's Due Process Clause, including why a right to wind flow across one's property may be deemed an entitlement. Fifth, it discusses legal rights that may be protected between parties by such parties entering into legal contracts. Additionally, it uses a recently litigated California case, *Wind Energy Partnership et al. v. NextEra Energy Resources LLC et al.*, to illustrate real-world issues associated with wind wakes. These issues include due process and public policy considerations, such as why it may be financially detrimental to downwind landowners or downwind developers if they do not consider adequately the types of actions that may constitute adequate notice, the timing of government hearings for actions impacting the land at issue and these hearings' significance, the temporal significance of land ownership, as well as the short-term and long-term goals of the local community. Finally, it suggests measures that landowners and developers should take as a matter of best practices to establish and secure legal protection of their wind rights.

INTRODUCTION

The decision to purchase or lease a particular land parcel is a big one, as it generally entails a large monetary investment for which the buyer wants to realize a sizable return. The last thing a buyer wants is to discover after purchasing or leasing a particular tract of land is that the land cannot be used for its originally intended purpose, making the original benefit sought impracticable or impossible to realize, and causing the purchase or lease of such land to become a very costly and poor investment decision. In addition to the speed of the wind flowing to a wind turbine, the amount of turbulence that the turbine encounters will

directly impact the revenue streams related to the energy such turbine produces. Siting wind turbines in a designated location on a particular land parcel, consequently, has significant monetary implications. Wind wakes, which disrupt wind velocity in the free stream and cause downwind turbines to encounter turbulence, are the invisible culprits that may rob downwind turbines of expected wind flow and turn an otherwise ideal parcel for siting wind turbines into a piece of land unsuited for that purpose. In the case of a wind farm developer, purchasing or leasing land that experiences wake-related adverse impacts from an immediately adjacent, upwind neighbor's wind turbines could deprive such developer of the opportunity to realize its investment-backed expectation, translating into millions of dollars of future lost income and rendering such land effectively useless in terms of the original purpose for which it was obtained.

This Paper provides an overview of wake effect-related matters wind farm developers and other prospective purchasers should consider in their respective decisions regarding land purchasing and leasing, wind turbine siting and placement, rights associated with wind flow across a particular parcel, and measures that can be taken to legally protect these rights. First, it presents a brief scientific overview about wind wakes and describes why they are important considerations with respect to land purchasing or leasing, particularly with respect to legally mandated setback requirements that may govern turbine siting on or adjacent to such land. Second, it provides background about other countries' legal precedent and precedent in the United States for whether a federally recognized property right to unobstructed wind flow over a landowner's parcel exists. Third, it discusses how many states and localities use safety concerns, rather than generally accepted scientific concepts relating to wind wakes and wake effects, as the basis for establishing setback limits for commercial wind turbines from shared property lines. Fourth, it provides an overview of notice requirements and the establishment of entitlements under the Due Process Clause of the Fourteenth Amendment to the United States Constitution, including why a right to wind flow across one's property may be deemed an entitlement. Fifth, it discusses legal constructs and rights that may be established and protected between parties by such parties entering into legal contracts. Additionally, it uses a recently litigated California case, *Wind Energy Partnership et al. v. NextEra Energy Resources LLC et al.*¹ (the "Instant Case") to illustrate

¹ *Wind Energy Partnership et al. v. NextEra Energy Resources, LLC et al.*, Case No. 5:11-cv-02050-R-OP, Defendants' Notice of Removal to Federal Court from Riverside Superior

a myriad of real-world issues associated with wind wakes. These issues include due process and public policy considerations such as why it may be financially detrimental to downwind landowners or downwind developers if they do not consider adequately the types of actions that may constitute adequate notice, the timing of government hearings for actions impacting the land at issue and these hearings' significance, the temporal significance of land ownership, as well as the short-term and long-term goals of the local community. Finally, it suggests measures that landowners and developers alike should take as a matter of best practices to establish and secure legal protection of their wind rights.

I. THE SCIENCE BEHIND WIND WAKES THAT MAY IMPAIR THE USE OF A LAND PARCEL

From a wind farm developer's perspective, owning the "right" piece of land with the "right" amount of wind flow over it are key factors in determining whether to purchase or lease a particular parcel. This is because average wind flow over a particular parcel is indicative of the estimated amount of energy utility-scale commercial wind turbines will be able to produce once they are sited on that parcel. A developer bases its turbine placement, including the layout modeling and location of each individual turbine, on the wind flow and wind speeds over different areas of the parcel. Complex terrain and different elevations on a particular parcel may impact wind speeds and turbulence for turbines sited on a particular location. Obstructions, such as trees, large silos, and other man-made buildings and structures, may cause a downwind turbine to be subjected to wind turbulence. Accordingly, having unanticipated obstructions placed too close to a turbine, particularly if such obstructions increase wind turbulence and diminish the wind speed of the wind flowing to such turbine, could cause the developer to lose revenue. If a number of turbines on a developer's property are impacted similarly, the developer could sustain significant financial losses that could ultimately render an entire project economically unfeasible. For this reason, it is important to understand the science behind wind wakes, wake effect impacts, and what wake effects may mean from a revenue maximization standpoint for determining turbine siting on a particular parcel. Taking all of these factors into account may help a wind project developer to assess the

Court (Case No. INC1108424), 271, 281 (C.D. Cal. Dec. 27, 2011) [hereinafter Plaintiffs' Original Complaint].

potential risks involved with siting turbines on a particular parcel. Ultimately, such developer may determine not to site any turbines on a particular parcel or to forego purchasing or leasing a particular parcel if the wake effects from the upwind turbines would render such developer's project financially non-viable.²

A general description of wind wakes and wake effects is as follows. The term "wind wake" is derived from the wakes moving ships leave behind them in the water.³ Specifically, there is a v-shaped Kelvin wake that spreads out behind a ship, starting from the ship's hull.⁴ A turbulent wake bisects the Kelvin wake, creating a zone of churning, choppy water in a corkscrew-like pattern down the middle of the Kelvin wake.⁵ Similar to ships, utility-scale wind turbines create wakes from wind passing through them.⁶ Wakes, with respect to wind turbines, refer to the wind speed deficit and reduced energy content wind possesses after leaving a particular utility-scale wind turbine.⁷ Once wind flows through a turbine, the volume of air downwind from it has a reduced wind speed and increased turbulence compared to wind flowing in the free stream, or, rather, wind that is traveling at its natural velocity that another obstruction has not impeded or redirected (such as a house, barn, tree, complex terrain including hills or mountains, or other obstacles such as another wind turbine).⁸ While atmospheric conditions, including seasonal temperature fluctuations, relative humidity, and other environmental factors, can substantially impact the size, scale, shape, and overall pattern of a wake (known as a "wake rose"),⁹ a turbine's blade length and angle at which the blade is attached to the turbine are significant factors in the size and magnitude of the wake, as well as the distance the wake travels.¹⁰

² For a more in-depth scientific discussion of wake effects, including discussions of factors determining the wake; turbulence and wake rotation; cumulative effects; distance between turbines; efficiency and productivity; and predicting and measuring wakes to mitigate against underperformance, see Kimberly E. Diamond & Ellen J. Crivella, *Wind Turbine Wakes, Wake Effect Impacts, and Wind Leases: Using Solar Access Laws as the Model for Capitalizing on Wind Rights During the Evolution of Wind Policy Standards*, 22 DUKE ENVTL. L. & POL'Y F. 195, 198–209 (2011).

³ *Id.* at 199.

⁴ *Id.*

⁵ *Id.*

⁶ *Id.*

⁷ *Id.*

⁸ Diamond & Crivella, *supra* note 2, at 199–200.

⁹ *Id.* at 202.

¹⁰ *Id.* at 200–01.

Scientists still are debating the length to which a wind turbine wake extends.¹¹ However, the scientific community generally agrees that a wake from a utility-scale commercial wind turbine can extend a minimum distance of eight to ten times such turbine's rotor diameter.¹² In fact, Texas Tech University's Wind Science and Engineering Center conducted a recent study using Doppler radar that shows turbine wakes persisting up to fifteen times the rotor diameter of the wake-generating turbine.¹³

Siting a downwind turbine within the wake of an upwind turbine can have detrimental effects on the mechanical loads and operational capacity of the downwind turbine, as well as decrease the amount of energy the downwind turbine produces.¹⁴ Turbulence intensity is a prime consideration for turbine siting downwind of the wake-generating turbine.¹⁵ Turbulence, or random fluctuations in the wind speed in a particular area over a short time period, such as ten minutes, can make a downwind turbine within an upwind turbine's wake experience increased mechanical loads, thereby causing the downwind turbine to be less efficient at harvesting energy and causing it to experience increased structural fatigue and stress on its gears, which may shorten its overall turbine life.¹⁶ The magnitude of the impact of a turbulent wake on a downwind turbine depends on the distance between the upwind, wake-generating turbine and the downwind turbine.¹⁷ Accordingly, the closer a downwind turbine is sited to an upwind turbine within the upwind turbine's wake, the greater the wake effect impact on such downwind turbine and the less power that downwind turbine will produce.¹⁸ Wind wakes, therefore, can translate into underperformance for downwind turbines, resulting in a significant difference between the amount of energy such turbine was predicted to generate, and the actual amount of energy it produces.¹⁹

¹¹ *Id.* at 201, 204.

¹² *Id.* at 204. "Rotor" is another name for one of the turbine's blades. The rotor length constitutes the radius of one complete blade rotation on the turbine. Twice the rotor size equals the rotor diameter relative to one complete blade rotation on the turbine.

¹³ Mark A. Harral, Zach Long & Neha Marathe, *The Wake Effect Impacting Turbine Siting Agreements*, 7 N. AM. CLEAN ENERGY 14, 14 (2013).

¹⁴ Diamond & Crivella, *supra* note 2, at 205–06.

¹⁵ *Id.* at 202.

¹⁶ *Id.* at 202, 205–06.

¹⁷ *Id.* at 204.

¹⁸ *Id.*

¹⁹ *Id.* at 206.

II. KNOW WHAT LAWS AND OTHER LEGAL CONSTRUCTS MAY BE APPLICABLE

A. *No U.S. Federal Standard; Examples from Norway and Denmark*

Currently, in the United States, there is no Supreme Court ruling, national standard, federal guidelines, legislation, regulatory framework, or other measure that has established a federally protected property right to wind flowing over one's property, including non-interference with this wind flow by an immediately adjacent neighbor. However, other countries have ruled on this matter. For instance, in Norway, the Norwegian high court rejected a landowner's 2009 claim for compensatory damages due to an adjacent planned wind farm's violation of his property rights by "reduc[ing] [his] opportunity to exploit the wind across his property."²⁰ The plaintiff in this case argued that the blade tip of the proposed wind farm's nearest turbine would be located just over 12 feet from the property line between his property and the property on which the wind farm was to be located.²¹ The defendant wind company argued that having a right to install wind turbines on its property necessarily meant that it had an implied right to use the wind flowing across its property.²² The judges in this Norwegian case agreed with the defendant, holding that because wind is not subject to property rights, limiting the right to use of wind flowing across one's land is not applicable.²³

In contrast, in a recent case in Denmark (the "Second Danish Case"), the Danish valuation authority ruled in favor of the plaintiff, a downwind landowner who allegedly lost production revenues and experienced increased maintenance costs as a result of defendant neighbor's re-powering project whereby defendant's nearest turbines were located only approximately 561 feet, or approximately 1.1 rotor diameters, away from plaintiff downwind landowner's existing turbines.²⁴ Rejecting defendant's

²⁰ Torgny Møller, *First Norwegian Ruling on the Question of Who Owns the Wind . . . Nobody Owns the Wind*, 33 NATURLIG ENERGI (2011) [hereinafter First Norwegian Case], available at <http://www.sindal-lundsberg.com/cms/from-my-desk/49-first-norwegian-ruling-on-the-question-of-who-owns-the-wind-nobody-owns-the-wind> [<https://perma.cc/U7EB-SCT4>].

²¹ *Id.*

²² *Id.*

²³ *Id.*

²⁴ Torgny Møller, *Who Own[s] the Wind?—Turbine Owner Receives Compensation of DKK 750,000*, 33 NATURLIG ENERGI (2011) [hereinafter Second Danish Case], available at

claims, the Danish valuation authority determined that the turbines from the repowering project “will result in an increased turbulence” for plaintiff’s existing turbines.²⁵ The Danish valuation authority upheld plaintiff downwind landowner’s claim, awarding plaintiff compensatory damages in the amount of DKK 750,000, or approximately USD 140,765.²⁶

Notably, in a prior Denmark wind rights case (the “First Danish Case”), the Danish valuation authority held against a plaintiff who alleged potential damages with respect to its three installed turbines, due to an adjacent neighbor’s proposed installation of two wind turbines that would cause wake effects, reduce wind flow across plaintiff’s land, and diminish expected power production from plaintiff’s turbines.²⁷ In this First Danish Case, the Danish valuation authority noted that the local municipality had previously announced its plans for both the plaintiff’s land and its adjacent neighbor’s land to be zoned for the siting of up to five turbines in total.²⁸ Accordingly, such valuation authority determined that plaintiff had notice, was fully aware of the risks associated with plaintiff’s parcel, and assumed the risk that its adjacent neighbor would likely install additional wind turbines on such neighbor’s property.²⁹ The Danish valuation authority ruled that plaintiff’s acceptance of this risk precluded plaintiff from receiving what otherwise would have been compensable losses.³⁰

There are several key takeaways from these three cases. First, it is clear that certain countries (such as Denmark) historically have recognized wind rights, while other countries (such as Norway) have not.³¹ While not encouraged from a public policy perspective, as a practical matter, having different jurisdictions at the country, state, county, and local levels with inconsistent laws and policies regarding recognition and protection of wind rights will likely cause potential land purchasers

<http://www.sindal-lundsberg.com/cms/from-my-desk/50-who-own-the-wind-turbine-owner-receives-compensation-of-dkk-750000> [<https://perma.cc/245P-UJZ8>].

²⁵ *Id.*

²⁶ *Id.*

²⁷ Torgny Møller, *First Danish Ruling on Who Owns the Wind*, 33 NATURLIG ENERGI (2011) [hereinafter *First Danish Case*], available at <http://www.sindal-lundsberg.com/cms/from-my-desk/51-first-danish-ruling-on-who-owns-the-wind> [<https://perma.cc/VKN9-45ZQ>].

²⁸ *Id.*

²⁹ *Id.*

³⁰ *Id.*

³¹ First Norwegian Case, *supra* note 20; Second Danish Case, *supra* note 24; First Danish Case, *supra* note 27.

and/or developers to forum shop—among countries at an international level or forum shopping among states and localities at a domestic level—for the most favorable legal regime to protect their wind rights and to satisfy the objectives behind acquiring or leasing a particular land parcel. Second, notice of a local municipality's zoning plan that included an allotment for the planned installation of wind turbines provides a sufficient basis to trump and extinguish a downwind plaintiff's right to collect wake effect damages to which it would have otherwise been entitled, as the First Danish Case illustrates.³² An important lesson learned from these cases is that even in jurisdictions where wind rights may be recognized or deemed to exist, these rights could potentially be trumped in situations where a greater public interest is thought to outweigh the rights of an individual landowner, particularly where public hearings on zoning, land use, and future planned wind turbine installations have been held. Potential land purchasers and developers, therefore, need to be cognizant of whether existing or new zoning plans, including those involving the future siting of commercial wind turbines, translate into the owner of that land's assumption of the risk associated with turbine installation on that land.

B. Setback Limits and Their Relationship (or Lack of Relationship) to Wind Wakes

To fully realize expected profits from turbines sited on downwind property, developers and landowners alike need to be aware of the aforementioned scientific findings, especially with respect to insufficient or nonexistent statewide or locally established mandatory setback limits. A setback limit is effectively a buffer zone established between (i) the shared property line between an upwind landowner and a downwind landowner and (ii) the closest distance the upwind landowner can site a commercial wind turbine on its property.³³

Setback limits are generally created by state statute, local ordinance, or similar law, and can vary from state to state, county to county, or locality to locality, whether domestically or abroad.³⁴ For instance, in Germany, each federal state has different rules with respect to building ordinances governing the mandatory setback distances from two adjacent

³² First Danish Case, *supra* note 27.

³³ Diamond & Crivella, *supra* note 2, at 195–96.

³⁴ *Id.* at 196–97.

landowners' shared property line.³⁵ As illustration, in the federal state Schleswig-Holstein, there is a mandatory setback limit of five times the turbine's rotor diameter, whereas in the federal state North Rhine-Westphalia, there is an eight rotor diameter setback distance.³⁶ These setback limits are indicative that federal states in Germany recognize and give weight to wake effect impacts, and have set their laws governing setback limits accordingly.

Similarly, in the United States, different states and localities have different mandatory setback limits. As the Environmental Law Institute has indicated, in over half the states domestically, local governments play a primary role in determining turbine siting regulations, while the balance of the other states possesses a mixture of state and local regulations wherein the state sets general minimum standards or where the state has a governing board that exercises authority over wind turbines exceeding a certain threshold size.³⁷ Generally, then, local governments and local elected officials' actions play a major role in implementing local ordinances that determine the setback limits governing wind turbine siting.³⁸ Local governments generally want to act in the best overall interests of their respective communities. As such, local governments will consider information presented from impacted and interested parties in the locality, such as the wind farm developers, the "participating" landowners who have leased their land and stand to profit from the wind farm project, the "non-participating" landowners who did not lease their land and/or may have other concerns about the project's impacts, public interest groups, and local utilities that may be purchasing the power the project generates.³⁹

Also, in the United States, setback limits are generally not based on wake effect considerations, but, rather, tend to be based on public safety and property protection precautions acceptable to the local community, specifically to protect against a turbine falling or losing one of its blades.⁴⁰ This is why many states and localities have ordinances mandating a

³⁵ Sebastian Knauer, *Legal Turbulence in Germany: Who Owns the Wind?*, SPIEGEL ONLINE INT'L (May 4, 2007), available at <http://www.spiegel.de/international/germany/legal-turbulence-in-germany-who-owns-the-wind-a-480327.html> [<https://perma.cc/7YPZ-3CMV>].

³⁶ *Id.*

³⁷ ENVTL. L. INST., SITING WIND ENERGY FACILITIES—WHAT DO LOCAL ELECTED OFFICIALS NEED TO KNOW 2 (2013).

³⁸ *Id.* at 2, 3.

³⁹ *Id.* at 2.

⁴⁰ *Id.* at 5. See also *Wind Energy Ordinances*, U.S. DEP'T OF ENERGY, available at http://www.windpoweringamerica.gov/pdfs/policy/2010/wind_energy_ordinances.pdf [<https://perma.cc/K4GJ-L7NB>].

minimum setback distance of approximately 1 to 1.5 times a commercial wind turbine's height away from the shared property line, as measured from the turbine's base to such property line.⁴¹ In fact, a number of model state ordinances suggest a setback distance of 110% of the turbine height.⁴² For example, South Dakota has a model ordinance for siting commercial wind turbines, which suggests a minimum setback distance from any property line of not less than 500 feet or 1.1 times the height of the turbine, whichever is greater.⁴³ Similarly, Plymouth County, Iowa, has a setback limit from the adjacent property line of 115% of the commercial wind turbine's height.⁴⁴ Some localities have a greater setback distance requirement. For instance, Allegany County, Maryland, has a wind ordinance that mandates, for all turbines greater than 300 feet in height, a minimum setback distance of three times such turbine's height from any property line.⁴⁵

Notably, variances, or, rather, exceptions or modifications to a setback ordinance, can generally be obtained through a public hearing or the like, at the discretion of the local zoning board or similar local governing authority.⁴⁶ In certain instances, the ordinance itself may take into account setback waivers as agreed upon between two adjacent neighbors by means of a legally enforceable document.⁴⁷ The Riverside County, California ordinance governing wind energy conversion systems, for example, has a setback requirement of 1.1 times the turbine height from an adjoining lot line for commercial wind turbines, measuring from the center of the turbine tower to the property line itself.⁴⁸ This ordinance, however, also states, in relevant part, that notwithstanding the other setback requirements of such ordinance,

such setbacks from lot lines do not apply if the application is accompanied by a legally enforceable agreement for a

⁴¹ ENVTL. L. INST., *supra* note 37, at 6.

⁴² *Id.*

⁴³ Draft Model Ordinance for Siting of Wind Energy Systems, S.D. P.U.C. § 6(2)(c) (June 1, 2010) at 6, available at <http://puc.sd.gov/commission/twg/WindEnergyOrdinance.pdf> [<https://perma.cc/5T95-3X42>].

⁴⁴ PLYMOUTH CNTY., IOWA, ZONING ORDINANCE 2000, as amended, § 6.10(B)(1)(e) (Apr. 6, 2010).

⁴⁵ ALLEGANY CNTY., MD., WIND ORDINANCE, § 141-106(B)(3) (June 4, 2009).

⁴⁶ *See, e.g., id.* § 141-106(B)(4)(b) (noting that variance applications may be presented to the Board of Zoning Appeals in conjunction with a Special Exception hearing).

⁴⁷ *See* RIVERSIDE CNTY., CAL., WIND ENERGY CONVERSION SYSTEM ORDINANCE, § 18.41(D)(2)(b) (Mar. 12, 2009).

⁴⁸ *Id.* § 18.41(D)(1).

period of 25 years or the life of the permit, whichever is longer, that the adjacent landowner agrees to the elimination of the setback and will not develop his land in such a way as to decrease wind velocity or increase wind turbulence at the location of the proposed [wind turbine].⁴⁹

The Riverside County ordinance, consequently, specifically alludes to wind wakes, and recognizes compromises between adjacent neighbors that are negotiated, documented in written agreements, and legally recognized to allot for wakes.

From these examples, though, it is clear that in the United States, many setback ordinances are not geared to take into account modern scientific findings relating to how far wind wakes extend. Developers must keep in mind such scientific findings when confronted with any existing legal setback limit to evaluate the sufficiency or insufficiency of such setback limit to account for wake effect impacts. Only then should a developer contemplate where and whether to site its turbines on a particular parcel.

C. *Due Process Considerations and What Forms Notice May Take*

Setback limits can be modified if Fourteenth Amendment due process requirements are satisfied. Under the Fourteenth Amendment to the United States Constitution, the arms of American government—including state and local governments—must conduct their duties according to the law, and, as a result, possess a fundamental obligation to provide procedures, such as hearings, before depriving a person of life, liberty, or property.⁵⁰ These procedures are used to ensure that any actions these governmental arms take are fair.⁵¹ Procedural due process is aimed at protecting persons from the “mistaken or unjustified deprivation” of life, liberty, or property.⁵² Accordingly, due process entails “minimiz[ing] substantively unfair or mistaken deprivations” by affording the impacted person or small number of impacted persons, as the case may

⁴⁹ *Id.* § 18.41(D)(2).

⁵⁰ Section 1 of the Fourteenth Amendment to the United States Constitution states, in relevant part, the following: “No State shall make or enforce any law which shall abridge the privileges or immunities of citizens of the United States; nor shall any State deprive any person of life, liberty, or property, without due process of law . . .” U.S. CONST. amend. XIV, § 1.

⁵¹ *Due Process: Introduction*, CORNELL UNIV. L. SCH. LEGAL INFO. INST., available at http://www.law.cornell.edu/wex/due_process [https://perma.cc/3A7X-RA6C].

⁵² *Carey v. Piphus*, 435 U.S. 247, 259 (1978).

be, the ability to contest the basis upon which the particular organ of government, such as a court, plans to deprive such person or small number of persons of their protected interest(s).⁵³ Generally, the burden of proof for proving a due process violation rests with the impacted person or persons.⁵⁴

It is generally agreed that there are two required elements that afford due process to potentially impacted persons: (1) notice, and (2) a hearing before an impartial tribunal.⁵⁵ The notice element serves the purpose of being “reasonably calculated, under all the circumstances, to apprise the interested parties of the pendency of the action and afford them an opportunity to present their objections.”⁵⁶ While the form this notice takes varies based on the facts and circumstances of the individual case, the notice provided in that case must contain both information sufficient to enable the recipient of such notice to become aware of what government action is being proposed, as well as information sufficient to instruct that recipient regarding what that person must do to respond to or stop the deprivation of that person’s interest resulting from this government action.⁵⁷ The hearing element serves the purpose of protecting a person’s right to have the government:

follow a fair process of decision making when it acts to deprive a person of [such person’s] possessions. The purpose of this requirement is not only to ensure abstract fair play to the individual. Its purpose, more particularly, is to protect [such person’s] use and possession of property from arbitrary encroachment⁵⁸

To ensure a fair process, the notice of hearing and the opportunity to present one’s position in opposition to the government action being discussed at such hearing “must be granted at a meaningful time and in a meaningful manner.”⁵⁹ The fairness of the process is also captured by the neutrality requirement which ensures that a person will not be “deprived of [such person’s] interests in the absence of a proceeding in which such

⁵³ *Fuentes v. Shevin*, 407 U.S. 67, 81 (1972).

⁵⁴ NY CIV. SERV., *Due Process*, in HEARING OFFICER’S MANUAL ch. 3 [hereinafter HEARING OFFICER’S MANUAL], available at <http://www.cs.ny.gov/pio/hearingofficermanual/chapter03-dueprocess.htm> [<https://perma.cc/D4DB-ACP2>].

⁵⁵ *Goldberg v. Kelly*, 397 U.S. 254, 267–68, 271 (1970).

⁵⁶ *Mullane v. Central Hanover Trust Co.*, 339 U.S. 306, 314 (1950).

⁵⁷ *Goldberg*, 397 U.S. at 267–68.

⁵⁸ See *Fuentes*, 407 U.S. at 80–81.

⁵⁹ *Armstrong v. Manzo*, 380 U.S. 545, 552 (1965).

person may present [such person's] case with assurance that the arbiter is not predisposed to find against [such person]."⁶⁰ If a person is a member of the small number of impacted persons that a law, rule, decree, etc. harms, then for that person to be recognized as having a constitutional right to a hearing before an impartial tribunal, that person must be able to provide particularized, distinguishing facts with respect to such person's situation that illustrate clearly why such person's situation is different and unique from every other person in such small impacted group that suffers what appears to be a similar adverse event, or series of events, as a result of the government action.⁶¹ Bringing a generalized grievance that other members of the small group share does not rise to the level of having a constitutional right to a hearing.

"Substantive Due Process" concerns "unnamed rights" on which "due process of law" may place substantive limits on what legislatures can enact, in addition to setting procedural requisites for administrators and judges.⁶² In substantive due process cases, the public benefit a law, rule, regulation, mandate, or the like confers is thought to outweigh and therefore justify the deprivation of the rights of a certain small, narrowly defined group of people.⁶³ For a due process violation to have occurred, the government must have acted against a person in such group in such a way that seriousness of the government action has a unique and grave impact upon such person in a manner different from that of everyone else in such small impacted group.⁶⁴

What, exactly, constitutes a protected property interest has been a matter of considerable judicial debate.⁶⁵ Property, in the traditional sense, includes real estate, tangible personal property, and the like.⁶⁶ In the non-traditional sense, according to the U.S. Supreme Court, "property"

⁶⁰ *Marshall v. Jerrico*, 446 U.S. 238, 242 (1980).

⁶¹ HEARING OFFICER'S MANUAL, *supra* note 54; *see generally* *Londoner v. Denver*, 210 U.S. 373 (1908) (no hearing for a particular property owner who, under a Denver, Colorado, statute assessing property owners for street repairs, was unfairly assessed for street repairs was deemed unconstitutional); *Bi-Metallic Investment Co. v. State Bd. of Equalization*, 239 U.S. 441 (1915) (no hearing constitutionally required for a company's challenge to an order requiring increased valuation of all Denver property owners).

⁶² *Due Process: Substantive Due Process*, CORNELL UNIV. L. SCH. LEGAL INFO. INST., available at http://www.law.cornell.edu/wex/due_process [<https://perma.cc/3W3D-NERW>].

⁶³ *Id.*

⁶⁴ *Due Process: Whether Process is Due*, CORNELL UNIV. L. SCH. LEGAL INFO. INST. [hereinafter *Whether Process is Due*], available at http://www.law.cornell.edu/wex/due_process [<https://perma.cc/33M6-UBWT>].

⁶⁵ *Id.*; HEARING OFFICER'S MANUAL, *supra* note 54.

⁶⁶ HEARING OFFICER'S MANUAL, *supra* note 54.

must mean more than just an abstract need or desire for something; it must be “a legitimate claim of entitlement” to a particular benefit.⁶⁷ A non-traditional property interest can be a liberty interest that derives from a state law (or local law, as the case may be).⁶⁸ A person, therefore, could point to a law, statute, rule, regulation, or the like that effectively creates an entitlement for its citizens.⁶⁹ If the government wrongfully deprives a citizen of an entitlement without a hearing, a due process violation has occurred.⁷⁰

Arguably, if the government has enacted a statute, zoning ordinance, or the like that mandates a setback limit for commercial wind turbines from a shared property line that are longer than 110% of the turbine height and takes into account factors other than taking safety precautions against falling turbines or blades, then, arguably, the government has recognized there is some property right or entitlement the downwind landowner possesses with respect to wind flow over its property that should be accorded legal protection. The level of protection such entitlement receives may be strong or weak, depending on a number of factors, including the willingness of the local government to subordinate such downwind landowner’s right or entitlement for the greater good of the community as a matter of public policy, as discussed below. Therefore, presuming a person has an entitlement to wind flow, to be afforded procedural due process, such person must be provided with notice and a hearing to protect that person’s property from arbitrary encroachment. The state or local government’s modification of the setback limit in a manner that could foreseeably adversely impact this entitlement can only be done after public hearings for such modification are held.

D. *Contractually Established Rights*

There are also other ways to establish protected rights with respect to wind flow over land, and to protect against wind wakes impacting one’s property. One such way is to enter into negotiated, legally enforceable contracts. As wind farm developers’ and landowners’ interests may not always be in alignment, having certain types of contracts establish rights between these parties is particularly important. A Wind Lease Agreement, for instance, is the primary legal document into which a

⁶⁷ Bd. of Regents v. Roth, 408 U.S. 564, 577 (1972).

⁶⁸ HEARING OFFICER’S MANUAL, *supra* note 54.

⁶⁹ *Id.*; *Whether Process is Due*, *supra* note 64.

⁷⁰ *Whether Process is Due*, *supra* note 64.

developer and landowner enter.⁷¹ A Wind Lease Agreement is a long-term contract that can last for a term of approximately twenty to forty or more years.⁷² Terms that a Wind Lease Agreement should include are (i) the expected operational duration for all turbines on the landowner's property; (ii) the number and type of wind turbines located on such landowner's property; (iii) the expected term of the construction period; and (iv) the amount, frequency and duration of lease payments that the developer will pay to the landowner.⁷³ "Lease payments" under Wind Lease Agreements are generally made from developers to landowners in the form of royalty payments.⁷⁴ Royalty payments themselves can either be a lump-sum amount, or can be a fixed amount paid in regular intervals during a set period of time.⁷⁵ The amount of the royalty payment(s) a landowner receives could be based on the meter readings at each turbine, or could be tied to the average amount of energy developer's turbines produced on the landowner's parcel.⁷⁶ A savvy landowner should consult with his or her neighbor landowners to see what types of royalty payments and what type of overall deal such neighbors are being offered, so that such landowner does not end up entering into a less favorable agreement with the same developer than such landowner's neighbor.⁷⁷

Generally, the developer and the landowner enter into a Wind Lease Agreement either before the end of the preconstruction period (also called the "Option Period"), or prior to the outset of such Option Period.⁷⁸ The Option Period is the approximately three to five year period during which a developer conducts feasibility testing on a particular parcel and makes its determination as to whether to move forward with turbine construction on such property.⁷⁹ The applicable terms and conditions governing the Option Period can either be incorporated into the Wind Lease Agreement as a subpart of that Agreement, or the Option Period can be covered by a stand-alone Option Contract, separate from—but in addition to—the Wind Lease Agreement.⁸⁰ Whether the Option Contract

⁷¹ Diamond & Crivella, *supra* note 2, at 232.

⁷² *Id.* at 234.

⁷³ *Id.* at 233.

⁷⁴ *Id.* at 236.

⁷⁵ *Id.*

⁷⁶ *Id.*

⁷⁷ Diamond & Crivella, *supra* note 2, at 237.

⁷⁸ *Id.* at 232–33.

⁷⁹ *Id.* at 233. The wind industry has generally come to accept a period of five years as a reasonable option period length. *Id.* However, a landowner may want to negotiate for a smaller option period term, while a developer may endeavor to negotiate for a longer term.

⁸⁰ *Id.*

is included in the Wind Lease Agreement or is a stand-alone, separate agreement, it is prudent to have an attorney review, if not draft, either or both such documents (as applicable) to make certain that the rights of the landowner or the developer (depending on which party the attorney is representing) are referenced and are adequately protected.⁸¹

A developer, on behalf of its financing source(s) and power purchaser(s), may want to ensure that certain other protections are also built into the Wind Lease Agreement so that there is no future issue with respect to the developer's right to unobstructed wind flow to such developer's turbines. To establish and protect this right, the developer can ask for a non-obstruction easement sub-agreement to be built into the Wind Lease Agreement.⁸² Generally, an easement conveys a narrow right for a person to have a limited use of a particular portion of a landowner's property, or a right to take something off such landowner's land.⁸³ To put the world on notice of the existence of the easement, easements must be filed with the appropriate local authority that handles the registering and recording of such items in the official records.⁸⁴ In the case of a non-obstruction easement, which generally has a duration of approximately thirty years (a period of time long enough to cover the duration of the wind farm project), the right granted to the developer from the landowner is the narrow right of unobstructed access to wind flow across such landowner's land.⁸⁵ Effectively, this means that the landowner has agreed that nothing on the landowner's property will cause wind wakes that will impede or otherwise adversely impact the wind flow to the developer's turbines.⁸⁶ A landowner should weigh the benefits and downsides of granting a non-obstruction easement, as such grant may place burdens and other obligations upon this landowner. For instance, a landowner may not be able to plant trees, place buildings (other than potentially those built in the ordinary course, such as a grain silo on farmland, for which appropriate carve-out language should be built into the Wind Lease Agreement), or erect other objects such as other commercial wind turbines on its property because these items may obstruct or impair wind flow to the initial developer's turbines.⁸⁷ This means that such a landowner would be legally prohibited from contracting with another developer

⁸¹ *Id.*

⁸² Diamond & Crivella, *supra* note 2, at 233.

⁸³ *Id.* at 234.

⁸⁴ *Id.*

⁸⁵ *Id.* at 234–35.

⁸⁶ *Id.*

⁸⁷ *Id.*

to place such other developer's turbines on its property, unless such other developer agrees to place its turbines far enough away from the initial developer's turbines such that the first developer's turbines do not experience wake effect impacts from the other developer's turbines.⁸⁸

Moreover, developers should ask for, but landowners need to be cautious and aware of, provisions in Wind Lease Agreements that are aimed at protecting the developers' interests. Three such provisions are as follows. First, there is the "No Interference" provision.⁸⁹ Such a provision requires the landowner to confirm that none of the parcels such landowner owns at present or in the future will interfere with the developer's wind speed or wind direction with respect to the parcel the developer has leased from the landowner.⁹⁰ Second is the "Negative Covenant."⁹¹ A negative covenant with respect to third parties may require a landowner not to contract with third parties for power generation or transmission across the portion of the landowner's property that the developer is leasing.⁹² Third is the "Indemnification" provision.⁹³ Such a provision may require the landowner to make the developer whole monetarily for any losses, damages, and attorneys' fees the developer incurs as a result of activities on the landowner's property in which the landowner or its other tenants engage in that cause damage to the developer or the developer's possessions located on landowner's property, such as the developer's turbines.⁹⁴

III. FACTS OF THE INSTANT CASE

The case *Wind Energy Partnership et al. v. NextEra Energy Resources, LLC et al.*⁹⁵ (the "Instant Case") epitomizes the consequences of what could happen to a developer and a landowner if factors such as wake effects, government-approved modifications to setback limits, and satisfaction of notice requirements under the Fourteenth Amendment Due Process Clause are not accorded sufficient weight.⁹⁶ It also illustrates the value that can be placed on public policy considerations concerning the general welfare of the community.

⁸⁸ Diamond & Crivella, *supra* note 2, at 235.

⁸⁹ *Id.*

⁹⁰ *Id.*

⁹¹ *Id.*

⁹² *Id.*

⁹³ *Id.*

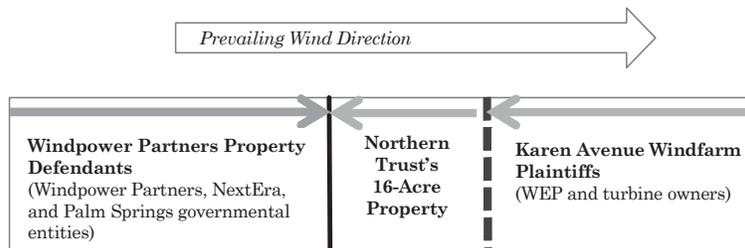
⁹⁴ Diamond & Crivella, *supra* note 2, at 235.

⁹⁵ See generally Plaintiffs' Original Complaint, *supra* note 1.

⁹⁶ *Id.*

The facts of the Instant Case are as follows. There are three parcels of land, each property immediately adjacent to one another in succession, and all located in the northern outskirts of the city of Palm Springs, California (the “City”).⁹⁷ From west to east, the first and westernmost parcel is owned by Windpower Partners 1993, L.P., a Delaware limited partnership doing business in the State of California (“Windpower Partners”), an affiliate of and/or predecessor-in-interest to NextEra Energy Resources, LLC, a Delaware limited liability company (“NextEra” and such property, the “Windpower Partners Property”).⁹⁸ The second parcel is a 16-acre parcel immediately adjacent to and to the east of the Windpower Partners Parcel (such property, the “16-Acre Property”).⁹⁹ Northern Trust initially owned the 16-Acre Property, but, as noted herein, Wind Energy Partnership, a California limited partnership (“WEP”), later purchased this parcel in August 2011.¹⁰⁰ The third parcel, owned by WEP, is known as the Karen Avenue Windfarm (such property, the “Karen Avenue Windfarm”),¹⁰¹ and is located immediately adjacent to and to the east of the 16-Acre Property.¹⁰² The prevailing wind direction flows from west to east across these three adjacent parcels, making the Windpower Partners Property directly upwind from the 16-Acre Property, and the 16-Acre Property directly upwind from the Karen Avenue Windfarm.¹⁰³ Accordingly, as Figure 1 below illustrates, the 16-Acre Property and the Karen Avenue Windfarm are both directly downwind in succession from the Windpower Partners Property.¹⁰⁴

Figure 1



⁹⁷ *Id.*
⁹⁸ *Id.* at 283.
⁹⁹ *Id.* at 284.
¹⁰⁰ *Id.* at 284–85.
¹⁰¹ Plaintiffs’ Original Complaint, *supra* note 1, at 282.
¹⁰² *Id.* at 284.
¹⁰³ *Id.*
¹⁰⁴ *Id.*

Notably, the City's Re-Power Wind Energy Center project (the "Re-Power Project"), a project covering 568 acres of land and extending across eleven parcels of land under five separate ownerships, includes the "Kime lot," a parcel of land that constitutes part of the Windpower Partners Property (the "Kime lot").¹⁰⁵ A repowering project that involves commercial wind turbines across one or more wind farms generally includes replacing either obsolete turbines or turbines that are past their approximate 20–30 year life cycle with newer, more innovatively designed and efficient turbines for purposes of increasing renewable energy power production, something generally deemed to be in the public interest.¹⁰⁶ Here, the City's Re-Power Project involved the removal of eighty existing KVS-33 360 kilowatt wind turbines—each with a rated output of 360 kilowatts and a 33 meter rotor (or, rather, the length of one turbine blade) diameter—that were being replaced with twenty-six new GE 1.5 MW-77 commercial wind turbines.¹⁰⁷ Two of these GE 1.5 megawatt ("MW") turbines, each 339.7 feet tall, and each with a rotor diameter of 77 meters (over double the rotor diameter of a KVS-33 360 kilowatt turbine), were scheduled to be placed on the Kime lot (the "Two Turbines").¹⁰⁸ Accordingly, Windpower Partners intended to replace or relocate existing wind turbines and potentially add new wind turbines, including the Two Turbines, on the Windpower Partners Property (the "Repowering").¹⁰⁹ The Two Turbines were each located approximately 1,035 feet to the west of the property line separating the Windpower Partners Property from the 16-Acre Property.¹¹⁰ According to Section 94.02.00, subdivision (H)(8)(e)(iv)(A)

¹⁰⁵ *Id.* at 284–85.

¹⁰⁶ See Paul White & Paul Gipe, *Repowering California Wind Plants* (May 27, 1993), available at <http://www.wind-works.org/articles/Repower.html> [<https://perma.cc/5XSW-7GBT>]. In the context of a power plant, the category in which wind farms fall, a "repowering" means rebuilding and replacing parts of such plant, rather than building a new plant. See *Repowering*, ECOMII, available at <http://www.ecomii.com/dictionary/repowering> [<https://perma.cc/CYX4-5S8T>].

¹⁰⁷ Plaintiffs' Original Complaint, *supra* note 1, at 284; *Kenetech KVS-33*, WIND TURBINE MODELS, available at <http://www.wind-turbine-models.com/turbine/116/Kenetech/KVS-33.html> [<https://perma.cc/5DXV-VJ9W>] (last visited Mar. 20, 2016); *Kenetech KVS-33 Wind Turbines*, SALVEX, available at http://www.salvex.com/listings/listing_detail.cfm?aucID=182950234 [<https://perma.cc/BMZ5-C8AJ>] (last visited Mar. 20, 2016).

¹⁰⁸ Plaintiffs' Original Complaint, *supra* note 1, at 284, 286, 317; GE ENERGY, *1.5 MW Wind Turbine Brochure* at 4, available at <http://geosci.uchicago.edu/~moyer/GEOS24705/Readings/GEA14954C15-MW-Broch.pdf> [<https://perma.cc/5YE4-L7PL>] (last visited Mar. 20, 2016).

¹⁰⁹ *Wind Energy Partnership et al. v. NextEra Energy Resources, LLC, et al.* Case No. 5:11-cv-02050-R-OP, slip op. 743, 744 (C.D. Cal. June 11, 2012) [hereinafter *Final Ruling on Motion for Summary Judgment*].

¹¹⁰ Plaintiffs' Original Complaint, *supra* note 1, at 284.

of the Palm Springs Zoning Code (the “Zoning Code”), the minimum setback distance from an adjacent property owner’s property line for wind turbines such as the Two Turbines is five rotor diameters.¹¹¹ In this instance, five rotor diameters of a blade from one of the Two Turbines measures 385 meters in length (a rotor diameter of 77 meters x 5 = 385 meters), which is the equivalent of approximately 1,263.12 feet.¹¹² For a frame of reference, one NFL football field is 120 yards (100 yards on the playing field, plus 10 yards in each end zone), or 360 feet.¹¹³ The Two Turbines, therefore, were each located 228.12 feet (1,263.12 feet – 1,035 feet = 228.12 feet), or approximately two-thirds of the length of a football field, closer to the Windpower Partners Property/16-Acre Property property line than the Zoning Code permitted.¹¹⁴

A Conditional Use Permit (“CUP”) is an exception to a zoning code or zoning ordinance that enables a property owner to use its land in a manner that would otherwise be a nonpermitted use.¹¹⁵ To obtain a CUP, the property owner must: (i) publicly explain (usually at a hearing before the applicable zoning authority or land planning commission) why granting a CUP to the owner will not adversely impact surrounding properties, including adjacent ones, and (ii) may present other arguments in support of granting such permit, including why such use may have a positive impact with respect to the local community.¹¹⁶ For a CUP to be granted, the local zoning authority or land planning commission must find that the use for which the property owner seeks the CUP will not have an adverse impact on the community or harm its neighbors.¹¹⁷

¹¹¹ *Id.* Specifically, such subdivision requires that “no commercial [wind turbines] shall be located where the center of the tower is within a distance of five (5) rotor diameters from a lot line that is perpendicular to and downwind of, or within forty-five (45) degrees of perpendicular to and downwind of, the dominant wind direction.” See *Wind Energy Partnership v. NextEra Energy Resources, LLC*, Case No. 5:11-cv-02050-R-OP, Defendants’ Notice of Removal to Federal Court from Riverside Superior Court (Case No. INC1108424), 271, 324 (C.D. Cal. Dec. 27, 2011) [hereinafter Plaintiffs’ Amended Complaint].

¹¹² Plaintiffs’ Original Complaint, *supra* note 1, at 284.

¹¹³ *Id.*; see also *Meters to Feet Conversion*, ASKNUMBERS.COM, available at <http://www.asknumbers.com/MeterstoFeetConversion.aspx> [<https://perma.cc/5JVS-JEGL>] (last visited Mar. 20, 2016) (explaining meter conversion).

¹¹⁴ See *id.*

¹¹⁵ *What is a conditional use permit?*, FREE ADVICE, available at http://real-estate-law.freeadvice.com/real-estate-law/zoning/conditional_use.htm [<https://perma.cc/W826-AE77>] (last visited Mar. 20, 2016).

¹¹⁶ *Id.*

¹¹⁷ *Planning Permit Information: Planning Permit Application*, LBPLANNING, available at http://www.lbds.info/planning/current_planning/planning_permit_information.asp [<https://perma.cc/62WH-4SYU>].

On or around February 24, 2010, Windpower Partners applied for a CUP for its Repowering, which encompassed the portion of the City's Re-Power Project on the Kime lot, and filed its CUP application in conjunction with applications for variances (special government-granted permits that make exceptions to the existing law) from the setback requirements under the Zoning Code.¹¹⁸

On or about March 23, 2010, a NextEra employee, Joseph Farrigan, emailed an unexecuted "Declaration of Restrictive Covenants" (the "Proposed Cabazon Agreement") as well as proposed purchase and sale documents for an unrelated parcel (the "Cabazon Parcel") to WEP, Brad Adams, and the following entities who possessed ownership interested in the wind turbines located on the Karen Avenue Windfarm were: William W. Adams, an individual ("William Adams"); Whitewater Development Corporation, a California corporation ("Whitewater Development"); Whitewater Energy Corporation, a California corporation ("Whitewater Energy"); and San Gorgonio Farms, Inc., a California corporation ("San Gorgonio Farms").¹¹⁹ The Proposed Cabazon Agreement partially stated Windpower Partners' intent to engage in the Repowering of the Windpower Partners Property, which would include replacing and/or relocating existing wind turbines and potentially adding new wind turbines.¹²⁰ The Proposed Cabazon Agreement also contained a provision stating that "WEP has agreed not to object to or interfere with [Windpower Partners'] Repowering or to claim that the [Windpower Partners Property], after the Repowering, *causes waking or otherwise interferes with the wind flow available* to the WEP Wind Farm" (emphasis added).¹²¹ Additionally, the Proposed Cabazon Agreement stated that WEP agreed not to object to any application Windpower Partners makes for government-granted permits with respect to the Repowering.¹²² A legal description of the Windpower Partners Property was attached to the Proposed Cabazon Agreement, and stated that "WEP hereby covenants and agrees not to assert any claims against [Windpower Partners] or its successors or assigns" with respect to the Repowering.¹²³ Brad Adams called Joseph Farrigan, confirming receipt of the Proposed Cabazon Agreement, but stating WEP's refusal to sign such agreement

¹¹⁸ Final Ruling on Motion for Summary Judgment, *supra* note 109, at 744–45.

¹¹⁹ *Id.* at 745.

¹²⁰ *Id.* at 745–46.

¹²¹ *Id.* Note that as of March 23, 2010, the WEP wind farm only consisted of the Karen Avenue Windfarm and did not include the 16-Acre Property.

¹²² *Id.*

¹²³ *Id.* at 746–47.

as WEP did not want such agreement with respect to the sale of the Cabazon Parcel to include the Repowering-related provisions.¹²⁴

Several months later, on approximately June 17, 2010, Mr. Farrigan along with Keith Jenkins, another NextEra employee, met with William Adams and Brad Adams, signed the purchase and sale agreement with respect to the Cabazon Parcel, and had a lunch meeting thereafter.¹²⁵ During such meeting, both William Adams and Brad Adams expressed their general support for NextEra's Repowering project and stated their intent not to interfere with or challenge such project, despite their not wanting to sign the Proposed Cabazon Agreement.¹²⁶ The sale of the Cabazon parcel closed, without the Proposed Cabazon Agreement being executed.¹²⁷

The City of Palm Springs (the "City") issued a Notice of Intent ("NOI") to adopt a Mitigated Negative Declaration ("MND") for the Repowering Project of which the Windpower Partners Repowering Project was a part.¹²⁸ The MND stated, in part, the City's determination that any potentially significant impacts caused by the Repowering Project could be mitigated to a less than significant level.¹²⁹ This NOI for the MND was subject to a 30-day public review process, beginning on November 8, 2010, and ending on December 7, 2010, during which time interested persons and public agencies could submit their written responses and comments on such MND.¹³⁰ The City published an announcement of the NOI in a local publication, the *Desert Sun*, on November 6, 2010.¹³¹ The City also scheduled a public hearing to discuss approval of the MND for the Repowering project (the "Hearing").¹³² To publicize notice of the Hearing, which was scheduled to be held on December 8, 2010, the City also did the following. First, on November 23, 2010, the City mailed notice of the Hearing (the "Mailed Notice") to all landowners owning property located within a 400-foot radius of the impacted properties, as well as posted a Notice of Public Hearing on the City Hall legal notice posting board and in the Office of the City Clerk.¹³³ On December 2, 2010, the City made

¹²⁴ Final Ruling on Motion for Summary Judgment, *supra* note 109, at 747.

¹²⁵ *Id.*

¹²⁶ *Id.* at 747–48.

¹²⁷ *Id.* at 748.

¹²⁸ *Id.*

¹²⁹ *Id.* It is important to note that this determination was based on the facts and circumstances existing at the time.

¹³⁰ Final Ruling on Motion for Summary Judgment, *supra* note 109, at 748–49.

¹³¹ *Id.* at 749.

¹³² *Id.*

¹³³ *Id.*

publicly available the meeting agenda for the Hearing by posting on the City Hall exterior bulletin board and at the Planning Services counter.¹³⁴

In August 2011, approximately eight months after the Hearing, WEP purchased the 16-Acre Property from Northern Trust (as indicated by the left-pointing arrow across such property in Figure 1).¹³⁵ On or about September 2011, construction began on the Two Turbines.¹³⁶

In Plaintiffs' Amended Complaint, Plaintiffs (as defined herein) allege, among other things, the following. First, Plaintiffs allege that their due process rights were violated under the Fourteenth Amendment of the United States Constitution and under the Constitution of the State of California, as Plaintiffs did not receive reasonable notice of the Hearing before the City deprived them of a "significant property interest."¹³⁷ Second, Plaintiffs allege that the location of the Two Turbines violated the mandated property line setback limit set forth in the Zoning Code, as neither Plaintiffs nor Northern Trust had provided one of the Defendants (as defined herein), NextEra, with a signed wind access waiver.¹³⁸ Moreover, Plaintiffs allege that the City Manager and the City were negligent insofar as they had a duty to enforce the Zoning Code against Defendants but failed to do so.¹³⁹ Plaintiffs estimate that the breach of this duty would cause them harm insofar as they would sustain more than \$14 million in damages over the twenty-year life cycle of the CUPs and variances for which Windpower Partners applied with respect to its Repowering. Specifically: (i) over \$2 million in lost revenues from annual energy loss at each downwind turbine on Plaintiffs' Karen Avenue Windfarm (the "Karen Avenue Turbines"), caused by the location of the Two Turbines, (ii) the depreciation of the value of each of the Karen Avenue Turbines due to increased "wear and tear" as a result of the location of the Two Turbines, and (iii) over \$12 million in potential lost revenue caused by Plaintiffs' effectively being precluded from placing and operating new wind turbines on the 16-Acre Property.¹⁴⁰ Plaintiffs further allege that

¹³⁴ *Id.* at 749–50.

¹³⁵ See Plaintiffs' Original Complaint, *supra* note 1.

¹³⁶ *Id.* at 284.

¹³⁷ Plaintiffs' Amended Complaint, *supra* note 111, at 318.

¹³⁸ *Id.* at 319.

¹³⁹ *Meters to Feet Conversion*, *supra* note 113. The Zoning Code requires a minimum setback of five (5) rotor diameters from adjacent property owner's property line, or roughly two-thirds of the length of a football field.

¹⁴⁰ *Id.* at 320, 325. What is not stated, but what Plaintiffs' allegations for the approximately \$14 million in damages directly imply, is that damages will occur as a result of the wind wakes generated from each of the Two Turbines and related wake effect impacts from such turbines will transpire.

the Two Turbines constitute both a public nuisance due to their alleged violations of the Zoning Code as well as a private nuisance under section 3479 of the California Civil Code.¹⁴¹ Ultimately, Plaintiffs sought, among other things: (i) the setting aside of the variances and other approvals granted at the December 8, 2010 Hearing; (ii) a rehearing for such variances and approvals in which Plaintiffs would have an opportunity to participate; (iii) a temporary restraining order and a permanent injunction preventing NextEra from the further construction of the Two Turbines; (iv) compensatory and other damages; and (v) attorneys' fees, costs, and expenses with respect to this litigation.¹⁴²

On June 11, 2012, Honorable Manuel L. Real of the United States District Court for the Central District of California granted summary judgment in favor of the Defendants, dismissing the Plaintiffs' claims for injunctive relief and damages.¹⁴³ Specifically, Judge Real held that because there is no rigid formula for the type of notice that must be given to satisfy due process, and because the necessary notice will vary according to the circumstances and conditions of each case, notice had properly been provided to the Plaintiffs through the Proposed Cabazon Agreement.¹⁴⁴ The notice was satisfactory because such agreement informed Plaintiffs of Defendants' (as defined herein) Repowering project that would potentially cause wake effects or otherwise interfere with Plaintiffs' wind flow.¹⁴⁵ Additionally, Judge Real held that Plaintiffs' claim was barred due to Plaintiffs' purchasing the 16-Acre Property in August 2011, a date well after the date that the City completed its permitting process for the Re-Power Project.¹⁴⁶ Judge Real noted that the prior owner of the 16-Acre Property, Northern Trust, is not a party to this lawsuit and that Plaintiffs only allege generally that Northern Trust lacked notice, rather than providing specific facts in support of such allegation.¹⁴⁷

¹⁴¹ *Id.* at 323, 324. Specifically, section 3479 of the California Civil Code defines a nuisance as “[a]nything that is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property.” *See id.* at 324.

¹⁴² *Id.* at 326–28.

¹⁴³ Final Ruling on Motion for Summary Judgment, *supra* note 109, at 752. For Summary Judgment to be granted, there must be no dispute between the plaintiffs and the defendants in a lawsuit as to the facts set forth; both plaintiffs and defendants agree that the facts provided are true and correct, and a determination of which party should prevail in such lawsuit can be made based on such facts.

¹⁴⁴ *Id.*

¹⁴⁵ *Id.* at 751.

¹⁴⁶ *Id.*

¹⁴⁷ *Id.* at 751–52.

IV. REASONS WHY THE INSTANT CASE IS SIGNIFICANT

A. *Significance of the Parties (Plaintiffs and Defendants) in the Complaint*

An interesting aspect about the litigation in the Instant Case is how Plaintiffs present their case. First, the collection of persons and entities constituting the Plaintiffs is intriguing, due to which entities are included and which entities are not. Plaintiffs collectively fall into two separate categories: (i) the Karen Avenue Windfarm landowner, WEP ("Plaintiff Landowner") and (ii) the Karen Avenue turbine owners: William Adams; Whitewater Development; and San Gorgonio Farms (collectively, "Plaintiff Turbine Owners" and together with Plaintiff Landowner, the "Plaintiffs"). Notably, Whitewater Energy is also an owner of the Karen Avenue Windfarm turbines, but is not named as a plaintiff in the lawsuit. The reason for this omission is unclear on the face of the pleadings.

Defendants also fall into two separate categories: (i) the affiliate of and/or predecessor-in-interest of the larger company (Windpower Partners), and the larger company itself (NextEra), and (ii) the governmental entities and related parties (the City; the City Council of the City of Palm Springs in its capacity at the governing and legislative body of the City; David H. Ready in his capacity as City Manager and enforcer of the City's Municipal Code; and Does 1–500 representing other respondents, defendants, and/or real parties for whom Plaintiff did not know the true names) (all persons and entities listed in (i) and (ii) of this paragraph, collectively, "Defendants"). Notably, NextEra is a powerhouse in the wind energy field, as it is the largest generator of wind power in North America.¹⁴⁸ Obtaining a judgment against an entity with few or no assets would not be in Plaintiffs' best interest. Windpower Partners may be a holding company or a company with minimal or no assets to satisfy the payment of any large judgment amount against it that a court may issue in Plaintiffs' favor. In contrast, NextEra, an affiliate and potentially parent company of Windpower Partners, likely possesses vastly deeper pockets than Next Era, and therefore likely would be able to satisfy a court-issued monetary judgment in Plaintiffs' favor.¹⁴⁹ This is probably why throughout Plaintiffs' Amended Complaint, Plaintiffs

¹⁴⁸ See *Who We Are*, NEXTERA ENERGY RES., available at <http://www.nexteraenergyresources.com/who/index.shtml> [<https://perma.cc/G7S2-4WN4>].

¹⁴⁹ *Id.*

consistently refer to NextEra, rather than to Windpower Partners, as the offending entity.¹⁵⁰

Moreover, as Judge Real noted, the prior owner of the 16-Acre Property, Northern Trust, is not named as a party in the Instant Case.¹⁵¹ While there may be a number of reasons for this unknown from the information disclosed in the pleadings, as speculation, one possible reason could be that Plaintiffs may have been considering filing a separate cause of action against Northern Trust with respect to: (i) Northern Trust's failure to disclose or sufficiently inform Plaintiffs about the City's Re-Power Project, the Hearing, the Mailed Notice, and/or other matters presented in the Instant Case and/or, (ii) breach of contract violations that may have existed between Northern Trust and Plaintiffs that relate to matters presented in the Instant Case. If Northern Trust was named as a defendant in this matter, Plaintiffs potentially would be precluded from bringing a separate cause of action against Northern Trust for the same offense; doing so would effectively cause Northern Trust to be tried for the same offense twice, something which the double jeopardy provision under the Fifth Amendment to the U.S. Constitution prohibits.¹⁵²

B. The Instant Case Highlights the Need to Present and Explain Scientific Concepts Key to One's Case, Such as Wake Effects

Both Plaintiff Landowner as well as Plaintiff Turbine Owners knew their respective income streams would be adversely impacted by wind wakes the Two Turbines would cause. Curiously, Plaintiffs never specifically mentioned the term "wake" or the phrases "wind wakes," "wake effect," or a similar phrase in their Causes of Action against Defendants, even though the wind wakes generated from Defendants' Two Turbines were the causal reason for the harm that Plaintiffs would sustain. Instead,

¹⁵⁰ See generally Plaintiffs' Amended Complaint, *supra* note 111.

¹⁵¹ *Id.*

¹⁵² The full text of the Fifth Amendment is as follows:

No person shall be held to answer for a capital, or otherwise infamous crime, unless on a presentment or indictment of a Grand Jury, except in cases arising in the land or naval forces, or in the Militia, when in actual service in time of War or public danger; *nor shall any person be subject for the same offense to be twice put in jeopardy of life or limb*; nor shall be compelled in any criminal case to be a witness against himself, nor be deprived of life, liberty, or property, without due process of law; nor shall private property be taken for public use, without just compensation.

See U.S. CONST. amend. V (emphasis added).

such terms and phrases are conspicuously absent in the Causes of Action listed in both Plaintiffs' Original Complaint and in Plaintiffs' Amended Complaint.¹⁵³ As a result, missing from Plaintiffs' pleadings is: (i) a scientific explanation for why, exactly, the Two Turbines would cause Plaintiffs' Karen Avenue Turbines to experience unique and grave harm in a manner distinct from that experienced by other landowners that the City's Re-Power Project impacted and, (ii) why the wakes that the Two Turbines would cause could not be mitigated to a less than significant level.¹⁵⁴ This omission is even more mysterious insofar as Plaintiffs could have provided particularized, distinguishing facts about the wake rose,¹⁵⁵ the size and magnitude of the wakes generated, and why Plaintiff's property would be waked in a manner so egregious as to distinguish Plaintiffs' situation from every other person in the small impacted group of downwind landowners who would suffer as a result of the City's Re-Power Project as implemented through the Repowering.

In short, Plaintiffs did not educate or inform the court sufficiently enough that the Two Turbines whose rotor diameters are more than *double* the size of the KVS-33 360 kilowatt wind turbines that the Two Turbines were replacing on the Kime lot. Plaintiffs also did not sufficiently convey to the court that the Two Turbines would generate wakes that were much larger, would cause significantly more severe turbulence and significantly diminished wind speeds, and would extend substantially further than those the KVS-33 360 kilowatt wind turbines would create, causing more severe and more significant impacts to wind flow across the 16-Acre Property and the Karen Avenue Windfarm and resulting in a nonmitigatable amount of projected annual lost revenues and increased turbine wear and tear.¹⁵⁶

When presenting one's case in a lawsuit, it is generally unclear how knowledgeable any given judge, jury, or other tribunal may be with respect to certain scientific concepts and information. Failure to adequately explain or present certain scientific concepts crucial to one's case can potentially be detrimental to such a case's outcome. In the Instant Case, the extent of scientific knowledge and familiarity Judge Real possessed with respect to wind wakes is unknown. However, one can speculate that even if Judge Real maintained a basic knowledge about wind wakes,

¹⁵³ See *id.*; Plaintiffs' Amended Complaint, *supra* note 111, at 318–26.

¹⁵⁴ See Plaintiffs' Amended Complaint, *supra* note 111, at 318.

¹⁵⁵ A "wake rose" is the individualized pattern a particular wake forms. Diamond & Crivella, *supra* note 2, at 202.

¹⁵⁶ See Plaintiffs' Amended Complaint, *supra* note 111, at 318.

Plaintiffs may have presented a more compelling argument in support of their estimated monetary losses and other damages had they provided in their pleadings even a brief explanation of wind wakes, wake effects, and the generally accepted distance the scientific community agrees wakes travel, or had they at least included reference to substantial wind wakes as the cause of their estimated damage.¹⁵⁷ Incorporation of such explanation would not only have demonstrated Plaintiffs' familiarity with the concept of wake effects, but would have also lent additional credibility to Plaintiffs' causal argument for damages, potentially strengthening Plaintiffs' due process violation claim. It is unknown how, if at all, Plaintiffs' omission of the scientific basis linking the cause of damage (wake effects from Defendants' turbines) to Plaintiffs' future harm and related damages (in the form of lost revenues as a consequence of such wake effects) impacted Plaintiffs' case. Notably, Defendants raised the issue of wind wakes in the Final Ruling on Motion for Summary Judgment in their argument that Plaintiffs' due process rights were not violated because they received adequate notice of potential wakes that the Two Turbines could cause.¹⁵⁸

C. *Governmentally Approved Community Zoning Actions May Quash Any Entitlement to Natural Wind Flow*

Both the Instant Case and the First Danish Case contribute to the body of case law precedent that governmentally approved community zoning actions may quash any entitlement a landowner may otherwise have had to the natural wind flow across such person's land parcel. In the Instant Case, looking at the evidence presented in a light most favorable to Plaintiffs would have required Judge Real to presume that Plaintiffs possessed an entitlement to unobstructed wind flow across both Plaintiffs' 16-Acre Property and the Karen Avenue Windfarm.¹⁵⁹ However, even if Judge Real had recognized that Plaintiffs had a valid, compensable property right to unobstructed wind flow across Plaintiffs' 16-Acre Property and the Karen Avenue Windfarm, the fact that Plaintiffs were given notice and should have been aware of the City's Re-Power Project and all that it entailed, including the Defendants' Repowering and construction of the Two Turbines, effectively served as sufficient reason for

¹⁵⁷ See Diamond & Crivella, *supra* note 2, at 202.

¹⁵⁸ See Final Ruling on Motion for Summary Judgment, *supra* note 109, at 725.

¹⁵⁹ See generally Final Ruling on Motion for Summary Judgment, *supra* note 109.

such notice to override and quash any existing wind rights Plaintiffs may have had.¹⁶⁰ Essentially, then, the ruling in the Instant Case is consistent with precedent from the First Danish Case, as in both cases, notice and awareness of approved local community zoning actions trumped any wind rights an individual may have had. Moreover, by analogy to such foreign precedent, it can be argued that Plaintiffs assumed the risk of purchasing the 16-Acre Property for the purpose of erecting commercial wind turbines on it, given that the Hearing had already been held and that the City's Re-Power Project had already been approved approximately eight months in advance of Plaintiffs' purchase.¹⁶¹

D. Time of Ownership of Land; Temporal Element Plays a Key Role

The temporal element of land ownership and the look-back period for determining land ownership during key events in the Instant Case played a crucial role in ultimately determining the Instant Case's outcome. From Plaintiffs' perspective, as the present owner of both its original land (the Karen Avenue Windfarm) and its newly acquired, immediately adjacent land (the 16-Acre Property), both pieces of land effectively constitute one merged, contiguous parcel (as illustrated by the two left-pointing arrows in Figure 1). This is the reason why it is unclear in both Plaintiffs' Original Complaint and in Plaintiffs' Amended Complaint, but is later clarified in the Final Ruling on Motion for Summary Judgment, that there are three, rather than two, parcels of land involved in the Instant Case. Timing of land ownership must be taken into account from a due process perspective to determine who the landowner was at the time notice of governmental action was provided. The Instant Case turns, in substantial part, on the fact that Northern Trust was the owner of the 16-Acre Property at the time the City provided Mailed Notice of the Hearing to all landowners owning property located within a 400-foot radius of the properties the City's Re-Power Project was going to impact.¹⁶² The burden fell on Northern Trust to be aware of such Hearing, and to attend such Hearing if Northern Trust so chose. The pleadings do not state whether Northern Trust, as the immediately prior owner of the 16-Acre Property, disclosed to WEP that it (Northern Trust) had received such Mailed Notice.¹⁶³

¹⁶⁰ *Id.* at 724.

¹⁶¹ *Id.*

¹⁶² *Id.* at 725.

¹⁶³ See generally Plaintiffs' Amended Complaint, *supra* note 111.

One lesson that can be learned from the Instant Case is that if a potential land buyer is considering purchasing a parcel from a particular landowner, it is in such buyer's best interest to make it a priority as part of the pre-purchase due diligence process to have such original landowner disclose in writing and not conceal or omit a material fact, such as the receipt of notice of public hearings regarding events that will have a future impact on the subject land being sold. Such disclosure requirement may appear in the original landowner's representations and warranties in a Purchase and Sale Agreement or similar purchase agreement with respect to the sale to the buyer of such land. However, even if the buyer is able to prove in court that such original landowner breached certain representations or warranties or otherwise failed to disclose such a material fact, the buyer may win a judgment against the original landowner, but still may ultimately "lose" insofar as the original landowner may not be able to make the buyer whole for such buyer's future lost profits and other damages; the amount of such future losses and damages collectively may exceed the amount such original landowner is able to pay. Therefore, while such buyer may legally triumph over such landowner, the losses and damages such buyer suffers nevertheless may not be fully recoverable.

E. Public Policy Implications re: Repower Projects, Encouragement of Future Development by Large Developers

Public policy may play a discrete, silent role in how cases such as the Instant Case are decided. With respect to a repowering project such as the City's Re-Power Project, there is a social benefit to the general public insofar as wind turbines with more technologically advanced and improved designs can generate more clean energy than their older, less efficient counterparts that they are replacing.¹⁶⁴ Towns and counties generally want to support projects which are deemed to be in the public interest, particularly if there are additional benefits to these projects. Stimulation to the local economy in the form of job creation for various tasks related to installing commercial wind turbines, as well as these jobs enabling their holders to fortify the local community's economy through their purchases of goods and services throughout the duration of their work, may be viewed as beneficial and in the public interest. In the Instant Case, the City's Re-Power Project likely was viewed as offering

¹⁶⁴ *Next-Generation Wind Technology*, U.S. DEP'T OF ENERGY, available at <http://energy.gov/eere/next-generation-wind-technology> [<https://perma.cc/GFG4-9FBC>] (last visited Mar. 20, 2016).

such potential benefits to the City, making the construction of the Two Turbines as part of the City's Re-Power Project in the City's public interest—an interest that weighed heavier in the balance than the potential entitlement to unobstructed wind flow that a small impacted group of individual landowners possessed and which the variances and CUPs granted at the City's Hearing overrode. Consequently, in the Instant Case, there may have been public policy considerations not evident in the pleadings themselves that also played a role in Judge Real's ruling in favor of Defendants.

From a purely public policy perspective, it is interesting to postulate how the court may have ruled if NextEra or another major wind farm developer with substantial amounts of assets, along with one or more of its affiliates, were instead the plaintiffs and downwind landowners of the 16-Acre Property in August 2011, and if the Plaintiffs were instead the defendants and upwind landowners of the Windpower Partners Property. NextEra, as a major wind farm developer, may have a potential future interest in building new wind farms or acquiring and repowering other existing wind farms in and around the City. Moreover, the size of such major developer's future wind farm on such other acquired property could be larger than a smaller-in-size developer's future wind farm. Ruling against a major developer or its affiliate in a lawsuit such as the Instant Case may cause such major developer to lose interest in developing other future projects in or around the city in which the land underlying such lawsuit is located, causing such major developer to forum shop in other markets for parcels in other cities on which to site its future wind farm(s). If this occurs, a city, such as the City, could potentially lose future revenues that would have otherwise flowed to it from the revenues associated with the construction of the major developer's wind farm(s). Public policy considerations, therefore, may play a significant role in the outcome of certain cases and may not be evident from the facts disclosed by either a plaintiff or defendant in their respective court pleadings.

CONCLUSION

As the Instant Case illustrates, a landowner can either be an uninformed victim or a well-informed purchaser with protected wind rights when it purchases or leases a particular parcel. Potential purchasers, developers, and present landowners need to be proactive and take the initiative to launch their own investigative research and enter into certain legal

contracts or other legally binding arrangements with their adjacent neighbors to protect their interests in unobstructed wind flow over a particular parcel. Best practice dictates that potential land purchasers, developers seeking to lease a certain parcel, or current landowners should consider undertaking the following measures to protect their interests.

First, conduct due diligence to become familiar with applicable federal, state, and local laws. Being familiar with such laws governing the land under consideration for purchase or lease is crucial. For those contemplating the purchase or lease of land abroad, find out whether or not the applicable jurisdiction recognizes wind rights as entitlements or property rights. Such information will provide guidance as to whether an adjacent neighbor's infringement of those rights may be legally compensable.

Second, presuming an established setback limit exists, evaluate whether such limit, given current scientific data on how far wind turbine wakes extend, establishes a great enough buffer zone between the property line with the adjacent neighbor and the closest point such neighbor may site a commercial wind turbine on its property. Setback limits may not reflect recent scientific findings or agreed-upon facts within the scientific community insofar as such setback limits may be much shorter than current scientific data indicates a wind wake may extend. Consequently, the protections a setback limit affords for safety purposes may not offer protections sufficient to shield a downwind landowner's or developer's economic interests. As a result, prior to purchasing or leasing a parcel, a potential purchaser needs to be independently cognizant of: (i) whether or not a zoning ordinance or mandatory setback limit is in place that governs both the property being considered for purchase and the immediately adjacent upwind neighbor's property; (ii) whether such setback adequately limits, anticipates, and allows for wake effects that may impact wind turbines sited on the parcel being considered for purchase or other adjacent parcels; and (iii) whether such setback limit takes into account matters other than those of strictly safety, including recognizing adjacent landowners' right to enter into legal contracts between themselves that modify the established setback limit, such as the Riverside County, California ordinance does, as discussed above.

Third, land purchasers should be mindful of any type of notice given with respect to activities the local community or actions an adjacent landowner may be taking that may adversely impact wind rights across the parcel being considered for purchase. Notice varies according to the facts and circumstances of every case. However, a landowner may be deemed to have assumed the risks associated with a plan that is already

in place and that modifies standard setback limits or other applicable laws. Consequently, someone considering purchasing or leasing a particular parcel should research whether there were any governmental hearings, rulings, decisions, or other measures at which such zoning modifications were discussed. At a minimum, someone who is considering purchasing or leasing land should independently investigate: (i) what, if any, recent public hearings or public announcements may have occurred at the local (city or town), county, or state level that may impact such parcel; and (ii) what, if any, recent ordinances, rules, or laws have been passed, are pending enactment, or are under consideration for approval by the land-governing authority at the local, county, or state level that may impact or abridge the rights of a landowner with respect to such parcel presently or in the future. Moreover, after a particular tract of land has been purchased, the new purchaser should pay particular attention to announcements that such purchaser may receive from the local government or from others disclosing such governmental activities or their own activities. Be aware that such announcements may be considered to constitute notice and may appear in draft versions, rather than only final versions, of legal documents received, regardless of whether the overall or primary purpose of such documents is unrelated to wind rights with respect to the parcel to which such notice pertains.

Fourth, land purchasers should enter into written legal contracts with both developers who want to site wind turbines on their land, as well as the seller from whom the land is being purchased, to legally establish wind rights and protections. Landowners should strongly consider entering into a Wind Lease Agreement and an Option Contract with a developer, so that the rights and expectations of the parties are clearly defined, including the parameters for royalty payments, non-obstruction easements, and other matters. Also, potential purchasers should strongly consider inserting disclosure and certain representation and warranty requirements into a Purchase and Sale Agreement with respect to the seller of a particular parcel of land, so that such seller is legally required to disclose all applicable governmental notices or any other governmental actions about which it has knowledge that may detrimentally impact such parcel.

Finally, potential land purchasers should get a sense of the constituents of the community as well as public policy factors emanating from such community that may impact the rights of an upwind landowner or downwind landowner if a dispute arises. Consider historic precedent to which the community may look for guidance in resolving a wind

rights or wind turbine siting dispute, particularly with respect to resolving a dispute in the best interests of the community so that fairness considerations for all interested parties are maximized. Also, potential land purchasers and developers should consider their locality and, if applicable, national stature relative to the local community and its future needs, contemplate how the best interests of the local community may influence the rulings and pronouncements of local decision makers, and what decisions made in the interest of advancing public policy considerations may mean for the upwind landowner versus the downwind landowner in a legal dispute.

Constitutional rights, public policy, science, and individuals' entitlements or property interests are all factors that need to be considered collectively so that a fair balance can be struck for both landowners and the greater local community. Being adequately informed about scientific phenomena that impact a large financial investment is crucial for a purchaser who wants to reap the benefits of the item purchased. In the case of land purchases, wake effects are a scientific phenomenon with which potential land purchasers and developers need to be very familiar in order to take sufficient legal and other precautions as protective measures against the harm wind wakes may cause. By being informed and taking such precautions, addressing wake effects may be as simple as a cool breeze.

