IS THERE A FUTURE FOR WIND ENERGY IN THE BAYOU STATE?

THE ANSWER, MY FRIEND, IS BLOWIN' IN THE WIND

Symposium on "Disruptive Technologies"
Journal of Energy Law and Resources

February 23, 2018

Patrick S. Ottinger
OTTINGER HEBERT, L.L.C.
P. O. Drawer 52606
1313 West Pinhook Road (70503)
Lafayette, Louisiana 70505-2606
(337) 232-2606
e-mail: psottinger@ohllc.com

Member, Louisiana and Texas Bars

Adjunct Professor of Law, Paul M. Hebert Law Center
Louisiana State University
Baton Rouge, Louisiana

TABLE OF CONTENTS

IS THERE A FUTURE FOR WIND ENERGY IN THE BAYOU STATE?

THE ANSWER, MY FRIEND, IS BLOWIN' IN THE WIND*

Patrick S. Ottinger
OTTINGER HEBERT, L.L.C.
P. O. Drawer 52606
1313 West Pinhook Road (70503)
Lafayette, Louisiana 70505-2606
(337) 232-2606
e-mail: psottinger@ohllc.com

Member, Louisiana and Texas Bars
Adjunct Professor of Law, Paul M. Hebert Law Center

I. Introduction

A. Preface:

One should always be concerned when another conversant starts the conversation with, "to be honest with you." One is entitled to wonder, "What, you have not been honest with me up to now?"

So I must "be honest with you," and say that, when invited to participate in this Symposium, I did not quite understand what is meant by a "disruptive technology." Thanks to Professor Google, one finds that a "disruptive technology is one that displaces an established technology and shakes up the industry or a ground-breaking product that creates a completely new industry."[1] So be it; I now understand.

---

* *Blowin' in the Wind*, Bob Dylan (1941-__).

[1] http://whatis.techtarget.com/definition/disruptive-technology, last visited February 9, 2018.

In an article written by your author, and published in the Journal of Energy Law and Resources,[2] the earliest days of the oil and gas industry in Louisiana were chronicled, particularly as it relates to the remarkable work of the courts of Louisiana in formulating a body of law to address legal issues arising in that nascent industry. Therein, your author characterized the participants in that emerging industry—both "oil men," lawyers and judges—as "pioneers."[3]

This term, "pioneer," was intended to capture or elucidate the notion that a new industry (of immense importance, one might add) was being developed without the benefit of a legal framework to assist courts in the adjudication of a panoply of legal issues presented in those early days. Our "pioneers" of that day, devoid of any legal tools or guidance whatsoever, advanced this legal argument or that, in pursuit of a judicial resolution of a novel issue of law.

Might the Bayou State, even a century and a decade and a half after its first commercial oil and gas well,[4] soon constitute a new frontier in the pursuit of energy, calling forth a new generation of "pioneers" to harness the wind? This paper examines that question.

B. Wind in our History and Culture:

A proposition that cannot be seriously challenged is that the wind is as old as civilization itself. Numerous references to wind can be found in the Bible:

> Then Moses stretched out his hand over the sea; and the LORD swept the sea back by a strong east wind all night and turned the sea into dry land, so the waters were divided.[5]
>
> He caused the east wind to blow in the heavens, and by His power He directed the south wind.[6]

---

[2] Patrick S. Ottinger, *From the Courts to the Code: The Origin and Development of the Law of Louisiana on Mineral Rights*, 1 JOURNAL OF ENERGY LAW AND RESOURCES 5 (2012).

[3] *Id*., Part II.D.

[4] On September 21, 1901, the first oil well in Louisiana, the Jules Clement No. 1, was successfully completed in a rice field on the "Mamou Prairie" in the community of Evangeline near Jennings.

[5] *Exodus*, 14:21-11.

[6] *Psalm*, 78:26.

> For behold, He who forms mountains and creates the wind, and declares to man what are His thoughts, He who makes dawn into darkness, and treads on the high places of the earth, The Lord God of hosts is His name.[7]

But for the wind sufficient to propel the Niña, the Pinta, and the Santa Maria, the discovery of America might have been delayed until another mode of maritime propulsion was discovered and employed.

And we cannot ignore Don Quixote. Set in La Mancha, a region in Central Spain in the early 15th Century, our noble hero undertakes to pursue justice and revive chivalry, by "jousting at windmills."[8]

In a more modern context, who is not familiar with *Gone With the Wind*, starring Clark Gable and Vivien Leigh, in Atlanta at the conclusion of the Civil War?

Wind is also prevalent in popular song, embedded in too many lyrics to even mention, although the title to this paper pays due to the 2016 Noble Prize Winner in Literature, Bob Dylan.

Finally, one should not overlook the title song of the long running Broadway play, *Oklahoma*, and its famous score penned by Rodgers and Hammerstein, who were both observant and prescient when they wrote:

> Oklahoma, where the wind comes sweepin' down the plain,
> And the wavin' wheat can sure smell sweet,
> When the wind comes right behind the rain.[9]

These popular lyrics are prescient when one recognizes that Oklahoma is a leader in wind energy in the nation.[10]

---

[7] *Amos*, 4:13.

[8] Duran, Manuel and Rogg, Fay R., *Fighting Windmills: Encounters with Don Quixote*. Yale University Press (2006).

[9] *Oklahoma*, Richard Rodgers (1902-79), and Oscar Hammerstein II (1895-1960).

[10] Oklahoma ranks second (behind Texas) in wind-installed power capacity.

C. What is Wind?:

This question will either surprise you, or make you realize that you have probably given it absolutely no particular consideration in your daily life. That is, what is wind?

In the several contexts here under consideration, "wind" seems to be, well, wind! Supreme Court Associate Justice Potter Stewart would clearly have told us that "he knows it when he sees [or feels] it."[11]

Wind is (or can be) still and passive. It is air that is moving at whatever speed, sufficient to rustle the leaves, or to cool us down, or perhaps do harm or cause damage as in a hurricane or other weather event. Airspace is where the air resides, and the wind operates.

But first, why is that question even asked? One reason is that the word "wind" does not appear in the Louisiana Civil Code.[12] However, the word "air" does appear therein, in an article pointing to "air" as being a "common thing that might not be owned by anyone."[13]

Any legal analysis of wind energy (and leases pertaining thereto) would necessarily start with an understanding of the legal character of this "common thing."[14]

Although perhaps self-evident, a physicist or meteorologist might tell us that *air* must exist for *wind* to exist, since wind is simply the movement of air caused by the interaction between areas of high pressure and low pressure.[15]

---

[11] *Jacobellis v. Ohio*, 378 U. S. 184 (1964) ("I shall not today attempt further to define the kinds of material I understand to be embraced within that shorthand description ['hard-core pornography'], and perhaps I could never succeed in intelligibly doing so. But *I know it when I see it*, and the motion picture involved in this case is not that.").

[12] The "pioneers" in the nascent stage of the oil and gas industry faced the same obstacle (the absence of legislative guidance), as the Supreme Court noted that the Civil Code "is silent as to such [oil and gas] contracts; for the reason, doubtless, that minerals under and within the soil of Louisiana were not in the contemplation of the lawmakers at the time that the Code was adopted. The Legislature up to this time has been silent upon the subject of mineral rights and contracts." *Rives v. Gulf Refining Co.*, 62 So. 623, 624-25 (La. 1913).

[13] LA. CIV. CODE ANN. art. 449.

[14] These issues are examined in greater detail in Part VI.B hereof.

[15] https://scied.ucar.edu/shortcontent/wind, last visited February 9, 2018.

As the American Meteorological Association informs us, wind is "[a]ir in motion relative to the surface of the earth."[16] "The closer the high and low pressure areas are together, the stronger the 'pressure gradient,' and the stronger the winds."[17]

One commentator articulated that "[w]ind is a force, produced by air molecules colliding with each other due to differentials in air pressure and the rotation of the earth; therefore, claiming to own wind makes as much sense as claiming to own the flow of a river."[18]

So we encounter the proposition that wind is all around us, a daily experience, sometimes pleasant and comfortable (think, the proverbial "breezy summer evening"), other times quite problematic and troublesome (think, the Bayou State's Hurricanes Katrina and Rita).

Any consideration of the notion of wind as a source of energy certainly brings forth as many questions as there are leaves to be rustled. Who owns the wind? What is its character in a legal framework? How does one "harness it," and who has the right to do so? And how does one do so? Is capturing the wind worth the effort? As a potential source of energy, how does it stack up in a cost-benefit analysis?

This presentation does not guarantee that all (or perhaps even any) of these questions will be sufficiently answered, for, sometimes, simply posing a question as an imponderable will generate interest in the topic. However, this paper is motivated by the belief that a future "pioneer" might find beneficial a discussion of the potential for wind energy in the Bayou State.

D. Source of Relevant Material:

As will be demonstrated, there is a plethora of available material or literature on the subject matter of wind energy from a wide variety of sources, certainly including the World Wide Web (remember when we called it that?), as well as published articles, governmental reports, corporate propaganda, and other academic studies. Your author has availed that expansive body of material on wind energy, giving full attribution where appropriate.

---

[16] http://glossary.ametsoc.org/wiki/Wind, last visited February 9, 2018.

[17] http://www.weatherquestions.com/What_causes_wind.htm, last visited February 9, 2018.

[18] Thomas Boyd, *Who Owns the Texas Sky? An Analysis of Wind Rights in Texas*, 45 ENVTL. L. REP. NEWS & ANALYSIS 10426, 10430 (2015).

Clearly, there is as much positive commentary as there is negative, so, as is often the case, the challenge is to distinguish between unwavering advocacy of a position (both pro and con), and anecdotal or scientific reporting.[19]

To be sure, there are constituencies that support and advocate for the development and expansion of wind energy in the renewable energy space. On a virtual one-to-one, or point-counterpoint, basis, there is also no paucity of opponents to wind energy. Many of these view points are cited herein on the rationale that the reader is capable of drawing his or her own conclusions.

For these reasons, often, *caveat emptor* is the appropriate admonition, or, in contemporary terms, one should always be on the look out for "Fake News."

II. The History of Wind Energy

A. Preface:

The history of wind energy has been chronicled by the following report from the Wind Energy Foundation on its informative website:

> Since early recorded history, people have harnessed the energy of the wind. Wind energy propelled boats along the Nile River as early as 5000 B.C. By 200 B.C., simple windmills in China were pumping water, while vertical-axis windmills with woven reed sails were grinding grain in Persia and the Middle East.
>
> New ways of using the energy of the wind eventually spread around the world. By the 11th century, people in the Middle East used windmills extensively for food production. Returning merchants and crusaders carried this idea back to Europe. The Dutch refined the windmill and adapted it for draining lakes and marshes in the Rhine River Delta. When settlers took this technology to the New World in the late 19th century, they began using windmills to pump water for

---

[19] The author particularly wishes to acknowledge, and to express sincere appreciation for, the assistance and counsel of Simon Mahan, Director of Southern Renewable Energy Association, Lafayette, Louisiana, and Harry Snyder, Development Manager, Apex Clean Energy, Inc., Charlottesville, Virginia. Any errors herein, however, are solely attributable to your author.

farms and ranches and later to generate electricity for homes and industry.

American colonists used windmills to grind wheat and corn, to pump water and to cut wood at sawmills. With the development of electric power, wind power found new applications in lighting buildings remotely from centrally generated power. Throughout the 20th century, small wind plants, suitable for farms and residences, and larger utility-scale wind farms that could be connected to electricity grids were developed.

During World War II, the largest wind turbine known in the 1940s, a 1.25-megawatt turbine that sat on a Vermont hilltop known as Grandpa's Knob, fed electric power to the local utility network. Wind electric turbines persisted in Denmark into the 1950s but were ultimately sidelined due to the availability of cheap oil and low energy prices.

The oil shortages of the 1970s changed the energy picture for the U.S. and the world. It created an interest in alternative energy sources, paving the way for the re-entry of the wind turbine to generate electricity.

From 1974 through the mid-1980s, the U. S. government worked with industry to advance the technology and enable development and deployment of large commercial wind turbines. Large-scale research wind turbines were developed under a program overseen by the National Aeronautics and Space Administration to create a utility-scale wind turbine industry in the United States. With funding from the National Science Foundation and later the U.S. Department of Energy, 13 experimental turbines were put into operation using four major wind turbine designs. This research and development program pioneered many of the multi-megawatt turbine technologies in use today. The large wind turbines developed under this program set several world records for diameter and power output.

In the 1980s and early 1990s, low oil prices threatened to make electricity from wind power uneconomical. But in the 1980s wind energy flourished in

> California partly because of federal and state tax incentives that encouraged renewable energy sources. These incentives funded the first major use of wind power for utility electricity. The turbines, clustered in large wind resource areas such as Altamont Pass, would be considered small and uneconomical by modern wind farm development standards.
>
> While wind energy's growth in the U.S. slowed dramatically after tax incentives ended in the late 1980s, wind energy continued to grow in Europe, in part due to a renewed concern for the environment in response to scientific studies indicating potential changes to the global climate if the use of fossil fuels continues to increase.
>
> Today, wind-powered generators operate in every size range, from small turbines for battery charging at isolated residences to large, near-gigawatt-size offshore wind farms that provide electricity to national electric transmission systems.[20]

Wind energy remains a stable and growing component of the nation's energy generation, to the extent that the United States Energy Information Administration ("EIA") projects that wind will surpass hydroelectric power in the year 2018.[21]

B. Wind Projects in Louisiana:

There has not been a wind project brought to commercially-economic fruition in Louisiana. However, insofar as can be ascertained, at least three wind developers have pursued a wind energy project on Louisiana soil by seeking to acquire wind leases.

---

[20] http://windenergyfoundation.org/about-wind-energy/history, last visited February 9, 2018.

[21] https://www.eia.gov/todayinenergy/detail.php?id=34652, last visited February 9, 2018.

These undertakings include a project targeting a potential corridor in Evangeline and St. Landry Parishes in 2011, proposed to be developed by Invenergy Wind Development LLC, based in Chicago, Illinois, touted on its website as "North America's largest privately held renewable energy company."[22]

In 2013, plans were announced for a wind project in St. Mary Parish to be developed by Southern States Renewable Energy, Inc., based in Metairie, Louisiana. According to newspaper reports, the developer proposed "a $40 million project that, under the current plan, would bring eight 498-foot-tall wind turbines to an isolated patch of coastal land near the Port of West St. Mary."[23] The article expressed a bit of skepticism, however, by noting that "Louisiana is generally not considered a prime area for wind-energy projects." To which the developer responded that "the coast is an exception, . . ., say[ing] the site in St. Mary Parish offers some of the best potential in the state."[24]

In 2015, Apex Clean Energy of Charlottesville, Virginia, pursued the development of a wind project in Acadia, Evangeline and St. Landry Parishes by seeking a lease position in its contemplated corridor.[25] The project did not go forward.

Anecdotally, a variety of reasons resulted in the abandonment of these projects.

While there are no reports of a project that is currently proposed to be based in the Bayou State, the aforementioned developer, Invenergy, reports its co-involvement in a wind project in Oklahoma that will result in power being delivered to Louisiana customers. According to its Press Release:

> Invenergy, North America's largest independent, privately-held renewable energy company, along with GE Renewable Energy, today announced a 2,000-megawatt wind farm that will be the largest in the U.S. and second-largest in the world, once operational. The Wind Catcher facility is currently under construc-

---

[22] https://invenergyllc.com, last visited February 9, 2018. In the interest of full disclosure, this author represented a large landowner in the negotiation of a wind lease, but the project did not result in the grant of a lease.

[23] "Louisiana's First Wind Farm Planned for St. Mary Parish," (AP) reported in the Times-Picayune, July 30, 2013.

[24] *Id*.

[25] In the interest of full disclosure, this author represented the developer in the negotiation of wind leases from a number of potential lessors.

> tion in the Oklahoma panhandle and will generate wind electricity from 800 state-of-the-art GE 2.5 megawatt turbines.
>
> The wind facility is part of the $4.5 billion Wind Catcher Energy Connection that also includes an approximately 350-mile dedicated, extra-high voltage power line. American Electric Power (AEP) utility subsidiaries Public Service Co. of Oklahoma (PSO) and Southwestern Electric Power Co. (SWEPCO) are asking utility regulators in in Louisiana, Arkansas, Texas and Oklahoma to approve plans to purchase the wind farm from Invenergy upon completion of construction and to build the power line to serve PSO and SWEPCO's more than 1.1 million customers.[26]

Thus, although there is no wind energy farm presently grounded on Louisiana soil, its citizens in the northern part of the Bayou State will benefit by the receipt of electricity generated by the Wind Catcher facility in Oklahoma.

III. Legislative and Regulatory Framework

A. Preface:

Even at the "pioneering" stage of the wind energy industry, at least in the Bayou State, one encounters a variety of governmental agencies having interest in the matter of wind as an energy source. These include Federal, State and Local governmental involvement.

B. Federal Law:

(1) Preface.

The essentially *laissez faire* attitude toward wind energy is documented in a recent article about the absence of regulation in Texas, "Texas Wind Power Owes Success, in part, to Lack of Federal Regulation," wherein it is stated, as follows:

> It is no secret that Texas leads the nation in wind power capacity-at 20,000 megawatts, wind exceeds coal capacity here. It should come as no surprise,

---

[26] https://invenergyllc.com/news/invenergy-and-ge-renewable-energy-announce-americas-largest-wind-farm, last visited February 9, 2018.

then, that Texas also produces more wind energy than most countries around the world, and it leads the national (sic) with wind-industry employment.

But how did Texas' wind industry become so dominant? The answer is good policy, planning and a very Texan freedom from federal regulation, according to a report released Tuesday by the Southern Legislative Conference, a public policy forum for southern states.[27]

In 2005, Texas chose to get ahead of renewable energy development by creating Competitive Renewable Energy Zones, where transmission lines were extended to help support wind power development in isolated regions of the state. The transmission network has lured other types of renewable energy-such as solar power-to Texas, where companies find developing projects easier with existing transmission lines.

But 90 percent of Texas' grid is not regulated by the Federal Energy Regulatory Commission, so wind project permitting typically required by federal oversight does not apply in Texas, according to the South Legislative Conference report.

In Texas, state, county and local governments have no regulatory power over where a wind project is located-that is up the landowner and developer, the report said. The Texas Parks and Wildlife Department is not required to review or permit new projects, according to the report.[28]

---

[27] According to its website, the Southern Legislative Conference "is a member-driven organization and the largest of four regional legislative groups operating under The Council of State Governments (CSG)." Its mission is "to foster and encourage intergovernmental cooperation among its 15 member states," including Louisiana. The SLC has published two parts (I and II) of a "Special Series Report," entitled "Blown Away: Wind Energy in the Southern States." Available at http://slcatlanta.org/research/index.php?pub=564, last visited February 9, 2018. (URL broken for purposes of pagination and spacing).

[28] http://www.chron.com/business/energy/article/Texas-wind-power-owes-success-in-part-to-lack-12518200.php, last visited February 9, 2018.

The title (and content) of this article is a bit misleading when one remembers that ERCOT (the Electric Reliability Council of Texas) is purely intrastate, unburdened (for the most part) by Federal oversight. Certainly, with respect to Louisiana, it is part of MISO (the Midcontinent Independent System Operator, composed of parts of fifteen states and a Canadian province). Hence, the delivery of electrical power in Louisiana is a matter of interstate commerce.

Notwithstanding the foregoing, there are a number of Federal agencies having jurisdiction over a wind project (or its necessary components or processes), necessitating an array of approvals, notices, permits or licenses. These include the following.

(2) United States Fish and Wildlife Service.

The United States Fish and Wildlife Service ("USFWS") has promulgated wind energy guidelines on initial scoping, wildlife studies and findings, and impact avoidance measures to ensure compliance with the Migratory Bird Treaty Act ("MBTA"),[29] the Endangered Species Act of 1973,[30] and the Bald and Golden Eagle Act.[31] For the most part, this is voluntary coordination with guidelines, not *per se* a "permit."

These guidelines are contained in a report commissioned by the USFWS, entitled "Wind Power Siting, Incentives and Wildlife Guidelines in the United States."[32] This document contains a section entitled "Overview of State Wind Power Siting Processes," reading, as follows:

> States vary widely in their approach to the wind power siting process. The two most common approaches are through the state's public utilities commission (or similar name) or the local communities that may or may not have zoning requirements. However, since wind development is a new issue in many cases or if there is limited wind potential in the state, there is often no specific process for wind development. Only six states--Colorado, Minnesota, North Dakota,

---

29 16 U.S.C.A. § 703, *et seq*.

30 16 U.S.C.A. § 1531, *et seq*.

31 16 U.S.C.A. § 668a.

32 https://www.fws.gov/habitatconservation/windpower/AFWA%20Wind%20Power%20Final%20Report.pdf, last visited February 9, 2018.

> Oregon, South Dakota and Vermont--had wind specific siting authority at the time of this review.
>
> Typically, if a development will exceed a certain size it will fall under the jurisdiction of the utilities commission; however the threshold for consideration varies widely. In states that have a longer history of wind development, the threshold might be lower. For instance, the Public Utilities Commission in Colorado has jurisdiction over wind facilities that are greater than 2 megawatts (MW) or has a structure greater than 50 feet tall. In Minnesota, the Public Utilities Commission regulates large wind energy conversion systems which are defined as greater than 5 MW. Connecticut's Siting Council is responsible for renewable energy facilities greater than 1 MW. In contrast, New Mexico's Public Regulation Commission does not have wind-specific regulatory authority and the threshold for PRC review of energy generating facilities is 300 MW. Arizona, Massachusetts and Wisconsin also do not have wind-specific authority and the threshold for review of energy facilities in these states is 100 MW. If a facility does not fall within the threshold of consideration by the utility commission, it often will fall to local jurisdiction for review or there may be no specific siting regulation.
>
> In nearly a quarter of states, wind siting is managed by local jurisdictions. In many cases, local zoning or planning regulations impact wind siting and often there is state-based environmental permitting as well. However, in rural counties there may be no zoning or planning authority.

This Report, dated October 2007, contains a state-by-state overview of "Wind/Wildlife Guidelines," and (subject to the *caveat* set forth below) sets forth the following collected information for Louisiana as collected by its Department of Wildlife and Fisheries, to-wit:

> *EXISTING PROJECTS*
>
> Installed Utility Scale Wind Power: None
>
> *INCENTIVES FOR WIND DEVELOPMENT*
>
> Renewable Portfolio Standard: No

Incentives for Industrial or "Big Wind" Production: None[33]

Incentives for Residential and "Small Wind" Production: None

* * *

ENERGY SITING PROCESS

Power Siting Authority: Onshore wind power generation is very limited in Louisiana. Offshore development has more potential in Louisiana and possible siting might be on abandoned oil and gas platforms.[34] This development would likely be regulated through Coastal Zone Management Act or Coastal Use Permits implemented by the LA Department of Natural Resources.

Wind Specific Siting Authority? No

Role of State Fish & Wildlife Agency: LA Dept. of Fisheries and Wildlife is in negotiations to have joint environmental review but this is not finalized yet.

How are wildlife laws applied: Same as any other utility project, State can require mitigation

WILDLIFE GUIDELINES FOR WIND

Wildlife Guidelines for Wind Power Siting: No Guidance

The USFWS has not updated this information from the Louisiana Department of Wildlife and Fisheries since its 2007 Report.

---

[33] *See* Part VII.B hereof.

[34] While the idea of locating a wind turbine on an abandoned platform in the Gulf of Mexico has been discussed for a decade or so, no one has done it. Platforms are not feasible as a structural foundation by reason of the weight of a wind turbine.

(3) Federal Aviation Administration.

The Rules of the Federal Aviation Administration ("FAA") require that certain information be submitted to the FAA "at least 45 days before the start date of the proposed construction or alteration or the date an application for a construction permit is filed, whichever is earliest."[35] Among other events that trigger this filing duty is, "if you propose any of the following types of construction or alteration," such as "[a]ny construction or alteration that is more than 200 ft. AGL at its site."[36] This would include the construction of a MET and wind turbines on a wind energy project.[37]

Instituted pursuant to Section 2110 of the FAA Extension, Safety and Security Act of 2016,[38] the scope of this mandate is not without controversy.[39]

Additionally, FAA Advisory Circular No. 70/7460-1L addresses "Obstruction Marking and Lighting" for "structures that are above 499 feet AGL," and these will be studied by the FAA "to determine their effect on the navigable airspace."

To be clear, a wind turbine can be installed under 499 feet AGL, but in Louisiana, the probability would be that a turbine should be higher than 499 feet AGL which would invite greater scrutiny by the FAA.

(4) United States Army Corps of Engineers.

The relevant rules and regulations of the Army Corps of Engineers require that the aforementioned FAA Notice of Proposed Construction or Alteration (7460-1 form) also be submitted to permit the conduct of "an aeronautical study of potential obstructions."[40]

---

[35] 14 CFR § 77.7. Title 77 of 14 Code of Federal Regulations addresses "Safe, Efficient Use and Preservation of the Navigable Airspace," and became effective January 2, 2011.

[36] 14 CFR § 77.9.

[37] Currently, this pre-construction notice is accomplished on FAA Form 7460-1.

[38] 49 U.S.C.A. § 1101, *et seq*.

[39] Michael O'Rielly, Commissioner, "New Tower Marking Provision Could Use Tweaks," FCC Blog (March 10, 2017), available at https://www.fcc.gov/news-events/blog/2017/03/10/new-tower-marking-provision-could-use-tweaks, last visited February 9, 2018.

[40] Section 32.A.02c, USACE Manual No. 385-1-1 (November 30, 2014).

The Corps of Engineers has jurisdiction over lands characterized as wetlands.[41] Any wind project proposed for siting in a wetlands area would involve significant investigation and permitting by that agency.

(5) United States Department of Defense.

The United States Department of Defense ("DOD") maintains, under the Office of the Assistant Secretary of Defense for Energy, Installations, and Environment, its Siting Clearinghouse. The purpose and impact of this program is explained, as follows:

> Expanding the production and transmission of energy and ensuring a modern and resilient commercial electrical grid can impact military readiness and operations, including the Department of Defense's research, development, test, and evaluation activities.
>
> Energy production facilities and transmission projects--*-tall structures such as wind turbines* and solar power towers as well as electrical transmission towers *sited in or under designated low-altitude military training routes and special use airspace*--may present a serious collision hazard to military aircraft operations. In the national system of ground-based surveillance radars, the creation of "clutter" generated from close-by wind turbine projects can present a hazard to air safety and surveillance. Likewise, wind turbines located near military test and training ranges can impact airborne military radar capability. The momentary "glint" or longer duration "glare" reflecting off of solar systems can present a hazard to aircraft and air traffic control tower operations. Finally, the electromagnetic interference from electricity transmission lines can have an impact on critical DoD test activities.[42]

"The Clearinghouse acts as a single point of contact for Federal agencies, State, Indian tribal, and local governments, developers, and landowners," and "provides a central location for information and is a resource to help

---

[41] Section 404 of the Clean Water Act of 1972, 33 U.S.C.A. § 1344.

[42] https://www.acq.osd.mil/dodsc/index.html, last visited February 9, 2018. (Emphasis added.).

interested individuals and organizations understand the mission impact of proposed energy projects near military activities, and the Department's mission compatibility evaluation process, procedures, and mitigation opportunities."[43]

Additionally, the DOD and the Department of Homeland Security co-sponsor a "Long Range Radar Joint Program Office," or "JPO," which adopted an interim policy of objecting to any turbines proposed to be located within line of sight of any air defense or Homeland Security radar.[44]

(6) United States Department of Commerce.

Operation of radio frequencies for federal government use is managed by the National Telecommunication Information Agency ("NTIA"), which is part of the United States Department of Commerce.[45] In order to avoid the delay or derailment of a wind energy project due to late objections from a government agency, the NTIA should be notified of the proposed project during preconstruction planning. The NTIA has established a review process, wherein the Interdepartmental Radio Advisory Committee ("IRAC"), composed of representatives from various government agencies, reviews new proposals for wind turbine projects for potential impact on governmental frequencies.

In almost all cases, no adverse impact is found, and IRAC usually issues a determination within thirty days. However, notification to NTIA should not be regarded as an alternative to notifying JPO concerning military radar impact or the FAA. A developer of a wind energy farm should notify all three agencies.

This precise issue was in the news in 2017 when state and local officials opposed a wind project in North Carolina being developed for Amazon, on the basis that constituted a national security threat due to its proximity to a Navy-operated long-distance surveillance radar installation. Despite the objections, the Pentagon said that the two operations could peacefully coexist. The Navy facility utilized ROTHR ("Relocatable Over The Horizon Radar") that mitigated the opportunity or potential for interference. "While initial studies indicated a potential conflict between the Amazon wind project and the ROTHR,

---

[43] *Id*.

[44] For an explanation of the JPO, *see* http://www.windaction.org/posts/32007-long-range-radar-joint-program-office-wind-farm-brief#.WnnLxGaZPOQ, last visited February 9, 2018. (URL broken for purposes of pagination and spacing).

[45] https://www.ntia.doc.gov/home, last visited February 9, 2018.

additional data collected since that time determined that the project is not likely to affect the mission," said the Navy spokesperson.[46]

(7) Federal Communications Commission.

"At the permitting stage, a wind farm developer can encounter local resistance based on fear of loss of television or radio reception, and then after construction it can be confronted with costly claims for remediation of loss of service–radio, television or other transmission types, be it real or imagined. . . .. Accurate pre-construction identification and characterization of potential interference to electromagnetic transmissions is vital to the success of a wind-energy project, both for permitting and to avoid post-construction problems. Television and radio broadcasting signals are especially critical because they directly impact the public."[47]

To this end, the Federal Communications Commission ("FCC") established the Licensed Microwave Survey. Seemingly, this survey was developed as a "best practice" for developers. While the FCC might become involved, it is not a certain, inflexible proposition that it must do so.

(8) Federal Energy Regulatory Commission.

Although the Federal Energy Regulatory Commission ("FERC") does not have direct, particularized involvement on the "front gate" of a wind project, it might play a vital oversight role at and beyond the project's "tail gate"–the point of delivery of wind-generated electrical power to the power grid—if a project is not allowed to interconnect to the grid, or if there are significant undue economic conditions imposed on the existing wind project.

To be sure, "[i]ndependent power producers selling power wholesale, including wind projects, are normally subject to significant oversight by [FERC]. FERC has jurisdiction over transmission of electric energy in interstate commerce and the sale of such energy wholesale in interstate commerce."[48]

---

[46] http://www.thestate.com/news/state/south-carolina/article131865069.html, last visited February 9, 2018.

[47] https://www.windpowerengineering.com/construction/what-an-electromagnetic-impact-analysis-should-reveal-before-wind-farm-construction-begins/, last visited February 9, 2018.

[48] Gregory J. Blasi, Ronelle C. Porter, and Alan J. Tarr, *Wind: Projects and Transactions*, § 3.2, p. 237 (Globe Business Publishing Ltd. 2014).

C. State Law:

(1) Preface.

There has not been significant or comprehensive state action taken in Louisiana with respect to wind energy. The actions that have been taken are of two types, *viz.*, regulatory and statutory.

(2) Regulatory.[49]

In Louisiana, the Public Service Commission ("LPSC," or the "Commission") regulates "all common carriers and public utilities."[50] However, its regulatory jurisdiction over a particular generator in Louisiana would be limited to those owned by, or contracting with, a PSC-regulated utility. If the generator sells wholesale power into the market, or to a non-regulated utility (such as the Lafayette Utilities System, or "LUS"), then the Commission would have no jurisdiction over that generator.

There are a couple of LPSC Orders that address renewable generation in general, and renewable energy specifically, that would potentially apply to wind facilities.[51] These orders could result in the Commission having a role in a Louisiana wind project. These would be the Commission's Integrated Resource Planning ("IRP") rules, as well as its Renewable Portfolio Standard ("RPS").

"An RPS is a legislative requirement requiring electricity suppliers (utilities) within a specified service area to use renewable resources to produce a percentage of their electrical supply by a predetermined date. These programs assure renewable energy producers a guaranteed market for their product. Higher production costs are then shifted to the consumers within the jurisdiction who will pay for the electricity they consume at the resulting blended renewable and non-renewable cost."[52]

---

[49] Your author wishes to express appreciation to Brandon M. Frey, Executive Counsel of the Louisiana Public Service Commission, for providing his consultation and insight into the actions of the LPSC with regard to renewable energy.

[50] LA. CONST. art. IV, § 21(B).

[51] General Order issued September 20, 2013, under Docket No. R-28271 Subdocket B, In Re: Study of the Feasibility of a Renewable Portfolio Standard for the State of Louisiana, and Corrected General Order issued April 18, 2012, under Docket No. R-30021-LPSC, *ex parte*, In Re: Development and Implementation of Rule for Integrated Resource Planning for Electric Utilities.

[52] Ronald H. Rosenberg, *Making Renewable Energy a Reality—Finding Ways to Site Wind Power Facilities*, 32 WM. & MARY ENVTL. L. & POL'Y REV. 635**,** n. 8.

In reality, in Louisiana, the Commission's RPS does not mandate the purchase of renewable energy.

The IRP Order establishes a requirement that all of the Commission's investor-owned utilities ("IOUs") file an IRP, which is essentially the planning mechanism for load growth, transmission and generation needs, etc. As part of the IRP process, the IOUs do look at renewable projects, and whether those projects can be used to supply the planning needs.

More specifically on topic is the RPS Order that recognizes the LPSC's prior studies of a Renewable Energy Pilot Program ("REPP"), and the results of that program. A wind project would qualify for consideration under both the RPS and REPP; however, in neither case was a wind project in Louisiana selected by any of the three IOUs.

SWEPCO, which serves much of northwest Louisiana, satisfied its REPP requirements through the purchase of wind energy generated in the Midwest, principally from Oklahoma and Kansas.[53]

(3) Statutory.

Sparse is the legislation at the state level as pertains to a wind energy project.

A statutory scheme was enacted in 2005 to "promote the generation and use of the renewable energy derived from wind."[54] Other statutes address the authority of the State Mineral and Energy Board, in conjunction with the Secretary of the Department of Natural Resources, to grant wind leases pursuant to a public bid process,[55] and setting forth the manner in which leases on state lands might be granted for these purposes.[56]

A wind lease that affects lands owned or leased by a Port Authority, or public navigable waters that flow through any lands within the jurisdiction of a Port Authority, cannot be granted without the approval of a Port Authority. Approval cannot be withheld unless the project would be detrimental to the needs of commerce and navigation.[57]

---

53 *See* Part II.B hereof.

54 LA. REV. STAT. ANN. § 41:1731.

55 *Id*. at § 41:1732.

56 *Id*. at § 41:1733.

57 LA. ADMIN. CODE tit. 43, pt. X, § 1001, *et seq.* (2017).

The State and Local Coastal Resources Management Act of 1978[58] would apply to any wind project proposed to be located within the Coastal Zone.[59] As defined in that act, a "use of state concern" would include an "[e]nergy facility siting and development."[60] This program is managed and administered by the Office of Coastal Management within the Department of Natural Resources.[61]

D. Local Law:

Local governmental subdivisions may adopt ordinances to regulate zoning. The authority to do so is contained in the Louisiana Constitution,[62] and is implemented by statutory law.[63]

In *Four States Realty Co., Inc. v. City of Baton Rouge*,[64] the Louisiana Supreme Court elucidated on the power of a governing authority to enact a zoning ordinance, as follows:

> The authority to enact zoning regulations flows from the police power of the various governmental bodies; zoning is a legislative function. . . . Courts will not and cannot substitute their wisdom for that of a legislative body or other zoning authority except when there is an abuse of discretion or an excessive use of power. However, the exercise of a police power in zoning cannot be made without substantial relation to the health, safety and general welfare of the public. . . . All ordinances are presumed valid; whoever attacks the constitutionality of an ordinance bears the burden of proving his allegation.[65]

---

58 LA. REV. STAT. ANN. § 49:214.21, *et seq*.

59 *Id*. at § 49:214.24C. A map delineating the boundary of the coastal zone may be found at http://www.dnr.louisiana.gov/index.cfm?md=pagebuilder&tmp=home&pid =928, last visited February 9, 2018. (URL broken for purposes of pagination and spacing).

60 *Id*. at § 49:214.25A(1)(h).

61 *Id*. at § 49:214.26A.

62 LA. CONST. ART. VI, § 17.

63 LA. REV. STAT. ANN. § 33:4721.

64 309 So. 2d 659 (La. 1975).

65 *Id*. at 672.

"Zoning, as a legislative power, is presumed valid and one challenging a zoning enactment bears an extraordinary burden to overcome the presumption of validity." "Doubtful cases will be resolved in favor of the validity of the challenged zoning enactment."[66]

A spot check of the ordinances adopted by those governing authorities in the geographic area of the state where prior wind projects were undertaken or proposed, does not reveal any zoning ordinance as having been adopted that addresses such projects.

IV. Components of a Wind Energy Project

A. Preface:

As in the case of the proverbial "what comes first, the chicken or the egg," there are distinct steps from inception to operational launch of a wind energy project. Several of these steps might proceed on a parallel track, but the following steps—regardless of sequence—are typically involved in the establishment of a wind energy project.

B. Identification of Potential Wind Corridor:

In a manner not significantly dissimilar to the comparable endeavor in the mineral extraction industry, the developer identifies a geographical area of interest in which it desires to acquire leases and develop its project. A variety of considerations come into play in making this determination. Perhaps most critically, a proposed site or corridor should have a sufficient minimum annual average wind speed of 13 miles per hour, but equally relevant is the ability of the turbine to capture wind and convert it to electricity, a matter largely determined by technological advances in the design and construction of wind turbines. To be sure, there are areas in Louisiana in which wind speeds are sufficient to support a commercial project.

One source puts forth the following as to the importance of wind speed, to-wit:

> Wind speed is a crucial element in projecting turbine performance, and a site's wind speed is measured through wind resource assessment prior to a wind system's construction. Generally, annual average

---

[66] *Hernandez v. City of Lafayette*, 399 So. 2d 1179, 1182 (La. App. Ct. 3d 1981).

> wind speeds greater than four meters per second (m/s) (9 mph) are required for small wind electric turbines (less wind is required for water-pumping operations). Utility-scale wind power plants require minimum average wind speeds of 6 m/s (13 mph).
>
> The power available in the wind is proportional to the cube of its speed, which means that doubling the wind speed increases the available power by a factor of eight. Thus, a turbine operating at a site with an average wind speed of 12 mph will generate about 29% more electricity than one at an 11-mph site.[67]

Before investing significant amounts of capital into wind resource assessments, permitting, and pre-construction activities, a developer will secure tentative commitments from one or more buyers for the wind plants output over 10 to 30 years of its operational lifetime.

Additionally, an important consideration in selecting the "land footprint" for a project is the availability and access to existing high voltage power lines. The access to an existing transmission infrastructure is vital to reducing costs for the construction of such facilities. Also, as much heavy equipment is necessary for the construction of a wind project, access to adequate roads and highways is critical.

C. Assembly of Land Footprint:

It is necessary that the developer assemble leasehold rights of sufficient acreage from the landowners in the target area that corresponds to the wind corridor identified by the developer.

Particularly in an area where the actual notion of wind energy is a novelty, the unfamiliarity of landowners—and their lawyers—with wind leases and wind projects can be a significant obstacle.

Having identified its desired area of interest, the developer then engages land agents or brokers to research the public records to identify the relevant owners, and to then approach landowners in an attempt to negotiate and ultimately secure leases of the land in question.

---

[67] http://www.culturechange.org/wind.htm, last visited February 9, 2018.

As it relates to the necessary quantity of land for a project, the NREL estimates "annual generation by assuming a power density of 5 MW/km^2 (DOE EERE 2008) and 15% energy losses to calculate net capacity factor."[68]

D. Siting and Meteorological Evaluation Towers:

Generally, the first thing a lessee under a wind lease does after signing the first lease (of sufficient acreage) is install and construct a MET. A "MET" is a "meteorological evaluation tower" constructed to measure wind—speed and availability—in order to evaluate the potential for the installation and operation of a wind project at a particular site. METs are erected in remote and rural areas that are less than 200 feet above ground level. However, a developer might elect to use a LIDAR (Light Imaging, Detection, and Ranging) box in lieu of a MET. The LIDAR is easily movable, and does not implicate the height restrictions of the FAA.

The FAA has issued guidelines for the marking of METs in order to enhance the conspicuity of the towers for low-level agricultural operations in the vicinity of the towers.[69] In this guidance paper, the FAA sets forth its position on this topic, as follows:

> The FAA recommends voluntary marking of METs less than 200 feet AGL in accordance with marking guidance contained in this document and Advisory Circular 70-7460-l, Obstruction Marking and Lighting. The FAA notes that historically this guidance has not been applied to the voluntary marking of METs less than 200 feet AGL. However, the FAA recognizes the need to address safety impacts to low-level flight operations due to the construction of METs in remote and rural areas, especially as agricultural spraying season approaches. Due to the growing concerns expressed by operators, associations representing agricultural operators, and state and local governments throughout the agricultural industry, the FAA believes that voluntary marking of METs less than 200 AGL in remote and rural areas enhance the visibility of these structures to low level agricultural operations in the vicinity of these towers.

---

[68] https://www.nrel.gov/docs/fy12osti/51946.pdf, last visited February 9, 2018.

[69] Fed. Reg. Vol. 76, No. 122 (Friday, June 24, 2011).

* * *

> The FAA recommends that high visibility sleeves be installed on the outer guy wires of METs as described in this document. . . . Additionally, the FAA recommends high visibility spherical marker (or cable) balls of aviation orange color are attached to the guy wires.[70]

Based on the information gathered from the METs, the developer's engineers use computer models to determine the most efficient locations for wind turbines within the footprint of the leases held by the developer, taking setbacks into account. The word "algorithm" comes to mind.

By the end of the project, a 200 MW project will have 4-5 MET towers that are used to create a model of wind speeds across the site.

In addition to the METs and associated mast foundations necessary to support the project, other infrastructure needed might include receivers; cables; roads and drainage; wind turbine foundations; buildings housing electrical switchgear, SCADA central equipment, equipment at the point of connection, whether owned by the wind farm or by the electricity network operator; underground cable networks and/or overhead lines, forming radial "feeder" circuits to strings of wind turbines; electrical switchgear for protection and disconnection of the feeder circuits; transformers and switchgear associated with individual turbines, reactive compensation equipment, if necessary; and earth (grounding) electrodes and systems.

V. Arguments Against a Wind Energy Project–-Fact or Fiction?

Anecdotally, some projects have encountered resistance based upon an array of arguments put forth by opponents of wind energy. A wind proponent would characterize these reasons as pure myth or fantasy, while the opponent would call them opportunities for Armageddon.

The essential centerpiece of a wind energy project is the wind turbine. Indeed, if there is any image that depicts such a project, it is the turbine.

"To create electricity from wind, the shaft of the turbine must be connected to a generator. The generator uses the turning motion of the shaft to rotate a rotor which has oppositely charged magnets and is surrounded by

---

[70] *Id*.

copper wire loops. Electromagnetic induction is created by the rotor spinning around the inside of the core, generating electricity."[71]

Purely as a "rule of thumb," a commercial wind turbine might range from 256 feet to 328 feet in height, with blades of 116 feet to 143 feet in length.[72]

To a wind opponent, the mere presence of a wind turbine and its rotating blades offer an opportunity for criticism and arguments against the project. Let's consider a few of these issues or contentions to determine if they are fact or fiction.

A. Wind Turbines Result in Unnecessary Death or Harm to Birdlife:

The blades of a wind turbine share the same airspace as the flight-path of birds. The potential for an untoward collision is obvious.

The MBTA makes it "unlawful at any time, by any means or in any manner, to pursue, hunt, take, capture, kill, attempt to take, capture, or kill, . . ., any migratory bird."[73]

In *U.S. v. CITGO Petroleum Corp.*,[74] the United States Court of Appeal, Fifth Circuit, reversed a criminal conviction under the MTBA, holding that a "'taking' [under the MBTA] is limited to deliberate acts done directly and intentionally to migratory birds."[75]

The statutory scope of the MBTA is the subject of an interpretative Memorandum dated December 22, 2017, issued by the Principal Deputy Solicitor of the United States Department of Interior, embracing the holding in CITGO.[76]

An array of remedial actions has been proposed in an effort to eliminate or minimize harm or death to flying birds. These include smarter siting, radar, GPS tracking, ultrasonic acoustics, leaving turbines off when wind speeds

---

[71] http://goldpower.net/news/how-does-a-wind-turbine-generate-electricity/, last visited February 9, 2018.

[72] https://www.wind-watch.org/faq-size.php, last visited February 9, 2018.

[73] 16 U.S.C.A. § 703(b). *See* Part III.B(2) hereof.

[74] 801 F. 3d 477 (2015). *See* John P. Graf, *Take Two: The Fifth Circuit's Interpretation of the Migratory Bird Treaty Act in Untied States v. CITGO*, 5 JOURNAL OF ENERGY LAW AND RESOURCES 183 (2017).

[75] 801 F. 3d at 488-89.

[76] Solicitor's Opinion M-37050 dated December 22, 2017, reversing Solicitor's Opinion M-37041 dated January 10, 2017.

are low, painting turbines different colors, designing new turbine shapes and strike detection.[77]

B. Wind Turbines Are an Eyesore, and Adversely Affect the Aesthetics of the Area:

This contention calls up the notion that "beauty [and perhaps ugliness] is in the eye of the beholder." It is reported that, "in Europe, wind turbines help with tourism and actually drive more revenue due to boat tours and other related tours."

A recent opinion poll conducted by the Pew Research Center concluded that a large sector of the public (83%) favor more wind turbine farms, with 14% opposing such expansion.[78]

It is not arguing one side or other of this issue of aesthetics to note that cellular towers are not particularly attractive, but the insatiable appetite for Americans to have cellular telephones might motivate one to "look the other way." Creosote utility poles are not particularly attractive, but rare is the neighborhood or subdivision that does not have them—a small price to pay for electricity. So perhaps the universal acceptance of a wind turbine—virtually never existing in other than a *rural* environment—might just be a matter of time.[79]

The courts of Texas have addressed challenges to wind energy projects based upon alleged adverse effects on the aesthetics of the area involved. In *Rankin v. FPL Energy, LLC*,[80] several plaintiffs sought injunctive relief and asserted public and private nuisance claims relating to the construction and operation of the Horse Hollow Wind Farm in southwest Taylor County."[81] The suit sought to establish that the project was a nuisance by reason of "the wind farm's visual impact."[82]

---

[77] http://grist.org/climate-energy/for-the-birds-and-the-bats-8-ways-wind-power-companies-are-trying-to-prevent-deadly-collisions/, last visited February 9, 2018.

[78] http://www.pewinternet.org/2016/10/04/public-opinion-on-renewables-and-other-energy-sources/, last visited February 9, 2018.

[79] *See* Troy A. Rule, *Renewable Energy and the Neighbors*, 2010 UTAH L. REV. 1223.

[80] 266 S.W. 3d 506 (Tex.Civ.App.-Eastland 2008, *pet. denied*).

[81] *Id*. at 508.

[82] *Id*.

The court granted the defendants' motion for summary judgment, dismissing "Plaintiffs' claims of public and private nuisance asserted in whole or in part on the basis of any alleged aesthetic impact of [FPL's] activities."[83] The Texas Supreme Court refused review, leaving this ruling intact.

C. Wind Turbines Constitute a Nuisance, Actionable Under Applicable State Law:

NIMBY. You know what it means. Challenges have been made upon wind projects based on allegations that the wind turbines and associated infrastructure constitute a nuisance.

The Supreme Court of North Dakota affirmed a trial court's decision that a wind generator installed by a neighbor did not cause an actionable nuisance.[84]

Such a challenge in Louisiana might be brought on the basis or authority of article 667 of the Louisiana Civil Code, reading, as follows:

> **Art. 667. Limitations on use of property**
>
> Although a proprietor may do with his estate whatever he pleases, still he cannot make any work on it, which may deprive his neighbor of the liberty of enjoying his own, or which may be the cause of any damage to him. However, if the work he makes on his estate deprives his neighbor of enjoyment or causes damage to him, he is answerable for damages only upon a showing that he knew or, in the exercise of reasonable care, should have known that his works would cause damage, that the damage could have been prevented by the exercise of reasonable care, and that he failed to exercise such reasonable care. Nothing in this Article shall preclude the court from the application of the doctrine of *res ipsa loquitur* in an appropriate case. Nonetheless, the proprietor is answerable for damages without regard to his knowledge or his exercise of reasonable care, if the damage is caused by an ultrahazardous activity. An

---

83 *Id*.

84 *Rassier v. Houim*, 488 N.W. 2d 636 (N.D. 1992).

> ultrahazardous activity as used in this Article is strictly limited to pile driving or blasting with explosives.[85]

Article 667 is Louisiana's formulation of the doctrine bearing the Latin moniker of *sic utere tuo et alienum non laedat*, meaning that "one must so use his own property so as to not injure another's property." As the Louisiana Supreme Court noted in *Chaney v. Travelers Ins. Co.*,[86] Professor Yiannopoulos has written, as follows:

> While the literal interpretation of Article 667 in the light of its historical sources might leave room for the view that the word 'work' means merely 'constructions,' a teleological interpretation of the same article leads to the conclusion that the word 'work' ought to include 'acts.' In other words, as a matter of policy, it is preferable to apply article 667 to all situations in which constructions or activities cause unwarranted harm to property. The contrary view would not only unsettle Louisiana jurisprudence and would write out of the Code the Sic utere doctrine, but it would eliminate a most important legislative basis for civil responsibility and result in unnecessary importation of a common law tort doctrine.[87]

In an early case not involving wind energy, it has been held that "noise constitutes a nuisance subject to an action for damages and injunction when the noise is excessive, unreasonable in degree, and of such character as to produce actual physical discomfort and annoyance to a person of ordinary sensibilities."[88]

"The closest that a wind turbine is typically placed to a home is 300 meters or more. At that distance, a turbine will have a sound pressure level of 43 decibels. To put that in context, the average air conditioner can reach 50 decibels of noise, and most refrigerators run at around 40 decibels."[89]

---

85 LA. CIV. CODE ANN. art. 667.

86 249 So. 2d 181 (La. 1971).

87 *Id*. at 186.

88 *Thornburg v. McMillin*, 392 So. 2d 1119, 1124 (La. App. Ct. 3d 1980), *writ denied* 399 So. 2d 599 (La. 1981).

89 https://www.ge.com/reports/post/92442325225/how-loud-is-a-wind-turbine/, last visited February 9, 2018.

D. Wind Turbines Create "Shadow Flicker" and "Ice Throw":

Challenges to wind projects have been brought based upon allegations of the creation of "shadow flicker" and "ice throw" by the operation of wind turbines.

"'Shadow flicker' describes the alternating pattern of light and dark that happens when wind turbine blades sweep through the path of sunlight low in the sky."[90]

"Ice throw" would be the throwing of ice away from the blade of a wind turbine as it is in operation.[91]

In the cited case out of Connecticut, these challenges to the grant of permission for the installation and operation of a wind energy project, among others, were brought by plaintiffs against the Connecticut Siting Council, the state agency responsible for the evaluation of applications for the siting of facilities associated with a wind project.[92]

These challenges were rejected by the Council, and affirmed by the court. As to the "ice throw," the court upheld the Council's conclusion that, "[w]ith proper mitigation including but not limited to pre-startup inspection, there would be no risk of ice throw."[93]

Regarding "shadow flicker," the court accepted the Council's determination "that this was a potential annoyance and not a health threat. Mitigation of shadow flicker was available and solutions would be discussed with BNE and the property-owners as the project continued."[94]

---

[90] *Fairwindct, Inc. v. Conn. Siting Council*, 2012 WL 5201354, at *4 (Conn. Super. Ct. Oct. 1, 2012), *aff'd*, 99 A. 3d 1038 (Conn. 2014).

[91] Except, perhaps, for one or two days a year, anyone familiar with the weather in the Bayou State might conclude that this is not a significant concern.

[92] The Council has jurisdiction over the siting of power facilities and transmission lines, hazardous waste facilities and various other forms of infrastructure, including telecommunications sites. *See* http://www.ct.gov/csc/cwp/view.asp?a=895&q=248310, last visited February 9, 2018. (URL broken for purposes of pagination and spacing).

[93] *Id*.

[94] *Id*. at *7.

E. Wind Turbines Emit Interfering Electromagnetic Signals:

The potential for interference with the operation of electronic devices by electromagnetic signals emitted by a wind turbine, as well as remedial efforts to address such interference, is discussed in a report on the European website, Wind Energy: The Facts, as follows:

> Wind turbines can potentially disrupt electromagnetic signals used in telecommunications, navigation and radar services. The degree and nature of the interference will depend on:
>
> - The location of the wind turbine between receiver and transmitter.
> - Characteristics of the rotor blades.
> - Characteristics of receiver.
> - Signal frequency.
> - The radio wave propagation in the local atmosphere.
>
> Interference can be produced by three elements of a wind turbine: Tower, rotating blades and generator. Tower and blades may obstruct, reflect or refract the electromagnetic waves. Modern blades are typically made of synthetic materials which have a minimal impact on the transmission of electromagnetic radiation. The electrical system is not usually a potential problem on telecommunications because interference can be eliminated with proper nacelle insulation and good maintenance.
>
> Interferences to mobile radio services are usually negligible. Interferences to TV signals have been clearly minimized with the substitution of metal blades with synthetic materials. However, when turbines are installed very close to dwellings, interference has been proven difficult to rule out.
>
> * * *
>
> There is a common agreement that adequate design and location can prevent or correct any possible interference problems at relatively low cost using simple technical measures, such as the installation of additional transmitter masts. Interference on communica-

tion systems is considered to be negligible because it can be avoided by careful wind farm design.[95]

F. Wind Turbines Impede or Interfere With Agricultural Activities:

The previously mentioned project proposed for Acadia, Evangeline and St. Landry Parishes by Apex Clean Energy did not result in the assembly of a sufficient lease footprint to allow it to proceed to the evaluation stage. According to a report on the website of KATC TV in Lafayette, certain landowners, "fourth-generation rice producers, . . . say a wind turbine project could affect that family tradition. It could also affect other rice farmers in Acadia Parish. "These are some giant machines out in the field," that "would affect aerial applications and pesticides, rice and fertilizer. It would be very hard, I would say, to the rice farms."[96]

It is to this concern that the FAA Guidance document noted above, concerning the marking of a MET to make it more conspicuous to aerial applicators (commonly called "crop dusters"), is relevant. However, at the state level, the Louisiana Department of Agriculture and Forestry has not addressed these issues.[97]

G. Wind Turbines Cannot Withstand a Hurricane or Other Significant Weather Event:

Doubts have been raised as to whether a wind turbine situated in the areas of the country susceptible to hurricanes or other significant weather events could survive such a catastrophic event with its attendant high winds. The recent experience afforded by Hurricane Harvey (late August 2017) provided comfort to the durability of a contemporary wind turbine.

---

[95] https://www.wind-energy-the-facts.org/electromagnetic-fields-and-marine-organisms-5.html, last visited February 9, 2008.

[96] http://www.katc.com/story/33448358/rice-farmers-concerned-with-possible -wind-farms-in-acadia-parish, last visited February 9, 2018.

[97] By e-mail exchange with your author, Mike Strain, DVM, the Commissioner of this department, advised that "[t]here are no pending regulations pertaining to this matter. Our position is that we need to find a way to co-exist or find a mechanism to move the turbines away from actively farmed fields and still have reasonable access to the grid." E-mail dated January 9, 2018, on file with author.

As reported in the Wall Street Journal, "[f]or the first time in the history of the burgeoning U.S. wind industry, a wind farm got hit by a hurricane--and it was back producing power within days."[98] The article continues:

> Harvey made landfall as a Category 4 hurricane with winds of more than 130 miles an hour a week ago Friday about 20 miles from the Papalote Creek Wind Farm near Corpus Christi, Texas.
>
> One section of the onshore wind farm was producing electricity on Thursday and the other was expected to be back online on Friday, according to its owner, German power company E.ON.
>
> "Papalote actually survived really well," said Patrick Woodson, chairman of E.ON's North American operations. The delay in restarting was mostly because the power lines were damaged, he said.
>
> Weather gauges suggest the wind farm didn't take the brunt of the storm: they recorded sustained winds of 90 miles an hour, or the equivalent of a Category 1 hurricane on the Saffir-Simpson scale.[99]

We are all sadly familiar with the devastation that visited Puerto Rico as a result of the 155 mph winds of Category 4 Hurricane Maria (late September 2017). As has been reported:

> Though renewable installations on islands like Puerto Rico did sustain damage, renewable companies and advocates say distributed sources that could function apart from the grid would be easier to repair and get back on-line than centralized power and distribution. To brace for a storm, Torbert said nacelles on wind turbines can be tilted down and the blades turned away from the wind so they don't over-spin.[100]

---

[98] "In Big Test of Wind Farm Durability, Texas Facility Quickly Restarts After Harvey," Wall Street Journal (September 1, 2017).

[99] *Id*.

[100] https://www.greentechmedia.com/articles/read/puerto-rico-clean-energy-industry-prevent-maria-scale-damage#gs.71x4K4c, last visited February 9, 2018.

A report by the Office of Energy Efficiency & Renewable Energy of the Department of Energy, entitled "How Do Wind Turbines Survive Severe Storms," provides analysis of this subject, and identifies certain remedial actions during a severe weather event.[101]

H. Wind Energy Projects Increase Greenhouse Gas Emissions:

While wind energy is renewable energy, and therefore "clean and green," certain opponents have espoused a counter view. The reader can assess if this is myth or reality, but consider the following retort from a "clean and green" advocate, to-wit:

> Wind farms reduce greenhouse gas emissions in the overall electrical grid on close to a 1:1 basis. Typical grids produce 800 g of CO_2 equivalent (CO_{2e}) per KWh generated by their mixes of fossil, nuclear and renewable generation, and wind energy displaces virtually all of that. It's difficult to imagine the mindset in which one would assert that black is white and that wind energy actually increases greenhouse gas emissions or does not reduce them. Yet many anti-wind commentary continues to make this claim based on an overlapping and baseless set of myths.[102]

So, you are wondering what the American Lung Association thinks about wind energy versus the fossil fuel industry. Here is its position on this topic:

> Clean energy means cleaner air. The American Lung Association of the Upper Midwest (ALA-UM) supports the use of clean energy, such as solar power, wind energy and geothermal energy technologies because these sources of energy can greatly reduce the amount of unhealthy air pollution released into the atmosphere each year.

---

[101] https://energy.gov/eere/articles/how-do-wind-turbines-survive-severe-storms, last visited February 9, 2018.

[102] https://cleantechnica.com/2014/05/07/wind-power/, last visited February 9, 2018.

> The ALA-UM encourages Americans to proactively identify and reduce exposure to harmful air pollutants. These include emissions of particulate matter, ground-level ozone, air toxics as well as pollutants from fossil fuels that are associated with global climate change.[103]

VI. The Wind Lease

A. Preface:

The wind lease is the basic contract by which a developer secures the right to access property and undertake activities in furtherance of its project.

As in any case, it is appropriate to evaluate the legal nature of the wind lease under applicable law.

B. Classification of Wind Under Louisiana Law:[104]

In Part I.C hereof, we examined on a preliminary basis the notion of wind—what is it? We now "drill down" on that topic, starting with the question, who *owns* the wind? Is "wind," in any sense, a "thing" within the contemplation of the Civil Code? And how is "wind" to be classified in terms of it being movable or immovable, corporeal or incorporeal?

The Civil Code recognizes a "division of things." Hence, article 448 of the Louisiana Civil Code tells us that "[t]hings are divided into common, public, and private; corporeals and incorporeals; and movables and immovables."[105]

Dissecting these several "divisions of things," wind would be classified as "common" according to article 449 of the Civil Code, reading, in relevant part, as follows:

> **Art. 449. Common things.**
>
> Common things may not be owned by anyone. *They are such as the air . . . that may be freely used by*

---

[103] http://www.cleanairchoice.org/energy/, last visited February 9, 2018.

[104] Your author expresses appreciation to Professor John Randall Trahan, Louis B. Porterie Professor of Law and Saul Litvinoff Distinguished Professor of Law, at the Paul M. Hebert Law Center, for his insightful comments and suggestions on the material covered in this Part. Errors, if any, are solely those of this author.

[105] *Id*. at art. 448.

> *everyone conformably with the use for which nature has intended them*.[106]

Informatively, Comment (d) to article 449 reads, as follows:

> Congress and the Louisiana legislature have enacted laws designed to protect the purity of the atmosphere. See Clean Air Act, 42 U.S.C. §§ 1857-1857(1) (1970); Air Control Law, R.S. 40:2201-16 (1964). Both acts establish administrative agencies charged with the duty to prevent air contaminants from reaching harmful levels. See Note, 36 La.L.Rev. 1090 (1976).[107]

One finds a further elucidation of "air" as a "thing" in the Louisiana Civil Law Treatise, Property, where the author states, as follows:

> According to Article 449 of the Louisiana Civil Code "air," that is, the atmospheric air in its entirety, is not susceptible of ownership. It may not belong to anyone, be it a private or a public person. Everyone, however, may reduce finite quantities of air to possession and ownership.
>
> Article 449 refers to air as a mixture of chemical compounds rather than to airspace. According to Article 449 of the Louisiana Civil Code, airspace is a private thing; it belongs to the owner of the ground. Though a private thing, airspace may be used for aerial traffic above certain altitudes. Congress has recognized the need for modification of the notion of private ownership of airspace, and has declared that the airspace above the minimum altitude for safe flight is navigable airspace subject to the public right for free transit.[108]

Professor John Randall Trahan, in his fine work entitled Louisiana Law of Property: A Précis, makes the following observation on this topic, to-wit:

---

[106] *Id*. at art. 449. (Emphasis added.).

[107] *Id*., cmt. (d).

[108] 2 Ronald J. Scalise, Jr., LA. CIVIL LAW TREATISE: PROPERTY § 3:3 (5th ed. 2011).

> "Common" things, according to LSA-C.C. Art. 449, are those that "may be freely used by everyone conformably with the use for which nature has intended them." The article itself gives two examples: "the air and the high seas." *Id*. By applying the interpretive principle *ejusdem generis* to the text, we can perhaps come up with still more examples, such as sunshine, wind, and rain.
>
> The principal (if not the sole) consequence of classifying a particular thing, as "common" is that it may not be owned by anyone." Art. 449. The point of distinguishing "common" from "noncommon" things, then, is **to determine what can be owned and what cannot**. Common things are completely insusceptible of ownership; no one can own them, not even the state or its political subdivisions. Noncommon things, by contrast, can in principal (sic) be owned by someone, if not by individuals then at least by the state or its political subdivisions.[109]

Notwithstanding that one may not "own it," "can it," "put it on the shelf," "hand it off," or, with apologies to Donovan, "catch it,"[110] wind—if it has to be further classified—would seem to be corporeal since it "can be felt," even if on a fleeting basis. Thus, article 461 further classifies a thing as being either corporeal or incorporeal. This article instructs, as follows:

> **Art. 461. Corporeals and incorporeals.**
>
> Corporeals are things that have a body, whether animate or inanimate, and can be felt or touched.
>
> Incorporeals are things that have no body, but are comprehended by the understanding, such as the rights of inheritance, servitudes, obligations, and right of intellectual property.[111]

---

[109] John Randall Trahan, *Louisiana Law of Property: A Précis*, 9 (LexisNexis Matthew Bender 2012). (Emphasis in original.).

[110] *Catch the Wind*, Donovan (1946-__).

[111] LA. CIV. CODE ANN. art. 461.

Wind, which is air in motion, has a "body." No less of an authority than NASA informs us that air is a gas composed of nitrogen (78%) and oxygen (21%), with traces of other chemical components.[112] Wind has both mass and volume, and certainly can be "felt," and its consequences can often be observed. Hence, wind would be corporeal as there is no rationale to treat it as incorporeal, the rough civil law equivalent of "intangible." Wind is not intangible.

As to the final "division" of things, if the issue is the wind itself, it self-evidently is not immovable in character. Article 471 defines "corporeal movables" as "things, whether animate or inanimate, that normally move or can be moved from one place to another."[113] By definition, wind moves; that is its job. If this is not a sufficient basis to conclude as to the mobility of air and wind, Civil Code article 475 tells us that "[a]ll things, corporeal or incorporeal, that the law does not consider as immovables, are movables."[114]

So, if air or wind is a "thing," who owns the right to harness this corporeal, movable thing? Perhaps, being again instructed by article 449, we answer this imponderable by resort to article 490 of the Louisiana Civil Code, providing, as follows:

> **Art. 490. Accession above and below the surface.**
>
> Unless otherwise provided by law, the ownership of a tract of land carries with it the ownership of everything that is directly above or under it.
>
> The owner may make works on, above, or below the land as he pleases, and draw all the advantages that accrue from them, unless he is restrained by law or by rights of others.[115]

This is not to say, however, that the owner of the land over which the airspace exists is the "owner" of the air in such airspace, since, as pronounced by article 449 quoted above, air is a "common" thing that "may not be owned by anyone."[116] The right to harness is not the equivalent of ownership.

---

[112] https://www.grc.nasa.gov/www/k-12/airplane/airprop.html, last visited February 9, 2018.

[113] *Id*. at art. 471.

[114] *Id*. at art. 475.

[115] *Id*. at art. 490.

[116] *Id*. at art. 449.

The spiteful interference by the neighbor of one who owns land (and, thus, who owns the airspace above such land), with the concomitant right to harness the air in such airspace (such as by installing a wind turbine), might be actionable under article 667 of the Louisiana Civil Code, a matter more fully discussed in Part V.C hereof.

The essential hallmark of oil and gas law, the "rule of capture,"[117] has no particular relevance here inasmuch as wind finds us (you and me), sometimes whether one likes it or not. In any event, one cannot hold, grab or possess wind in contrast to the fugacious minerals, oil and gas. One may, however, endeavor to harness it, or employ it by a mechanical device--more about that later.

Air, if it is assimilated to wind, and *vice versa*, is so important that its protection is a matter of public policy, enshrined in the Louisiana Constitution.[118]

C. Characterization of a Wind Lease Under Louisiana Law:

For a variety of reasons, it is always appropriate to discern the legal character of a lease granted for a particular purpose.

The organic Louisiana law of lease resides in Title IX of Book III of the Louisiana Civil Code,[119] and was comprehensively amended and reenacted, effective January 1, 2005.[120]

---

[117] Standing roughly for the proposition that he who brings oil and gas to the surface of his own land, owns such products (even if drained from an adjoining tract), the "rule of capture" is codified by three articles of the Louisiana Mineral Code. *See* LA. REV. STAT. ANN. § 31:6 ("The landowner has the exclusive right to explore and develop his property for the production of such minerals and to reduce them to possession and ownership."); *id*. at § 31:8 ("A landowner . . . may reduce to possession and ownership all of the minerals occurring naturally in a liquid or gaseous state that can be obtained by operations on or beneath his land even though his operations may cause their migration from beneath the land of another."), and *id*. at § 31:14 ("A landowner has no right against another who causes drainage of liquid or gaseous minerals from beneath his property if the drainage results from drilling or mining operations on other lands.").

[118] "The natural resources of the state, including air . . . shall be protected, conserved, and replenished insofar as possible and consistent with the health, safety, and welfare of the people. The legislature shall enact laws to implement this policy." LA. CONST. ART. IX, § 1.

[119] LA. CIV. CODE ANN. arts. 2671, *et seq*.

[120] Act No. 821, 2004 La. Acts 2556.

As reenacted, article 2671 of the Louisiana Civil Code now characterizes a lease according to the "agreed use of the leased thing," thusly:

> **Art. 2671. Types of leases**
>
> Depending on the agreed use of the leased thing, a lease is characterized as: residential, when the thing is to be occupied as a dwelling; agricultural, when the thing is a predial estate that is to be used for agricultural purposes; mineral, when the thing is to be used for the production of minerals; commercial, when the thing is to be used for business or commercial purposes; . . ..[121]

It is a non-controversial proposition to observe that "wind" is not a mineral and, hence, is not governed by the Louisiana Mineral Code.[122] Rather, a wind lease would be characterized as a "commercial lease," as the land "is to be used for business or commercial purposes."

The essential element of a lease--regardless of the "agreed use of the leased thing" to which it relates--is "the consent of the parties as to the thing and the rent."[123]

In the lease, the "price" is "rent," which "may consist of money, commodities, fruits, services, or other performances sufficient to support an onerous contract."[124]

The Civil Code classifies contracts as either "nominate" or "innominate." Thus, article 1914 of the Civil Code explains, as follows:

> **Art. 1914. Nominate and innominate contracts**
>
> Nominate contracts are those given a special designation such as sale, lease, loan, or insurance.
>
> Innominate contracts are those with no special designation.[125]

---

121 LA. CIV. CODE ANN. art. 2671.

122 "A mineral lease is governed by the Mineral Code." *Id*. at art. 2672.

123 *Id*. at art. 2668.

124 *Id*. at art. 2675.

125 *Id*. at art. 1914.

Indicatively, a lease is a nominate contract, as it is a recognized institution, specially designated as such within the Civil Code.

It would not seem fruitful to belabor further these arguably esoteric notions of property, things, and their characterization as applied to the air or wind. Rather, it is sufficient for present purposes to embrace the notion that a wind lease is, in precise Louisiana jargon, a "commercial lease," and the object of such a contract is the land itself, and the associated rights to the airspace above the leased land.

D. Customary Provisions in the Wind Lease:

While "freedom of contract" operates fully with respect to commercial leases,[126] a wind lease tends to contain many provisions that might be viewed as customary in terms of that type of unique contract. While it is understandable that this topic has not been reviewed under Louisiana law, there are several excellent resource papers analyzing the wind lease under Texas law.[127]

Nevertheless, it is beyond the scope of this paper to analyze the distinct provisions of a wind lease in great detail. As an illustrative matter only, these customary provisions include the following, to-wit:

(1) Term of Lease.

The wind leases with which your author is familiar are granted for a terms composed of three distinct periods of time, *viz.*, the Development Term (usually not later than seven years from the effective date of the lease); a First Extended Term (usually twenty-five years after the lapse of the Development Term), and, at the option of the lessee, a Second Extended Term (usually an additional twenty-five years). A variation of this formulation is that the First and Second Extended Terms are replaced with an Operations Period of thirty years, subject to certain extension rights. All of these periods are subject to an early surrender or termination by the lessee.

---

126 *See* Ottinger, *Mineral Lease Treatise*, § 3-08(b), cited *infra* note 138.

127 Robert P. Wright, *There's Something in the Air: A Primer on Wind Leases*, 21st ANN. ADVANCED REAL ESTATE DRAFTING COURSE (2010); Rod E. Wetsel and Steven K. DeWolf, *Ride Like the Wind: Selected Issues in Multi-Party Wind Lease Negotiations*, 1 TEXAS A&M J. OF REAL PROPERTY LAW 447 (2014).

(2) Siting of Facilities.

The wind lease might provide that the lessee must provide to the lessor, at least thirty days prior to the commencement of construction, a site development plan for the property including all proposed sites and locations for all roads, turbines, electricity transmission lines, substations, O&M buildings, or any other constructs constituting wind facilities.

Typically, within thirty days after lessor has been provided with the site development plan, lessor may notify lessee of any potential problems foreseen with the proposed locations of the wind facilities and offer good faith suggestions, comments and possible remedies to address the areas of concern to aid lessee in its final site development planning. While a provision of this sort sets forth a process of cooperation, it is provided that the lessee shall make all final siting decisions in its sole and absolute discretion.

(3) Maintenance of Facilities.

Throughout the term of the lease, lessee is obligated, at its sole cost and expense, to maintain the wind facilities in good condition and repair, ordinary wear and tear excepted, and in accordance with all applicable laws.

(4) Responsibility for Taxes.

The lessee commits itself to pay any increase in the *ad valorem* taxes levied against the leased property directly attributable to the installation of wind facilities on the property. However, the lessee is not liable for taxes attributable to facilities installed by lessor or others on the property or to the underlying value of the property itself. A mechanism to contest tax assessments is usually set forth.

(5) Liens and Privileges.

The lessee is required to pay when due all claims for labor and material furnished to the property, and to not permit any mechanic's, materialmen's, contractor's, or other claims of liens[128] or privileges arising from any construction, maintenance, repair, or alteration of improvements by lessee to be enforced against the property covered by the lease.

---

[128] "The only kind of incumbrances on property known to the law of Louisiana are mortgages and privileges. The term *lien* is not used in our law as significative of any particular sort of incumbrance. It is a legal term used generally to signify any incumbrance on property, but, we may say, usually employed in connection with privileges, and rarely with mortgages." *Succession of Benjamin*, 2 So. 187, 188 (La. 1887).

(6) Transfers of the Lease.

The lessee has the right throughout the term of the lease to transfer, convey, sublease or assign the Lease (or any interest therein), in whole or in part, the lease to any person or entity without the consent of lessor. Provisions might be added to restrict this otherwise unfettered right to alienate the lease.[129]

(7) Termination, Default and Remedies.

The lease prescribes the circumstances under which the lease might terminate the lease, or when the lessee is in default, and prescribes the consequences of any event of default.

(8) Restoration of Property.

On completion of construction of wind facilities on the leased premises, lessee is required restore all portions of the property temporarily disturbed by lessee to a condition substantially similar to the condition that existed prior to construction. However, if crops are displaced, lessee shall not be responsible for replacing crops, but shall instead pay crop damage pursuant to the standards set forth in the lease contract.

(9) Insurance and Indemnity.

The lease typically contains a clause requiring that the lessee must maintain a commercial general liability insurance policy in an amount specified in the lease, and casualty loss insurance on the wind facilities in amounts and as required by lessee's lender(s), if any.

In addition, lessee obligates itself to defend, indemnify and hold lessor harmless for, from and against any third-party claims for physical damage to property and for physical injuries or death, and arising out of or related to lessee's breach of the lease.

(10) Royalties and Other Payments.

The lease specifies that the lessor will be paid a variety of rents or fees, including an installation fee (if wind turbines are installed on the property); development rent (on a per acre basis during a prescribed Development Period); a MET fee (if a MET tower is installed on the property); a transmission and

---

[129] *See* Ottinger, *Mineral Lease Treatise*, § 5-11, cited *infra* note 138.

access fee (on a one time basis, if permanent roads, above-ground transmission lines or buried cables, but no wind turbines, are installed on the property); a substation and operations and maintenance facility fee (if a transmission substation or O&M facility is constructed on the property), and operating rent (based on the installation of one or more wind turbines).

With respect to the monetary benefits that might accrue to a lessor under a wind lease, one proponent of renewable energy has noted, as follows:

> Wind energy yield per acre is off the charts. For example, a farmer in northern Iowa could plant an acre in corn that would yield enough grain to produce roughly $1,000 worth of fuel-grade ethanol per year, or the farmer could put on that same acre a turbine that generates $300,000 worth of electricity per year. Farmers typically receive $3,000 to $10,000 per turbine each year in royalties. The Iowa Wind Energy Association estimates that landowners in Iowa already collectively earn more than $12 million a year by hosting wind turbines.[130]

(11) Resolution of Disputes.

Because of the uniqueness of a wind project, and the novelty associated therewith, parties to a wind lease might find that it is prudent to include an arbitration provision in the lease. In the event of a dispute between the parties, it would be advantageous to the parties to have a specialized arbiter, selected by the parties and knowledgeable of wind projects, to resolve such controversy.[131]

(12) Lender Protection.

Because the lessee will most certainly require financing for its project,[132] which will result in the grant by the lessee of a mortgage on its leasehold interest in its wind leases (and other properties),[133] provisions are

---

[130] Lester R. Brown, *The Great Transition: Shifting from Fossil Fuels to Solar and Wind Energy*, at p. 86-87 (W. W. Norton & Co. 2015). Your author cannot attest to the monetary amounts mentioned, which are dated in any event.

[131] *See* Louisiana Arbitration Act, LA. REV. STAT. ANN. §§ 9:4201-17.

[132] *See* Part VIII hereof.

[133] "'Leasehold interest' means the interest of the lessee under a lease." LA. REV. STAT. ANN. § 10:9-102(d)(6).

included in anticipation of such mortgaging, and addressing the need for the landlord or lessor to subordinate its lessor's privilege to the mortgage of the lender. Further, provision is made for the circumstance of any foreclosure on the lender's mortgage, and consequential judicial sale of the mortgaged leases.[134]

While the lender protection provisions that might be incorporated into the wind lease might not pertain to the actual operation of the wind facilities, or the compensation to which the lessor might be due, these clauses are arguably of the utmost importance when one considers that they are absolutely essential to the success of the project in that the necessary financing cannot be obtained without them.

As only one illustration, the clause should obligate the lessor to execute and deliver, from time to time upon the request of the lessee, subordination, non-disturbance and attornment agreements (typically called an "SNDA").[135]

Unless these necessary provisions are in the lease at inception, the lessee, at a future date, will be required to approach the lessor and request its cooperation in delivering an SNDA. A lessor who is not, at inception, contractually required to cooperate with the lessee in this regard can be a significant obstacle to the consummation of a financing facility. A lender will rarely, if ever, forego this requirement.

(13) Other Provisions.

The foregoing provisions, while "customary," are just the tip of the iceberg. Certainly, in recognition of the doctrine of "freedom of contract," there are many other clauses that might be contained in the wind lease. However, as stated, a detailed or comprehensive analysis or discussion thereof is not warranted at this time.

---

[134] *See* Patrick S. Ottinger, *The Enforcement of Real Mortgages by Executory Process*, 51 LA. L. REV. 87 (Fall 1990).

[135] *See* Part VIII.B hereof.

E. The "Doctrine of Accommodation":

While wind energy would be a welcome addition to the Bayou State's energy portfolio, it obviously will not supplant oil and gas, the workhorse of the state's economy.[136] Oil and gas activities will unquestionably continue, and this brings us to a consideration of how an oil and gas operator, in the E&P space,[137] would peacefully coexist with a wind energy developer.[138]

A mineral lease, being a "real right,"[139] and "a contract by which the lessee is granted the right to explore for and produce minerals,"[140] confers upon the lessee an array of rights and privileges. Principal among the rights and privileges granted to the mineral lessee is the right to enter the leased property so as "to explore for and produce minerals," and, concomitantly, to enjoy the mineral value of the burdened land, subject to the obligation to pay royalty to the lessor.

Some consideration should be given to the reach and scope of the right of the mineral lease to enter the property subject to lease, and conduct E&P operations as permitted by the "Granting Clause" of the mineral lease,[141] insofar as the exercise of that right conflicts with the interest of either the landowner, or the holder of other rights granted by the landowner, such as a lessee under a wind lease.

---

[136] The exploration for oil and gas, along with the mining for minerals and support sectors, constituted approximately 6.7% of the State's real gross domestic product in 2015. Source: U.S. Department of Commerce, Bureau of Economic Analysis Website downloaded August 16, 2017; Prepared by Louisiana Department of Revenue, Policy Services Division. In fiscal year 2016, considering only revenue to the State of Louisiana (and not considering revenue in the private sector) in the "upstream" sector of the oil and gas industry, receipts from bonus, rentals and royalties totaled $157.2 million, while severance taxes totaled $429.6 million. Revenue Estimating Conference, Actual Collections FY 16.

[137] "E&P" means "exploration and production."

[138] Portions of this section are an adaptation of PATRICK S. OTTINGER, *Louisiana Mineral Leases: A Treatise* (Claitor's Law Books & Publishing Division, Inc., 2016) (herein cited as "Ottinger, *Mineral Lease Treatise*").

[139] LA. REV. STAT. ANN. § 31:16.

[140] *Id*. at § 31:114.

[141] *See* Ottinger, *Mineral Lease Treatise*, § 4-16.

An important rule that regulates the right of the lessee to conduct operations on the land subject to the mineral lease is the "doctrine of accommodation," or simply the "accommodation doctrine." This principle finds its basis in article 11A of the Louisiana Mineral Code, which reads, as follows:

> **Art. 11. Correlative rights of landowner and owner of a mineral right and between owners of mineral rights**
>
> A. The owner of land burdened by a mineral right or rights and the owner of a mineral right must exercise their respective rights with reasonable regard for those of the other. Similarly the owners of separate mineral rights in the same land must exercise their respective rights with reasonable regard for the rights of other owners.[142]

The comments to article 11 inform that such article is "intended to provide a flexible formula governing the relationship between the mineral servitude owner and the owner of the servient estate."[143] While accurate, the article, by its express terms, more broadly applies to "mineral rights," rather than merely to mineral servitudes. Hence, for our purposes, the article applies to mineral leases, and can be read as stating that the "owner of land burdened by a mineral [servitude or lease] and the owner of a mineral [lease] must exercise their respective rights with reasonable regard for those of the other."[144] Further, and in similar manner, the article informs that "the owners of separate mineral [leases] in the same land must exercise their respective rights with reasonable regard for the rights of other owners."[145]

Indeed, the Louisiana Supreme Court in one case[146] has observed that "the thrust of the rule [of the "doctrine of accommodation"] is to permit concurrent use of the land by the surface owner and the mineral owner with neither owner deemed to have a paramount right of use."[147] This judicial articulation suppresses the codal notion that, in reference to the mineral lease, one "estate" is strictly "dominant," while another is merely "servient."

---

142 LA. REV. STAT. ANN. § 31:11A.

143 *Id*. at § 31:11, cmt. In this context, the "servient estate" is the land burdened by the mineral servitude.

144 *Id*. at § 31:11.

145 *Id*.

146 *Caskey v. Kelly Oil Co.*, 737 So. 2d 1257 (La. 1999).

147 *Id*. at 1265.

The essential import of this "doctrine of accommodation" is that, while the lessee has the right to conduct the operations enumerated in the "Granting Clause" of the mineral lease, it must exercise those rights with "reasonable regard" to the rights of others to whom the landowner might also have conferred the right to conduct a different activity on the leased premises. These are called "concurrent" rights or uses.

Classic examples of "concurrent" uses that might pertain to the land burdened by a mineral lease include rights granted by the landowner to agricultural tenants,[148] seismic companies,[149] cultivators of oysters or crawfish,[150] pipeline companies,[151] producers of lignite or other minerals not covered by the mineral lease,[152] and other such rights. Additionally, the landowner herself might wish to use a portion of the leased premises for the construction of a residence or other building or improvement, including for our purposes a wind lease.

To be sure, the grant of the mineral lease does not *per se* result in the absolute denial or negation of the right of the landowner to use his own land for other purposes. Thus, although the mineral lease is a "real right," its filing for registry prior to other grants by the lessor of rights to use the surface, does not create a "first come, first served" scenario, which totally excludes the party who might be second-in-time. Unless the rights granted in the subsequently filed instrument invade the exclusive grant of the rights to search for oil, gas or other minerals covered by the mineral lease,[153] both parties can avail their respective rights, provided that such exercise by one party is undertaken in a manner that does not unduly interfere with the rights of the other party.

This proposition was embraced by the Louisiana Supreme Court in an early case involving a mineral lease,[154] in which the court noted that the mineral lessee had no right to "exclude *from the land* other persons having rights

---

148 *See*, *e.g.*, *Andrepont v. Acadia Drilling Co.*, 231 So. 2d 347 (La. 1969).

149 *See, e.g., Layne Louisiana Co. v. Superior Oil Co.*, 26 So. 2d 20 (La. 1946).

150 *See*, *e.g.*, *Inabnet v. Exxon Corp.*, 642 So. 2d 1243 (La. 1994).

151 *See*, *e.g.*, *Pennington v. Colonial Pipeline Co.*, 260 F. Supp. 643 (E.D. La. 1966), *aff'd* 400 F. 2d 122 (5th Cir. 1968).

152 *See*, *e.g.*, *Continental Group, Inc. v. Allison*, 404 So. 2d 428 (La. 1981), *writ den'd* 456 U. S. 906 (1982).

153 *See* Ottinger, *Mineral Lease Treatise*, § 4-16.

154 *Standard Oil Co. of La. v. Kinnebrew*, 99 So. 802 (La. 1924).

thereon, lawfully acquired, which do not conflict with such rights as the lessee may reasonably claim as necessary for his own proper enjoyment of his lease."[155]

VII. Marketing of Wind Energy

A. Preface:

According to a report issued by the EIA, nearly half of utility-scale capacity installed in 2017 came from renewables. EIA expects 25 GW of new utility-scale electric generating capacity to have been added to the power grid during 2017, nearly half of which use renewable technologies especially wind and solar.[156]

Lazard Frères, now called Lazard LLC, is a world-wide financial advisory firm assisting clients on strategic and financial matters. Its analytical capabilities are widely respected in the industry. It publishes an annual report on the Levelized Cost of Energy Analysis, most recently, its Version 11.0.[157] It shows how all forms of generation stack up from a price perspective, with and without tax credits or other incentives. One sees that energy is being purchased now for economic reasons, not because of state or corporate mandates.

Its 2017 edition demonstrates that wind is cost-competitive with conventional generation technologies under some scenarios. This conclusion, however, does not take into account potential social and environmental aspects (*e.g.*, social costs of distributed generation, environmental consequences of certain conventional generation technologies, etc.), or reliability or intermittency-related considerations (*e.g.*, transmission and back-up generation costs associated with certain alternative energy technologies).

This report shows that the levelized cost of wind energy ranges from $30 to $60/MWh. Taking into consideration available incentives (*e.g.*, ITC and PTC, both extended in December 2015), this levelized cost reduces to $14-$52/MWh.

In contrast, the levelized cost of natural gas (reciprocating engine) ranged from $68 to $106/MWh, while coal comes in at $60 to $143/MWh.

---

[155] *Id*. at 804. (Emphasis by court.).

[156] https://www.eia.gov/todayinenergy/detail.php?id=34472, last visited February 9, 2018.

[157] https://www.lazard.com/media/450337/lazard-levelized-cost-of-energy-version-110.pdf, last visited February 9, 2018.

As reflected by this report, the levelized cost of wind energy is the lowest of all fuel commodities or sources. The report contains a tremendous amount of data and analysis worthy of consideration. It is important to note that energy is not the only pricing consideration, but is certainly of significant importance.

B. Federal Incentives:

The generation of wind energy is subsidized by the Production Tax Credit ("PTC"), which offers a tax credit for each MWh of electricity produced. Wind farms do not receive any incentive on the front end, but receive credit for the tax credits as power is generated during the wind farms operations.[158]

The basic framework of the PTC is explained by the following information posted on the energy.gov website, as follows:

> Wind facilities commencing construction by December 31, 2019 can qualify for this credit. The value of the credit steps down in 2017, 2018 and 2019. For all other technologies, the credit is not available for systems whose construction commenced after December 31, 2016.
>
> The federal renewable electricity production tax credit (PTC) is an inflation-adjusted per-kilowatt-hour (kWh) tax credit for electricity generated by qualified energy resources and sold by the taxpayer to an unrelated person during the taxable year. The duration of the credit is 10 years after the date the facility is placed in service for all facilities placed in service after August 8, 2005.
>
> The tax credit amount is $0.015 per kWh in 1993 dollars for some technologies and half of that amount for others. The amount is adjusted for inflation by multiplying the tax credit amount by the inflation adjustment factor for the calendar year in which the sale occurs, rounded to the nearest 0.1 cents. The Internal Revenue Service (IRS) publishes the inflation adjustment factor no later than April 1 each year in

[158] For a more comprehensive explanation of the history and rationale of the PTC, *see* https://www.awea.org/production-tax-credit, last visited February 9, 2018.

the Federal Register. For 2017, the inflation adjustment factor used by the IRS is 1.5792.[159]

"Wind is approaching grid parity--the moment when it can compete without subsidies."[160]

C. Marketing of Wind Power:

Wholesale electricity markets are governed by Regional Transmission Organizations ("RTOs"), also known as Independent System Operators ("ISO"). ISO's are a byproduct of de-regulation of the electrical transmission system in the early 2000's, and oversee the operation of the national transmission system. ISO's also create algorithms that set wholesale prices across a power system (known as "Locational Marginal Prices"); monitor the use of transmission lines, and ensure that power supply meets power demand.

Louisiana is part of the MISO System, which stands for Midcontinent Independent System Operator. Its very informative website describes MISO as "an essential link in the safe, cost-effective delivery of electric power across all or parts of 15 U.S. states and the Canadian province of Manitoba."[161] MISO is headquartered in Carmel, Indiana, with a South Region Transmission Planning office in Metairie, Louisiana.

MISO's website contains "real time" graphs showing "real-time fuel load" and "fuel mix" on a daily basis.

D. Traditional and Newer Revenue Sources for Wind:

Traditionally, wind farms were built after receiving Power Purchase Agreements ("PPAs") from a utility. In a PPA, the wind developer bids a fixed price of power to a utility over a fixed amount of time (usually 20 years). In the traditional "busbar" PPA,[162] the utility agrees to buy power from the wind farm at

---

[159] https://energy.gov/savings/renewable-electricity-production-tax-credit-ptc, last visited February 9, 2018.

[160] *The Key Energy Questions for 2018*, Financial Times (Dec. 2017).

[161] https://www.misoenergy.org, last visited February 9, 2018.

[162] In electric power distribution, a busbar is a metallic strip or bar, typically housed inside switchgear, panel boards and busway enclosures for local high current power distribution. A PPA might designate the busbar as the functional point at which the wind-generated electricity is taken off by the purchaser or utility, and is the point at which compensation is determined and fixed. https://en.wikipedia.org/wiki/Busbar, last visited February 9, 2018.

the exact point on the grid where the wind farm connects to the transmission system.

As the prices of wind power are falling below the wholesale rates, the industry is starting to see a movement towards more non-traditional revenue sources. Taking a project "merchant" means that the wind farm will not have a power sales agreement, but will instead take whatever the wholesale power price is for the power as it is generated.

Wind farms often combine this merchant exposure with a fixed or floating swap, or a corporate or utility PPA for some portion of the output, to decrease exposure to wholesale markets. In a swap, the wind farm will agree to deliver power to some point on the transmission system, and sell it to a counterparty at a fixed price. In this scenario, the counterparty is usually not trying to use the electricity to serve demand directly, but is instead taking a bet that the wholesale price of power at that point will exceed the price they are paying for the swap.

VIII. Financing of a Wind Energy Project

A. Preface:

As with other topics covered herein, much could be written about the financing of a wind energy project. A good overview of the topic can be found on the website of the American Wind Energy Association, and is reproduced below, as follows:

> The US wind industry, like other energy sectors, relies heavily on project finance markets to fund new projects. This approach to energy infrastructure treats each energy project like a stand-alone company, using only the project cash flows to support debt or equity investments. Project Finance investors perform a critical role in the industry as their risk preferences drive industry trends and reinforce safeguards in favor of economically sound projects.
>
> In project finance, U.S. wind projects primarily recruit two types of investment; tax equity and project debt.
>
> Tax equity investing is common in sectors including renewable energy, affordable housing, and film-making, and was a major force in launching the growth of the U.S. shale gas boom just a few years ago. In each of these cases, some form of federal tax credits helped industry recruit private capital from

investors whose large federal tax obligation makes such investments attractive. This is similar to the way many companies across the U.S. economy prefer to lease equipment from a financial entity instead of purchasing. Tax equity investors make an equity investment into a wind project on or around the date that construction is completed. Tax equity investors "prescreen" and assess projects during the late stages of development, commit to deals when sufficient detail is available for the project, and close the deal when operations commence. Tax equity investors evaluate projects on the basis of projected cash flows and expected output to generate production tax credits (PTCs), and the investment basis by which depreciation is calculated.

Project debt transactions also tend to close near the finish of construction, but can often be coordinated with construction lending that is used to pay for the construction contractor. Project loans go through a similar prescreen process as tax equity, so the activity associated with raising this capital occurs largely before the project is completed. Project lenders focus on a metric known as debt service coverage, which measures how free cash flows from project operations compare to required principal and interest payments with project debt obligations.

Project finance markets illustrate the forward-looking nature of this process: overall capital raised in 2012 declined during the industry's record-breaking development year because many deal packages were raised in the prior year. In addition to this, tax equity has quickly reflected the industry's trend towards the PTC, as 80% of tax equity dollars went to projects using the PTC compared to 52% of projects overall. Both tax equity markets and wind projects overall trended towards the PTC in 2011 and 2012 as projects continue to get more efficient due to new technology improvements increasing production.

Debt and tax equity markets have each displayed resiliency in recent years. Tax equity volumes dipped sharply to less than $1 billion in 2009 as the financial sector was afflicted by the 2008 crisis, but have rebounded significantly in recent years as financial

> institutions recovered. Since the 1603 program has expired, the wind industry will increasingly rely on these funding sources to develop projects. Project debt markets reflect a very global marketplace and a strong presence from European and Asian banks, and have successfully weathered the storm of the European currency crisis recently.[163]

The following explanation of the current state of affairs in terms of the financing of a wind energy project is informative:

> STRUCTURED FINANCE
>
> The last five years has seen the emergence of a number of new forms of transaction for wind financing, including public and private bond or share issues. Much of the interest in such structures has been with renewable energy funds, long-term investors, such as pension funds, and even high net worth individuals seeking efficient investment vehicles. The principle behind a structured finance product is similar to that of a loan, being the investment of cash in return for interest payment; however, the structures are generally more varied than project finance loans. As a result, there have been a number of relatively short-term investments offered in the market, which have been useful products for project owners considering project refinancing after a few years of operation. Structured finance investors have had a considerable appetite for cross-border deals and have had a significant effect on liquidity for wind (and other renewable energy) projects.
>
> BALANCE SHEET FINANCING
>
> The wind industry is becoming a utility industry in which the major utilities are increasingly playing a big role. As a result, and while there are still many small projects being developed and financed, an increasing number are being built 'on balance sheet' (i.e. with the utility's cash). Such an approach removes the need

---

[163] https://www.awea.org/financing, last visited February 9, 2018.

for a construction loan and the financing consists of a term loan only.

PORTFOLIO FINANCING

The arrival of balance sheet financing by the utilities naturally creates “portfolio financing,” for which banks are asked to finance a portfolio of wind farms rather than a single one. These farms are often operational and so data is available to allow for a far more accurate projection of production. The portfolio will usually include a range of projects separated by significant physical distances, with a range of turbine types. The use of different turbine types reduces the risk of widespread, or at least simultaneous, design faults, and the geographical spread ‘evens out the wind’. It is possible to undertake a rigorous estimation of the way in which the geographical spread reduces fluctuations.

Finally, if the wind farms are in different countries then the portfolio also reduces regulatory risks.

The risk associated with such financing is significantly lower than that of financing a single wind farm before construction and attracts more favorable terms. As a result, the interest in such financing is growing. Portfolio financing can be adopted even after the initial financing has been in place for some time. It is now quite common to see an owner collecting together a number of individually financed projects and re-financing them as a portfolio.

TECHNOLOGY RISK

The present ‘sellers’ market’, characterized by the shortage in supply of wind turbines, has introduced a number of new turbine manufacturers, many of which are not financially strong and none of which has a substantial track record. Therefore, technology risk remains a concern for the banks, and the old-fashioned way of mitigating these risks, through extended warranties, is resisted forcefully by new and experienced manufacturers. So technology risk has increased recently, rather than diminishing over time. However, some banks still show significant interest in

lending to projects that use technology with relatively little operational experience.

OFFSHORE WIND

Offshore wind farms are now more common in Europe. The first few projects were financed in the way described above-by large companies with substantial financial clout, using their own funds. The initial involvement of banks was in the portfolio financing of a collection of assets, one of which was an offshore wind farm. Banks were concerned about the additional risks associated with an offshore development, and this approach allowed the risks to be diluted somewhat.

Although there are still relatively few offshore wind farms, banks are clearly interested in both term loans, associated with the operational phase of offshore wind farms, and the provision of construction finance. This clearly demonstrates the banks' appetite for wind energy lending. It is too early to define typical offshore financing, but it is likely to be more expensive than that for the equivalent onshore farm, at least until the banks gain greater confidence in the technology. The risk of poor availability as a result of poor accessibility is a particular concern.

BIG PROJECTS

Banks like big projects. The cost of the banks' own efforts and due diligence does not change significantly with the project (loan) size, so big projects are more attractive to them than smaller ones. Wind projects are only now starting to be big enough to interest some banks, so as project size increases, the banking community available to support the projects will grow. Furthermore, increasing project size brings more substantial sponsors, which is also reassuring for banks.

CONCLUSIONS

The nature of wind energy deals is changing. Although many small, privately-owned projects remain, there has been a substantial shift towards big-

> ger, utility-owned projects. This change brings new money to the industry, reduces dependence on banks for initial funding and brings strong sponsors.
>
> Projects are growing and large-scale offshore activity is increasing. Since banks favor larger projects, this is a very positive change. If the general economic picture deteriorates, this may give rise to certain misgivings concerning project finance, in comparison to the last few years, but political and environmental support for renewable energy means that the funding of wind energy remains a very attractive proposition. Obtaining financing for the large-scale expansion of the industry will not be a problem.[164]

B. Customary Documentation:

(1) Preface.

The financing of a wind energy project is not dissimilar to other projects, save as relates to the uniqueness of the project. However, it is safe to say that the dynamics of the financing of a wind project are greatly in flux, and that which was regular and traditional even a few years ago might not serve a more contemporary project. This transition "from the old to the new" is explained, at least in part, by the evolving support of federal tax incentives that are approaching sunset. As more fully discussed in Part VII.B, these incentives are scheduled to be phased out after 2019.

In terms of documentation, there are project documents and financing documents.

(2) Project Documentation.

The project documents for a wind project are generally inclusive of the following, to-wit:

> EPC ("engineering, procurement and construction"), or balance of plant contract
> Power Purchase Agreement
> Interconnection Agreement
> Operation and Maintenance Agreement

---

[164] https://www.wind-energy-the-facts.org/recent-developments.html, last visited February 9, 2018.

(3) Financing Documentation.

Typically, the financing documents for a wind project are generally the same as those for other large projects. These would include the following, to-wit:

Credit Agreement
Common Terms Agreement (depending on the size of the transaction and the number of credit facilities)
Pledge Agreement
Security Agreement
Mortgage
Accounts Agreement
Title Insurance Policies (Loan and Owner's)
Subordination, Non-disturbance and Attornment Agreement ("SNDA")

To focus only one of these necessary financing documents, an SNDA is executed by the lessor, lessee and lender, and importantly subordinates the lessor's privilege to the lender's mortgage,[165] and affirms for the benefit of the lender that the lease is, at that point in time, in full force and effect, and that there is not breach thereunder, and that the lessee is not in default of its obligations under the lease.

Additionally, the SNDA will commit the lessor to agree to "attorn" to any successor lessee in the event of the enforcement of the mortgage, with resultant judicial sale,[166] and to not interfere with or disturb the successor lessee's right of quiet enjoyment, occupancy or possession conferred in and under the lease.

Of course, there may be additional guarantees, ancillary documents and supply or other project documents depending on the specifics of the transaction.

---

[165] "To secure the payment of rent and other obligations arising from the lease of an immovable, the lessor has a privilege on the lessee's movables that are found in or upon the leased property." LA. CIV. CODE ANN. art. 2707.

[166] *See* Patrick S. Ottinger, *The Enforcement of Real Mortgages by Executory Process*, *supra* note 131.

IX. Conclusion

As stated at the outset, there has not been a commercial wind energy project brought to economic fruition on Louisiana soil. Particularly near the coast, the potential for a viable project seems to be present--the wind is certainly there.

External factors such as market conditions, improving technologies, support through Federal tax incentives, and the relative cost of wind energy in relation to traditional fuel stock, and other factors combine to create an environment (pardon the pun, if it is a pun) in which our “pioneers” might come forward to inaugurate a new industry in the Bayou State.

Drawing on a multitude of sources and authorities (some pro, some con), and addressing the fact or fiction of arguments for and against wind energy, it is hoped that this paper will serve as a guide for those “pioneers” who are willing and able to pursue a commercially viable wind energy project in Louisiana.

