Wind Farms are not compatible with the Texas Hill Country!

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Introduction: Since 2008 a few absentee landowners with property in the northwest part of Mason County and eastern part of Menard County have leased their property to a wind farm development company. While no turbines have been erected to date the threat remains. There are 6 property owners who have leased their land. They do not live on the land they have leased to the wind farm promoters. It is their hope that the wind farm is constructed and they will make money from long term leases that they have entered into. The local community and frequent visitors to the area are livid over this project and the community is uniformly and vocally against it.

Wind energy is a greatly misunderstood enterprise and the whole business is very complicated. However the citizenry of the Hill Country are quite sophisticated in their approach to wind farm development and have taken a pragmatic position. They oppose it for many reasons and while many supporters of wind energy have taken only a pedestrian look at the industry,

the Hill Country folks have dissected it over time and have come to strong conclusions against it - especially in the beautiful and unique Texas Hill Country.

While there is increasing blowback in most of the European countries where wind farms are developed, there may be areas where they will contribute some small amount of energy production. But after 50 years of development - **wind energy is still not cost effective**. Wind farms are an *undependable* niche producer of energy that will never be able to replace conventional *dependable* power sources - simply because they rely on an unsteady source – wind. But because governments, ours included, in their zeal to develop alternative energy sources have made wind farm development far more profitable (*through taxpayer supported incentives)* than they would ever be without them, **they are way over-built.** And, they are being constructed in areas where there is no rational justification for their construction - other than the Production Tax Credit and other government incentives.

Is Wind Power a solution to our growing energy crisis?

To answer this question let's define some terms as they are used in discussing Wind Farms.

Wind turbines come in several sizes with the trend being to build larger units. Wind turbines are often given a **maximum capacity** rating - *probably in order to puff up the perceived ability to produce electricity.* A land based

Wind turbine may be rated at 500kW. That is a theoretical number based on full operation 24/7. This is its **maximum capacity** rating.

This **maximum capacity** rating value is **useless** because the wind fluctuates. Sometimes the wind doesn't blow at all! So a more useful rating would be **capacity factor**. The **capacity factor** takes into consideration wind fluctuations and varies wildly depending on where the turbine is located. A wind farm offshore where the wind blows consistently would have a higher capacity factor than a wind farm in the Texas Hill Country where winds are usually light and variable and **not considered sufficient for wind turbine placement**. According to a report in the Harvard Crimson, the average wind farms operate at about **26.9 Capacity Factor**. That means that they operate at 26.9% of their **maximum capacity**. (*If a wind turbine is rated at 500kW then it would really only produce 134.5kW!*) Contrast this ridiculous inefficiency to a conventional power plant that, depending on age and equipment, operate at a 40 to 80 **capacity factor**. Obviously, when a wind farm is operating at less than half the efficiency of a conventional electric producer, it will immediately be less cost effective and result in very expensive power to be sold to consumers.

The wind may not blow when you want it to! That presents the conundrum that says wind energy cannot ever be completely reliable. If you were to rely on wind energy to cool your home or keep the lights on - there would be days when you wake up in a hot, dark place! Given that wind

cannot be depended on, a back-up power source must be available. Actually, that is what we already have with our conventional power generators. So why go through the exercise of industrializing wind power? Why indeed!

Wind Power is supposed to make energy cheaper. After all, the wind is free right? The Wind Farm promoters will often claim that when communities switch from conventional power to wind power - consumers will save money. Last year, the U.S. Energy Information Administration (EIA) published data showing that from 2008-2013 the over-all national average electricity price increase was **2.8** percent. In the 10 most developed wind power states, the electricity prices rose an average of **20.7** percent! [In Wyoming it rose **33%**] That indicates that electricity prices, where wind power is a part of the utility, rise faster than in consumer markets where wind power is not a factor. So the claim that wind energy makes electricity cheaper proves to be wrong. The numbers are clear!

Electricity prices paint a stark picture for wind power - but there are even more problems that aren't easily observed. For example, when communities **abate taxes** and **subsidize** the Wind Farms, they are just hiding additional costs. The Production Tax Credit rewards Wind Farm developers with a 2.3 cent per kilowatt hour incentive. Real retail costs for conventionally generated electricity is about 10 cents - so with the PTC in place the wind farms can hide 20 percent of the cost of production!

So it is clear that wind energy is very expensive and completely unreliable!

But there are other considerations. Most wind farms are situated in rural areas away from high populations. *One reason for this is because fewer people are likely to complain after these hideous turbines pollute the horizons.* But as time goes on and these monstrosities multiply, they are beginning to ruin areas valued for **intrinsic scenic beauty** [like the Texas Hill Country]. No one ever looked at a horizon full of spinning and blinking and noisy turbines and said that it looked scenic and beautiful! Or that they enjoy the view!

Wind farms are said to be good for the environment - according to their proponents - **but that is not true**. The wind farm promoters often say that a wind turbine only needs ¼ of an acre for a turbine base. That is probably technically true but that does not include the 10 turbine diameters of surface space required between each turbine. They will say that area is useable for farming - and maybe in some circumstances that could be. In the Texas Hill Country that point is moot because they intend to build on ridge-tops [which will do the most damage to the scenic value of property!]. **Surface area**

destruction is only one part of the area disturbed by wind development. The effect on the **aerial ecosystem** is severe. Not only is it unusable by bats and birds, it is deadly! More on bats and birds later…

So what is the real story regarding the "**footprint**"? We use the "physical footprint" as the measure of a human system that might cause environmental harm. Typically it is used to measure the impact of airports, roads, pipelines, parking lots and the like. For comparison, the footprint of a nuclear power plant with 1BkWhrs capacity would be **1** square mile. For a gas fired power plant the footprint would be **3** square miles. *This includes area necessary for mining and drilling.* But given the gross inefficiency of wind power generation the footprint would require about **60** square miles of land covered with wind turbines to generate the same amount of power!

This is a huge and a very serious difference in land requirement and hardly considered eco-friendly!

Wind Farm promoters claim that they **create jobs**. Well maybe a few. But for every wind farm job created, one is lost in the conventional power generation labor force. This is Economics 101! And what about those good manufacturing jobs needed to build the turbines? Consider this. Of the top 10 wind turbine manufacturers, only **one** is located in the US. Those **good jobs** are created in Germany, Denmark and China! Not much help to our economy here. However, **conventional** power generation is done by manufacturers in the US. The operation of the power plants require a well

paid skilled labor force to run them, especially in the states where they operate. That is meaningful to our economy because those are well paying jobs!

So we see that wind farms are hard on our habitats, ecosystems and economy!

Wind turbines are huge industrial machines. They operate in space that is occupied by birds during the day and bats at night. Spinning turbines in the normal habitat of any bird or bat is troublesome. The Bald and Gold Eagle Protection Act and the Migratory Bird Treaty Act says that the death of a single eagle is a felony! As a matter of fact, the Justice Department has prosecuted oil companies when birds drown in their oily holding ponds and they have fined utility companies when birds are killed by their power lines. But with Wind Farms it is different! Wind Farms routinely kill eagles and other raptors and lots and lots of bats! When is the last time you heard of a wind farm being fined or prosecuted for killing birds and bats. It is clear that politics are in play here. Since the killing effect of the turbines is known, the promoters often buy into a "mitigation bank" which will, in effect, let them buy the right to kill and destroy habitat. This process is complicated and misleading with legal mumbo-jumbo meant to end-around existing laws that mean to protect sensitive and endangered species.

Wind farm development is very hard on wildlife.

Anyone who has observed the turbines up close can understand this easily. However, definitive quantitative data is sparse. As existing wind farms are monitored and evaluated the situation becomes clearer. The US Geological Survey has been studying the effect of wind farms on native bird populations and other wildlife species. In a recent report, they have reported that when wind farms are placed in prime wildlife habitat there is a **negative influence** on wildlife - which begins immediately after construction and continues for years afterward. In one study the agency found that seven of nine bird species studied from 2003-2012 were displaced. Some species fled in the first year and others continued for up to 5 years after construction. According to a report last April by the Institute for Energy Research (IER) - every year **573,000** birds (*of which 83,000 are raptors*) are killed by wind turbines. Every year - in the US wind turbines kill **888,000** bats. From 2010 to 2015, about 2.9 million birds were killed by turbines.

Deer are very important in all Hill Country communities. They are pivotal in our economies. The effect on Hill Country deer populations from developing wind farms is logically expected to be harsh. Deer, like all *"wild"*life are bothered by industrial noise. In a report from wildlife agencies in the Midwest, *"Most researchers agree that noise can affect an animal's physiology and behavior, and if it becomes a chronic stress, noise can be injurious to an animal's energy budget, reproductive success and long-term*

survival." Wisconsin hunters have complained that they cannot hear deer coming through the woods because of turbine noise and the overall deer numbers are down.

Wind farms will negatively impact property values.

Land prices in the Texas Hill Country have not been based upon productive values for probably several generations. Land purchases in the Hill Country are investments that are based on **aesthetic values and recreational uses**. It doesn't take a study; common sense should tell anyone that, all things equal, land in the Hill Country that is burdened by or even within a distant view of wind turbines is not going to be as marketable or as valuable as land without. The only debatable issue is **to what degree**. Derry Gardner, a San Antonio real estate appraiser, has one of the most relevant presentations regarding the reduction in property values based on proximity to wind farms. He has noted a recent sale in south Texas where the ranch (with wind turbines) **sold for 40 percent less** than what market should have been. The wind industry likes to cite numerous studies that support their position that wind farms have little, no, or even positive impacts on property values. None of these studies are applicable to most of Texas and certainly not the Hill Country. Wind turbines in a cotton field may not have a material negative impact because the market value of such property is being determined by its productive value; not the case with land in the Hill Country!

Wind farm income may not be a financial boon for landowners.

Landowners who sign wind lease agreements do it for the money - *royalty* payments from the wind turbines that will be placed on their property. This is often done with the expectation that such additional income will allow them to keep property in their families and avoid additional fragmentation of the land. This can be a very short-sighted strategy. Based on reliable sources, wind farms in closest proximity to central Texas, generate between $8,000 and $9,000 per turbine, per year. These property owners fixate on how the promise of such money might help their **income statement** and ignore the much greater impact that the wind turbines will have on their **balance sheets**. For instance, if a landowner has 1,000 acres and is going to get four turbines that will each bring in $8,500 per year; then their gross annual wind turbine income is $34,000. If the 1,000 acres is currently worth $3,500 per acre ($3,500,000.00) **without turbines** and if the property is only devalued by 40% **with wind turbines present**, the result is an immediate reduction in value is $1,400,000.00! Based on that scenario, it would take a landowner over 41 years to offset the loss in value that their property sustained in year one! That payback gets much longer when turbine income declines as it always does or if one takes into account what the subject property might have been worth without turbines twenty years down the road**.** ***And of course, surrounding property owners without turbines will***

also suffer the same percentage of devaluation without the benefit of any turbine income.

Wind farms may not be a financial boon for taxing entities.

Wind farms don't run on wind, they run on subsidies – the most lucrative of these subsidies being the Production Tax Credit (PTC) that was addressed earlier in this paper. In addition, most (if not all) industrial wind farm development in Texas has been done with some sort of property tax abatement, either from the county and/or school district where the project is located. Such abatements will cap a project's tax value at a fraction of what the project would otherwise have been valued at, or abate the majority of property taxes levied on the wind farm for a period of time – typically ten years. At the end of those ten years, when their tax abatements have expired, a wind farm developer will then argue that for property tax purposes (because of accelerated depreciation) their project has little value. Collectively, such **wind farms never come close to paying their way** with respect to property taxes**. And that's just the first part of the problem.** Most land in rural Texas counties is appraised at and qualifies for either an agricultural-use or open-space exemption. This means that taxing entities derive revenue based on the properties' productive value, not its market value. A wind farm is not likely to diminish the agricultural value of land in a given area. The issue is how the wind farm is going to impact the market value of improvements that are not subject to agricultural exemptions and,

more importantly, future "taxable" development in the area. Much of the overall growth in the tax base of a rural county can be attributed to the construction of new homes – in many cases, expensive new homes owned by new part-time or full-time residents who have moved to and invested in the Texas Hill Country because of its scenic beauty. A wind farm project in the Hill Country will absolutely stop all such activity for as far as the eye can see. The resulting impact on the tax base in a Hill Country county will be devastating.

WIND FARMS: A PRIVATE PROPERTY RIGHTS ENIGMA

An enigma exists when discussing "private property rights" with those who allow their properties to be used for wind farm development. Property owners who lease their land to Wind Farm promoters often sound like the staunchest of private property advocates, vigorously waving that flag to those who object to having wind farms in their community. However, one would be hard pressed to find anyone who would not defend their property and their property rights. But what is it that a private property rights advocate seeks to protect? Is it interference by government, via a regulation or law that limits one's use or control over one's own property? Or is it the physical appropriation by government of all or a portion of someone's private property without just compensation? With regard to real property,

the answer is probably both. We are all possessive of those rights. Except with Wind Farms it is different! With Wind Farms it is a taking - but not by government. It is by the Landowner who is allowing the Wind Farm to be built on his property regardless of any opposition. It is disingenuous to tenaciously defend one's right to use one's property without government interference. And then say it is OK to do the same when such use is done by Wind Farms.

Another anomaly exists when reviewing the agreements the Landowners and Wind Farm promoters enter into. These leases **surrender** the very rights they vow to protect. Typical wind farm leases contain many provisions that not only **divest landowners of the power to control the use of their properties**, but also **severely curtail the landowners' own rights to the use of their own properties**.

A typical lease includes legal language. The following is taken from a typical lease and made more readable by using regular English, or something that is substantively equivalent:

> "The Landowner hereby leases to the Wind Farm promoter and its successors and assigns, **the surface** of Landowner's property, **together with** all **air space and** all **underground areas**, necessary or appropriate for the construction of Wind Power Facilities."
>
> "The Wind Farm developer shall have the right to occupy and utilize the Landowners Property **for the following uses and purposes**:
>
> "(1) **Determining the feasibility of wind energy on the Property or on neighboring lands** by conducting (a) studies, (b)

ground surveys and geotechnical investigations, and (c) environmental, biological, cultural and other tests and studies;

"(2) **Constructing, reconstructing, erecting, installing, improving, enlarging, replacing, relocating and removing from time to time**, and using, maintaining, repairing, operating and monitoring , the following, **for the benefit of one or more Projects**: (a) **wind turbine generators**, **and other wind power generating facilities** (including associated towers, foundations, support structures, guy wires, braces and other structures and equipment), of any type or technology***;*** (b) **electrical power** interconnection, transformation, **transmission**, collection **and distribution facilities**, **including overhead** and underground **transmission**, **distribution and collector lines**, wires and cables, conduit, footings , foundations, **towers, poles**, cross arms, guy lines and anchors, substations , interconnection and/or switching facilities, circuit breakers and transformers, **and energy storage facilities**; (c) **overhead and underground** control, communications and radio relay systems and **telecommunications equipment, including fiber, wires, cables, conduit, towers and poles**; (d) **meteorological towers** and meteorological measurement, monitoring and recording equipment, instrumentation and facilities; (e) **roads, bridges, culverts and erosion control facilities**; (f) **water pipelines, storage and pumping facilities**; (g) control, **maintenance, storage and administration buildings** and facilities; (h) **utility lines** and installations; (i) **laydown areas and maintenance yards**; (j) **signs**; (k) **other** improvements, fixtures, **facilities**, appliances, machinery and equipment **in any way related to** or associated with **any of the foregoing*;***

"(3) **Vehicular and pedestrian ingress, egress and access** to and from Wind Power Facilities **on, over and across the Property by means of roads and lanes** thereon **if existing**, or **otherwise by such roads as the Wind Farm developer** or anyone else **may construct** from time to time, in each case **for the benefit of one or** more Projects;

"(4) Undertaking **any other activity that the Wind Farm developer or a Sublessee determines necessary, convenient or cost-effective** incidental to any of the foregoing purposes **or for the benefit of one or more Projects**. Without limiting the generality of the foregoing, the Parties recognize that (a) power generation technologies are improving at a rapid rate and that **the Wind Farm developer or a Sublessee may** from time to time **replace existing facilities on the Property with newer and *potentially larger facilities*** and (b) the Operations may be accomplished by the Wind Farm developer, a Sublessee or one or more third parties authorized by the Wind Farm developer or a Sublessee." (*Emphasis added*)

The above provisions, and the extent of their impact, are in all likelihood never explained to, or understood by, the landowner. **Wind farm leases contain broad, comprehensive, and sometimes confusing provisions enumerating the permitted uses and purposes.** An examination of the above shows how complete the lessee wind farm operator extends its control over the leased premises.

Another typical provision clarifies that the **Wind Farm developer receives exclusive rights** over the leased premises. And this is a huge point!

> **"Exclusivity.** **The Wind Farm Developer shall have the exclusive right to** develop and **use the Property for wind energy purposes** ***and*** to convert all of the wind resources of the Property; provided, however, that nothing expressly or impliedly contained in this Lease or represented to the Wind Farm developer shall be construed as requiring Lessee to (a) undertake construction, installation or operation of any Wind Power Facilities on the Property or elsewhere, (b) continue operation of any Wind Power Facilities from time to time located on the Property or elsewhere or (c) generate or sell any minimum or maximized amount of electrical energy from the Property; and **the decision if, when and to what extent to construct, install or operate Wind Power Facilities, or to generate or sell electrical energy, shall be *solely* in The Wind Farm developers discretion**. **The Land Owner shall cooperate with Wind Farm and each Sublessee in connection with its Operations**, and, upon request by Wind Farm developer, shall make available to the Wind farm developer for inspection copies of all reports, agreements, surveys, plans and other records of the Land Owner, if any, that relate to the Property or would facilitate such Operations."

These provisions of these leases **do not reserve rights to the property owner**; rather they establish priorities over the use and management of the property**, the highest of which is granted to the wind farm developer.** The provisions **curtail, if not eliminate**, any rights the landowner may have over not only the extent of activities the leased premises, but the conduct of those activities.

As addressed elsewhere in this paper, the intrusion of the Wind Farm development has significant adverse financial impact on the community. Especially to those adjacent or in close enough proximity to have visual contact with the wind farm facilities. Where does the adjacent property owner, who also

may be an ardent private property rights advocate, go to reclaim losses resulting from the reduction in property value as a result of the wind farm development?

If a governmental entity elected to take for a public purpose the equivalent of 1/3rd or a 1/4th of a tract of land, the owner would be entitled to compensation equaling the value of the taking. But with Wind Farms it is different. If the value of property is reduced as a result of a wind farm development, the damaged recipient of that financial loss by devaluation of his property is that adjacent property owner. Where does he turn and to whom does he seek reimbursement, for the loss?

Summary: There may be places where wind power makes sense. But today, without generous taxpayer provided subsidies, it is hard to imagine where that might be. The continued development of wind farms face uncertainty at best as the reality of the issue becomes clearer. What is certain is that characteristics of the industry are incompatible with ecologically and socioeconomically sensitive areas. The Texas Hill Country is just such an area. Any proliferation of 500 foot wind machines in this spectacular and important ecotourism region of Texas will have too many permanently negative repercussions. It is for these solid reasons that the Texas Hill Country Heritage Association and its many members strongly oppose the development of a wind farm anywhere in the Texas Hill Country!

Note: Both authors of this paper are Directors of the Texas Hill Country Heritage Association.