

How does a Large-Scale Solar Farm Impact the immediate Environment?

- Construction Concerns:
 - Will soil be moved for the project?
 - There are several examples of significant environmental impact relative to large scale earth moving projects (Chesapeake Bay Watershed for example)
 - The proposed sitting is only 4 miles from the Mississippi River, Concern for environmental damage exists, considering there is a 300 foot elevation change to the Platte River just 1.1 miles away from the proposed site.
 - Will the site be subject to storm water management requirements as is customary on a typical construction jobsite?
- Effects of Microclimate changes are largely unstudied in this area since the concept of large-scale solar farms in populated areas is relatively new.
- What is currently known about the environmental effects of large-scale solar farms located in the Driftless region of Wisconsin?
 - Since the answer may be, “unknown”. Proposal to have the University of Wisconsin work in unison with the contracting company to conduct environmental research during construction and post construction to gain a deeper understanding of the real effects on the environment at such a site. Propose that they be granted full access to the properties to study effects on the ecosystem within the boundaries of the solar farm and in the surrounding areas?
- Have studies been done to understand the impact of rain water run off from the glass surface solar panels?
 - Water running off solar panels will be more concentrated than typical rain drops.
 - Have considerations been made for the typical slopes in the proposed sitting of the Solar Farm and the effect of having tens of hundreds of acres under roof with concentrated rain run off?
- What residual chemicals from the manufacture of the solar panels themselves will wash off in rain water and contaminate the surface and ground water?
- Will chemicals be used for cleaning the solar panels?
 - If so, what chemicals, and what cleaning frequency would be anticipated?
 - Will this use of concentrated chemicals be regulated?
- Have the effects of solar pollution in the form of heat on livestock, wildlife and humans been studied?
 - Some small studies of the heat island effect caused by solar farms have been conducted, what are the possible side effects (heat stress?) of such a rise in temperature on livestock and people?
- Have the long term effects of the shaded soil and the reduced soil temperature been studied on large solar farms?
 - What are the effects on species unique to the Driftless region?
- How does a fenced solar farm of this size (~2000 acres continuous) effect the wildlife habitat in the area?
- Will chemicals be used to manage vegetation growth?

- If so, what chemicals, how will they be applied, and will they be regulated?
- Is there a management plan for invasive species of vegetation which may adapt to the changed microenvironment present at the solar farm?
- Will mowing be required to manage vegetation?
 - How many times a year will the site be mowed?
- Aircraft Glare on approach to airport
 - Photovoltaic (PV) panels are said to be “constructed of non reflective glass and carry a low risk of glare” Per a study conducted in NV and concluded that, “The results show that the potential for hazardous glare from flat-plate PV systems is similar to that of smooth water and not expected to be a hazard to air navigation” (p. 4)
 - However the following is an FAA requirement: “No potential for glare or “low potential for after-image” along the final approach path for any existing landing threshold or future landing thresholds (including any planned interim phases of the landing thresholds) as shown on the current FAA-approved Airport Layout Plan (ALP)17. The final approach path is defined as two (2) miles from fifty (50) feet above the landing threshold using a standard three (3) degree glide path.”
- If the proposed site is fenced off on both sides of State Hwy 61, wildlife moving through the area will be forced to channel down the highway between the fences, and will likely increase the frequency of deer/turkey/coyote strike on stretches of roadway near the proposed site by traveling vehicles.
 - Who is responsible for the liability associated with the effected traffic from the wildlife proof fences and subsequent accidents?
- The proposed site is along a heavily traveled state highway, there are bound to be distracted driving events. What happens when inclement weather causes traffic to leave the roadway and travel through the solar panel installations? Heavy damage would occur, the panels are mounted off the ground and expose travelers to a clothesline effect in the case of vehicles leaving the roadway.
- Driftless region and wildlife concerns
 - The Proposed Project will be built inside the Driftless Area National Wildlife Refuge Authorized Boundary
 - Just 4 miles away from the Mississippi
 - There are documented cases of a “Lake effect” causing the deaths of birds who mistake the facility for water.
 - <https://www.scientificamerican.com/article/solar-farms-threaten-birds/>
 - Peregrine Falcons (endangered) moving inland during winter months along the Mississippi
 - How will fences on a facility this large affect the movement of wolf, coyote, bear, bobcat, deer, and other wildlife in the area?
- Risk of Fire (it was reported that “5-June-2019 Rural California, birds were blamed for landing on wiring and becoming conductors on a solar farm which subsequently caused a grass fire to break out (\$8-\$9 million in damage to the facility)”)

- With tall grasses likely on a site such as the proposed Solar Farm, and the location close to state highways where grass fires in Spring and Fall are common, is there a fire mitigation plan?
- With fences and secured access to the premises, how will fire departments access the property to fight fires?
- Is there additional risk for electrocution of firefighters, with fire damaged equipment on site (batteries, wiring, panels themselves with live wires damaged from fire etc)?
- Does fighting fire on a solar farm require specialized equipment and training, who responsible for covering those costs?
- Will full time employees have fire fighting equipment on hand, and be trained to contain wild fires?
- Will there be fire detection equipment on the premises?
- Risk for Tornadoes (Desert Sunlight Solar Farm Damaged by Tornado 23-April-2015)
 - Grant County has had documented tornadoes over the past 10 years
 - Are solar farms tolerant of tornado winds and debris?
 - Cleaning up broken glass and debris from tornado damage is not an easy task
 - How do you ensure removal of all hazardous materials from damaged solar panels? Do you have to reclaim the soil? Do you excavate all effected soil, and screen it for impurities, then regrade and restore vegetation?
 - What incentives do operating authorities of solar farms have to properly clean up all remnants of damaged solar panels?
 - Will those responsible for ground water contamination be around to clean it up should an environmental issue be discovered down the road?
 - Fact, it happens, data suggests cadmium can be washed from broken panels in as little as a few months by rain water.
- Risk for Hail (April 2019 Alamo 2 solar farm damaged by hail, San Antonio TX)
 - Grant County has documented insurance claims for hail
 - What size hail stone can the panels tolerate?
 - What methods will be in place to detect damaged panels which can leech contaminated water into the soil?
- Risk for Wind (Winds from Hurricane Maria damaged solar panels in Puerto Rico Sept. 2017)
 - Grant County has documented wind weather events which have caused insurance claims in the proposed area
 - What wind speed are the installations designed for?
 - Who is liable for airborne panels in the event of airborne panels leaving the property in the event of a severe weather event?
- Risk for inadvertently damaged panels
 - If a interested party were to fly a drone over the site, and it were to crash, damaging a panel, does the property management have means to detect and determine what panel has been damaged to avoid contaminants leaching into the ground water?
 - Hunting interference: Can the large solar array withstand the occasional stray bullet from local hunters who don't consider what's on the other side of a fenceline or treeline? Can management of the solar farm detect and correct the issue prior to ground water contamination?

- Has a Risk Assessment been conducted regarding insurance claims in last 10-20 years on current facilities located on the proposed properties?
 - Weather events have historically cause damage along the proposed corridor.
 - Most residents are aware of repeated wind events causing damage to improvements on property located at the proposed site.
- Decommissioning and recycling
 - Has NextEra ever decommissioned a solar farm of this magnitude?
 - Currently study suggests that recycling costs exceed the value of the recovered materials
 - Therefor, who owns the recycling costs associated with a project like this when the panels are determined no longer fit for the intended purpose?
 - If the parent company can not afford to decommission the site, who owns the responsibility then?
 - Can the site be idled and left abandoned by the leasing company?

What impact can a Large-Scale Solar Farm have on my family's health?

- Since there is data that suggests hazardous products used in the manufacture of solar panels can be dissolved in rain water, any broken panels can allow hazardous materials to be transferred to surface and ground water.
 - Who is responsible for cleanup?
 - Who gets notified if broken panels have been discovered at the site?
 - Will the public be notified that a contamination event to the ground water took place?
 - What action takes place in the event of such an occurrence?
 - Is there oversite to clean up?
- If health issues surface locally, and can be traced to effects from/of the solar project located in the area, who is responsible for the liability that will be associated with necessary healthcare of those effected?
- Will the noise emission of the inverters and electric tracking motors be audible at my home on a continuous basis?
 - What recourse do neighbors have for this unwanted noise?
- Have other solar farms been studied for stray voltage effects on wildlife, livestock and residents?
 - Equipment in good repair typically doesn't ground electrical signal, however with the vast network of underground cable required to connect and control tens of thousands of solar cells, some damage to underground cabling can be anticipated, can they be detected, and what are side effects when stray voltage does occur?
 - How many miles of underground cabling is required for a 200 mega watt solar farm?
- Grant County WI has approximately 52,000 residents
 - Have solar farms this size been installed in communities with a population density similar to SW Grant County?

What impact can a Solar Farm have on my family's financial stability?

- Some states have legislation restricting permanent green energy installations based on land's CSR (Corn Suitability Rating)
 - Does Wisconsin regulate the land Solar Farms can be installed on?
 - Since the rest of the developed world installs solar panels on low value land, wouldn't it make sense for Wisconsin to do the same?
- Economic Impact to the area (size of the economic footprint)
 - How many people employed to farm the proposed area (~2000 acres) in 2019?
 - How many full time jobs required to operate the solar farm on the same ~2000 acres? (heard 2-4 max)
 - How many local businesses support the agriculture on 2000+ acres?
 - Will those businesses provide similar support to the solar farm?
 - During the Construction Phase, it has been claimed that hundreds of jobs will be added in the area.
 - What percentage of people on site to build the facility will be locally sourced?
 - What percentage are relocated temporarily as skilled labor?
 - Will any employees hired locally for the project remain employed after the project is complete?
- Has economic study been conducted on a community before and after a large-scale solar farm in a primarily agricultural area has been put into service?
- How many people benefit financially, from this particular large scale solar farm?
- How will surrounding property values be affected by the solar farm, today, tomorrow and in the future? Consider the variables and uncertainties talked about above.

Stewardship

- What grade solar panel is targeted for this project and will they be manufactured by ECO conscious and ECO compliant manufacturers located within the United States?
- What is the life expectancy of the panels intended for installation at the site?
- Why has this area been targeted specifically for a solar farm?
- Are Wisconsin laws, or the absence of applicable Laws being taken advantage of?
- How will power being generated at this farm, be transported to a suitable substation?
 - If a private company is building the solar farm, then do they have any legal avenue to use eminent domain to obtain easements for powerline access across neighboring properties to transfer power generated to a local substation?
 - Does this qualify as eminent domain abuse?
- Where will the power generated on this Solar Farm be used?
 - Will power generated here, be sold outside of the state of Wisconsin?
 - Will power generated here be sold outside of Grant County?
 - Who benefits from the sale of this power to other areas?
- Will residents directly affected by this solar farm receive direct discounted utility rates as a result of the project?

- Who owns liability related to the solar panels?
- Have alternatives to solar power been considered in this particular case?
 - Can this be geographically located to better suite this area?
 - The proposed area is over some of the best soil in Grant County, to be considered permanently removed from production.
- Do large snow events effect the site at all?
- Why is a lease sought by the builder, instead of ownership of the land?
 - Are there liability issues, limiting the builder's desire to own the land?
 - Is a lease easier for the builder to walk away from when moving on to other projects?
 - What is the value of a lease, over land ownership for the stake holders?
- What access will farmers who have signed leases with NextEra have to the property, or are they merely Deed holders and rent collectors?
- Are there state and federal laws that determine how the land will be taxed?
 - It is no longer Agricultural use, who is responsible for the industrial use taxes?
- Conditional Use Permitting in Wisconsin may allow agricultural use claim for tax purposes, who sets the new rates?
- Low grade agricultural land is allowed to be used for Solar farms in the rest of the world. Why is prime production land being sought in Grant County for a solar farm?
- 100 megawatt and larger farms need WPSC approval in Wisconsin, has NextEra filed with the PSC yet?
 - Will NextEra be considered a non-utility company?
 - If the plan is to sell the solar farm to a utility company, then isn't the idea of private contractors building farms, which will be sold to utility companies a way for utility companies to skirt due process and due diligence of the WI law?
- Is NextEra considered a non-utility?
 - Are they bound to the same PSC requirements as a utility company?
- How many large scale solar projects have been built by NextEra?
 - How many remain owned and operated by NextEra?
- What does the Farm Bureau have to say about the project?
- Do farmers leasing to Solar Farms have to comply with applicable NRCS requirements during construction and after development of the solar site?