

1  
2  
3 **BEFORE THE**  
4 **PUBLIC SERVICE COMMISSION OF WISCONSIN**  
5

---

6  
7  
8 Application for a Certificate of Public  
9 Convenience and Necessity of Grant County  
10 Solar, LLC to Construct a Solar Generation  
11 Facility, to be Located in Grant County,  
12 Wisconsin.

Docket No. 9804-CE-100

---

13  
14  
15 **DIRECT TESTIMONY OF BRIANNA EISENTROUT-FREAR AND HENRY FREAR**  
16  
17 **GRANT COUNTY INTERVENORS**  
18  
19

---

20  
21 **Q: Please state your name and address:**

22 A: We are Brianna & Henry Frear we live at 7016 US Highway 35 & 61 Potosi, WI. Our  
23 C.V.s are provided as Ex.-Grant County Intervenors-Frear-1.

24 **Q: Are you expert witnesses in this hearing?**

25 A: We are submitting this testimony on behalf of our family, and we are not holding  
26 ourselves out as “expert witnesses.” Our education, training, and expertise has helped us  
27 review the information provided by Grant County Solar, LLC, the Public Service  
28 Commission, and other credible sources, and we are including some documents with our  
29 testimony for consideration by the Commission as it makes its decision in this docket.

30 **Q: Where is your home and property in relation to the Grant County Solar LLC solar**  
31 **project and what are your concerns?**

32 A: The facility will be directly West and South of our home. We have 2 children under the  
33 age of three. This is the home where we planned to raise our children:

1 This is the view from our front yard:



2  
3 These photos and a map showing the location of our home and property are attached as  
4 Ex.-Grant County Intervenors-Frear-2.

5 Due to Grant County Solar’s vague claims, our questions that have gone  
6 unanswered, the lack of siting rules and regulations, and lack of studies on solar  
7 installations of this scale, we feel the potential risks are too high to stay here if the project  
8 goes through. As a result, we are making plans with our family to move to another  
9 property and build a new home. This is an extreme hardship for our family.

10 **Q: What concerns do you have about impacts to your property?**

11 A: A primary concern we have is the impact of the project on property values. We have  
12 found evidence that property values will likely be affected. For Grant County Solar to  
13 say that this is not expected to effect property values means that given a normal  
14 distribution bell curve there would need to be an equal amount of people that would  
15 actively seek to live in a utility district as those that would actively choose not to. This is

1 simply not a reasonable conclusion. According to an article in the Providence Journal,  
2 “Homes within a tenth of a mile went down by 7%” when situated near a solar project.<sup>1</sup>

3 It is reasonable to assume that if other areas with large solar installations are  
4 seeing an effect in property value, that would likely extend here as well. The study  
5 accompanying Mr. Marous’ testimony is not compelling, as the “comparable properties”  
6 are not comparable.

7 Facilities of this scale should not be surrounding homes. In an article about a  
8 proposed NextEra facility in Utah.<sup>2</sup> NextEra boasts that the Utah facility is a mile away  
9 from any residences, yet here in Grant County, they are surrounding homes.

10 For most homeowners in the area a portion of the value of our homes is the rural  
11 location with beautiful agricultural views of the driftless region. Please see the current  
12 view from our home in the photo above, and consider as well, Noreen Clark’s view, who  
13 would be surrounded on 3 side by this facility for reference.



14  
15 Imposing 10ft fences, a black sea of panels, and a long list of unaddressed concerns will  
16 certainly change the value of properties. This proposed solar facility surrounds homes on  
17 2, 3, and 4 sides in the beautiful driftless region.

18 County land use plans show that 95.1% of the land on which this project is sited  
19 or considered as an alternative site for this project is on protected land under the  
20 Farmland Protection Policy Act. This land use planning designation should be considered

---

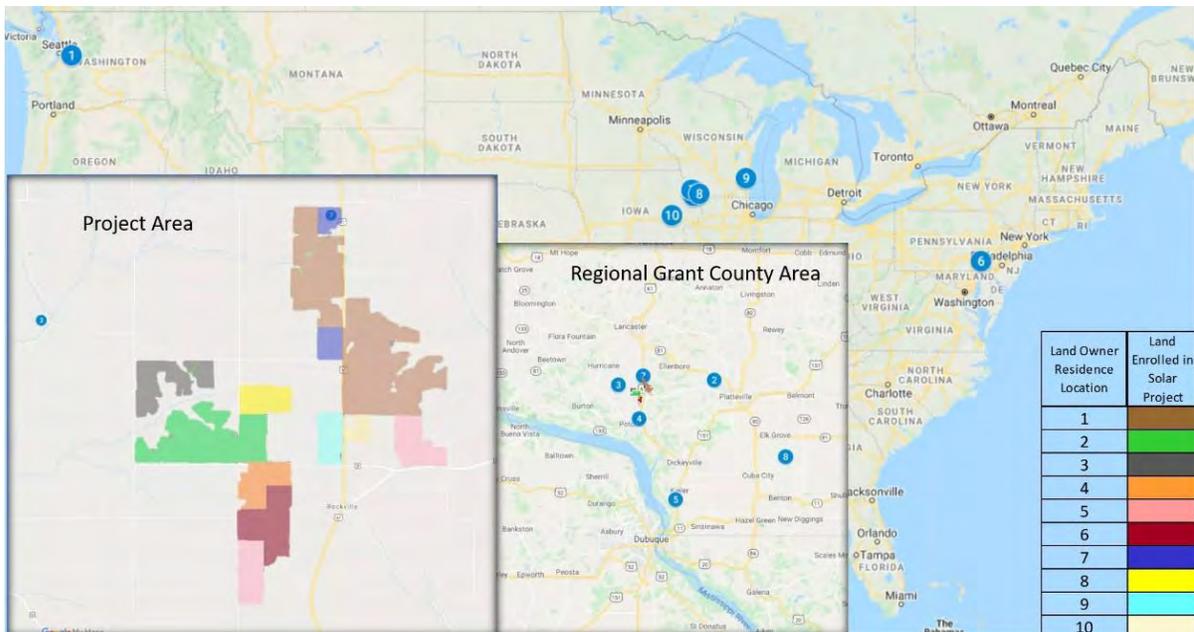
<sup>1</sup> Ex.-Grant County Intervenor-Frear-6: <https://www.providencejournal.com/news/20200930/study-solar-projects-driving-down-home-values-in-ri-suburbs>

<sup>2</sup> Ex.-Grant County Intervenor-Frear-7: <https://www.sltrib.com/news/environment/2020/10/19/big-solar-farms-could/>

1 as community disapproval of a 2,000 acre industrial facility. The PSC is to consider local  
2 land use plans, and PSC staff agreed that this project is not consistent with the local land  
3 use plan.

4 **Q: Do you have concerns about Grant County Solar’s leases of neighboring land and**  
5 **the siting in your community?**

6 A: Yes. We have looked at the parcels leased, and learned that NextEra’s proposed 200MW  
7 Grant County Solar facility sited on 2058 acres of leased land for 30 - 50 years, and over  
8 90% of this land is furnished by people that do not live within approximately a mile of  
9 the facility. As a matter of fact, only one participant lives adjacent to the facility, and  
10 therefore almost all of the participants have limited interest in the environmental impact,  
11 agricultural impact, hazards, diminished quality of life, and loss of property value the  
12 project will impose on our community. The extent of absentee ownership is shown on the  
13 map below that we made, together with numbered blue dots identifying residence  
14 locations of those who have leased the land.



15 See Ex.-Grant County Intervenor-Frear-3  
16

1           It is worth noting that much of the discontinuity of the project site is due to local  
2 landowners showing their disapproval of the project by not participating, foregoing what  
3 could be tens of thousands of dollars of additional income per year to avoid living in a  
4 utility district.

5           Despite so many absentee landowners leasing land for this project, Grant County  
6 Solar has recognized that neighbors to the project have objections to the project. To  
7 counter the objections, neighboring landowners have been offered small amounts of  
8 money if they agree to sign effects easements signing away their right to speak openly or  
9 take action in the event the imposing facility negatively affects them in expected or  
10 unexpected ways. When neighbors were unwilling to sign away rights for a random  
11 quantity of money, representatives for NextEra/GCS dangle larger quantities but have yet  
12 to provide a contract that protects the neighbors and attempts to ease potential unknown  
13 burdens this facility imposes. During these encounters, land agents falsely claimed other  
14 neighbors were “on board,” or were asking for too much compensation, putting pressure  
15 on the landowners and sowing distrust amongst neighbors.

16           “Good Neighbor” agreements are agreements that bind those who sign to  
17 relinquish important rights, helping the project that is on absentee owner land move  
18 forward unopposed because “good neighbors” living near the project have been paid off.  
19 The response of Grant County Solar that they will work with neighbors when a complaint  
20 is brought forth has little weight with us as the concerns and questions brought to  
21 NextEra January 14, 2020 have been met with silence and inaction. We are still waiting  
22 for their response.

23 **Q: Do you have concerns about the big picture of siting solar projects in Wisconsin?**

1 A: Yes, we do. Wisconsin's lack of regulations and siting rules around renewable energy  
2 give communities little footing contest the siting of these utility scale facilities as they are  
3 installed privately and sold to the utilities at ratepayer expense. NextEra already  
4 announced that it had reached an agreement with Alliant to purchase this facility when  
5 built. This is evidence that NextEra is working as a strawman for Alliant, circumventing  
6 the due diligence required of a utility to show need, cost to ratepayers, and consideration  
7 of other strategies and sites. Then once purchased the utility can choose to pursue  
8 expansion, potentially exercising eminent domain. While this may sound alarmist, Alliant  
9 via a land agent has started approaching landowners around the proposed GCS facility to  
10 expand it an additional ~2000 acres even before the facility has been approved. That  
11 would make this facility about the size of Platteville, the largest city in Grant County.

12 This encroachment of solar into agricultural communities consuming productive  
13 farmland is occurring more and more across Southwest Wisconsin as privately owned out  
14 of state companies quietly approach landowners and steamroll farming communities,  
15 turning them into utility districts that rival the largest cities in the county. While we do  
16 agree renewable energy is necessary, we think there needs to be more consideration and  
17 regulation at the state and local level with much deeper consideration of siting factors. It  
18 is irresponsible not to take a comprehensive look at the siting of renewable energy in  
19 Wisconsin. Instead of siting on prime farm ground, we as a state need to approach  
20 renewable energy strategically. While the carbon footprint of solar power is less than  
21 power sources of the past, the physical footprint of solar is significantly more. This is  
22 one of many impacts of solar generation, and planning and zoning ordinances and laws  
23 meant to protect this land need to be respected.

1 Distributed generation utilizing rooftops, brownfields, and less productive  
2 irrigated land would help minimize the effects of the physical footprint. A Rhode Island  
3 study shows the high potential of distributed siting.<sup>3</sup> The need for food is ever increasing  
4 and to utilize our resources thoughtfully, such as use of our prime agricultural ground,  
5 will become increasingly more important as more projects like these are proposed.

6 A recent study published in *Environmental Science &*  
7 *Technology* examined the use of non-conventional land cover types for  
8 solar siting. The researchers – hailing from UC Berkeley, UC Davis, and  
9 the Lawrence Berkeley National Laboratory – identified four such land  
10 types: the built environment, salt-affected land, contaminated land, and  
11 water reservoirs. Each of these land cover types has the potential for  
12 creating synergies between solar energy development and ecosystem  
13 conservation.<sup>4</sup>  
14

15 This study done in California should be used as a model for Wisconsin. By conducting a  
16 study to understand our existing land cover and the opportunities for synergy we can  
17 develop thoughtful plans to reduce the industrial footprint encroaching on prime farm  
18 ground.

19 **Q: Do you have concerns about impacts of the project on the land?**

20 A: Yes, we do. As NextEra/GCS has stated, they don't know which panels will be used  
21 because the technology is constantly changing. Another of our concerns is that solar  
22 panels contain heavy metals, meaning that hazards are present when panels are  
23 manufactured, damaged, and disposed. In order to properly assess the potential safety  
24 and cost impacts, the type of panel as well as the process and channel for recycling needs  
25 to be known.<sup>5</sup> The cost to recycle solar panels is 10x more than the cost of materials

---

<sup>3</sup> See Ex.-Grant County Intervenor-Frear-9, Solar Siting Opportunities for Rhode Island.

<sup>4</sup> <https://environment-review.yale.edu/reducing-land-use-impact-solar-energy-triple-win-climate-agriculture-and-biodiversity>. See Ex.-Grant County Intervenor-Frear-8, Land-Sparing Opportunities for Solar Energy Development in Agricultural Landscapes: A Case Study of the Great Central Valley, CA, United States.

<sup>5</sup> <https://pv-magazine-usa.com/2020/05/27/solar-panel-recycling-turning-ticking-time-bombs-into-opportunities>

1 recovered, making it a net loss and much cheaper to dispose of panels in landfills.  
2 Currently only 10% of decommissioned solar panels are recycled.<sup>6</sup>

3 A change in technology, a reliability issue, a weather event, and passage of time  
4 making technology obsolete, and may lead to an earlier decommissioning of a significant  
5 quantity of panels and currently the capacity to safely dispose of these on this scale does  
6 not exist in the US. In the case of anything other than an ideal project lifecycle, we the  
7 neighbors and we the rate payers may well be left with the mess and the bill. It is not  
8 “unlikely” that this could happen here given the tornado and derecho, two 100+ MPH  
9 wind events, that came through the proposed project area just this year. NextERA/GCS’s  
10 PSC data request response, ironically submitted on the same day as the derecho, stated  
11 that the array will e constructed to withstand up to 105 MPH winds, which they consider  
12 a once in 300 year event. This discrepancy between design and our experienced severe  
13 weather events over the past 10 years is cause for alarm.

14 Decommissioning raises other questions. NextEra/GCS's CPCN application states  
15 it will take 6 people 8 months to decommission the facility. Assuming 2000hr/year per  
16 person, would mean about 8,000 manhours to remove 725,000 panels, conservatively.  
17 This means removing around 90 panels per manhour. Without simply bulldozing the  
18 facility it is not conceivable that a single person can remove 90 panels per hour and the  
19 equivalent proportion of piles, transformers, fences, underground wiring, and roads. This  
20 estimate seriously calls into question calculation of costs and value of the associated  
21 bonds allocated to bring the land back to same or better state. If the true cost to build and  
22 decommission this facility is being underestimated, the ratepayers will be left with cost to  
23 decommission or we the neighbors will be left we the effects of living and owning

---

<sup>6</sup> <https://www.ecowatch.com/solar-panels-e-waste-recycling-2647335436.html>

1 property around a solar facility in disrepair and potentially a superfund site containing  
2 heavy metals leaching into the ground water.

3 **Q: You mentioned tornadoes above. Do you have concerns about extreme weather**  
4 **events?**

5 A: Yes, we have concerns that are supported by our experience. Grant County has more  
6 severe weather events than anywhere else in the state. The land that this project has been  
7 sited on has had a tornado and a derecho come through just this year. On our property, we  
8 lost a barn to the tornado and a second barn along with countless trees to the derecho. We  
9 have attached photos of the tornado, and an article quoting Henry Frear regarding the  
10 storm as Ex.-Grant County Intervenors-Frear-4. You can view a youtube of the Tornado,  
11 March 2020 here:

12 <https://www.youtube.com/watch?v=AWXrTByOT3U>

13 Another video of an extreme weather event this year is Derecho August 2020:

14 <https://www.youtube.com/watch?v=q7w2TPgOAI0>

15 In the last 5 years on the very land of the proposed facility, there have been numerous  
16 extreme weather events with associated damage, including a grain bin was crushed by  
17 wind and the roof of a barn taken off by an unconfirmed tornado (see picture) which  
18 landed on our land a half a mile away. See How farms work video & Picture below of the  
19 tornado in May, 2017 – and the youtube can be viewed here:

20 <https://www.youtube.com/watch?v=eo15IYXwB1A>

21 **Q: Are there technical questions that you have concerns about?**

22 A: We do have concerns about some technical issues, based on the information provided by  
23 Grant County Intervenors, the PSC, in particular the Environmental Assessment, and our

1 own research. Our backgrounds, education, training, and expertise provide a foundation  
2 to learn about these issues and recognize that these issues deserve more investigation.

3 On a small scale it is understood that electromagnetic fields have a limited impact  
4 to those exposed to them. However, the potential impacts of 3 square miles of  
5 electromagnetic fields produced by equipment harnessing 300MW direct current are  
6 considerably higher in such close proximity to homes. The Application and testimony  
7 shows that there will be both electric and magnetic fields associated with this project. We  
8 ask that the PSC consider the recommendations of both ICNIRP and NIEHS for magnetic  
9 fields. Those recommendations can be found here:

10 <https://www.icnirp.org/cms/upload/publications/ICNIRPfrgdl2020.pdf> p. 48

11 [https://www.niehs.nih.gov/health/materials/electric\\_and\\_magnetic\\_fields\\_associated\\_wit](https://www.niehs.nih.gov/health/materials/electric_and_magnetic_fields_associated_wit)  
12 [h\\_the\\_use\\_of\\_electric\\_power\\_questions\\_and\\_answers\\_english\\_508.pdf](https://www.niehs.nih.gov/health/materials/electric_and_magnetic_fields_associated_wit)

13 We are also concerned about the impact of glare. Since glare is a known issue and  
14 requires modeling to determine potential glare impacts, it deserves more focused review.  
15 The height used to evaluate glare at residences varies between the Two Creeks facility  
16 and GCS, both NextEra projects, calling into question whether glare will be imposing at  
17 other heights.

18 The Grant County Solar claim that several miles of solar panels lining a flight  
19 path isn't likely to affect an unassuming pilot or highway driver is likely understated.  
20 Our home is directly in a common flight path of the Lancaster airport which is often used  
21 for pilot training by the University of Dubuque. Pilots repeatedly circle the field, and  
22 more than a strict north and south approach should be considered. This is also a concern

1 for drivers along the highly trafficked Highway 61. Glare has been a problem for drivers  
2 near other projects, and we believe more care should be taken.<sup>7</sup>

3 Another concern is “heat island effect.” There has been little research on this, and  
4 what has been done notes that more study is needed. According to an IEEE publication,  
5 “The field data also show a clear decline of air temperatures as a function of distance  
6 from the perimeter of the solar farm, with the temperatures approaching the ambient  
7 temperature (within 0.3H), at about 300 m away.”<sup>8</sup> Which mean that our homes, crops,  
8 and livestock would potentially experience a climate change within 300m of the solar  
9 farm. Given this study, it is clear that a minimum 300m setback from property lines  
10 would be necessary. The few studies available look mainly at average temperature data  
11 taken at slow sampling rates, downplaying the effects of temperature spikes caused by  
12 brief gusts of wind that could lead to discomfort and heat stress on humans and livestock.

13 In preparing our comments on the Environmental Assessment, we learned that  
14 there is no basis to dismiss concern about potential impacts, and have attached the studies  
15 we had included with our Comment. Ex.-Grant County Intervenors-Frear-5a, 5b, 5c.  
16 Again, more study is needed to accurately define and model thermal effects to the  
17 surrounding areas for a give climate, facility size, and installation type.

18 Without more study, and without solid knowledge about heat island effect, large  
19 projects should not be permitted.

20 **Q: Does this conclude your testimony?**

21 **A:** Yes, it does.

---

<sup>7</sup> <https://www.pagerpower.com/news/pendleton-solar-farm-usa-creating-unwanted-solar-panel-glare-towards-drivers/>  
<sup>8</sup> 39<sup>th</sup> IEEE PVSC\_Heat Island Effet-6-10-13final2.docx