

**BEFORE THE OHIO POWER SITING BOARD**

<b>In the Matter of the Application of</b>	)	
<b>Big Plain Solar, LLC for a</b>	)	
<b>Certificate of Environmental</b>	)	<b>Case No. 19-1823-EL-BGN</b>
<b>Compatibility and Public Need</b>	)	

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**DIRECT TESTIMONY OF MICHAEL RICHARD**

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**Q.1. Please state your name, title, and business address.**

**A.1.** My name is Michael Richard. I am a Permitting Manager for First Solar, 350 West Washington Street, Tempe, Arizona 85281. Big Plain Solar, LLC (“Applicant” or “Big Plain”) is a subsidiary of First Solar Development LLC. I am the permitting manager for the Madison Solar Farm (the “Project”) which the Applicant is developing.

**Q.2. What are your duties as a Permitting Manager?**

**A.2.** I am responsible for the development of a number of solar energy projects being developed by First Solar Development across the eastern United States. My responsibilities include, but are not limited to identifying permits and authorizations required for solar energy projects, managing the permit process to receive permits required for development and construction of projects, and working with our development team to site new projects. I work closely with our consultants and local, state and federal agencies to complete field studies, assess impacts and meet permit requirements for solar projects across the eastern United States.

**Q.3. What is your education and professional background?**

**A.3.** I have a M.S. in environmental science from Stephen F. Austin State University and a B.S. in environmental science with a minor in wildlife management from the

1 University of Arkansas. Previously, I was an environmental consultant at BGE, Inc., where  
2 I focused on regulated waters and protected species permitting.

3 **Q.4. On whose behalf are you offering testimony?**

4 **A.4.** I am testifying on behalf of the Applicant.

5 **Q.5. What is the purpose of your testimony?**

6 **A.5.** First, I will provide background information concerning the Application and  
7 Exhibits filed on April 27, 2020 (Company Exhibits 1 and 1C), the Application Supplement  
8 filed on May 28, 2020 (Company Exhibit 2), the Application Supplement filed on June 22,  
9 2020 (Company Exhibit 3), and the Notice of Footprint Modification filed on November  
10 30, 2020 (Company Exhibit 4). Second, I will summarize the major items in the  
11 Application and Supplements and sponsor their admission into evidence along with the  
12 exhibits, certificates of service, proofs of publications, and other letters required by Ohio  
13 Power Siting Board rules. Third, I will address concerns raised by the public via comments  
14 on the case docket for this proceeding. Finally, I will address and support the Joint  
15 Stipulation that was entered into by the Applicant, the Staff of the Ohio Power Siting  
16 Board, and the Ohio Farm Bureau Federation (collectively, the “Stipulation Parties”) on  
17 January 22, 2021 (the “Joint Stipulation”). The Joint Stipulation has been marked as Joint  
18 Exhibit 1.

19 **Q.6. Would you please provide a summary and overview of the proposed Project?**

20 **A.6.** The Applicant is proposing to build the Project as an up to 196 MW solar-powered  
21 generating facility in Fairfield and Oak Run townships in Madison County, Ohio. The  
22 Project will consist of photovoltaic (“PV”) panels, access roads, above and below ground  
23 electric collection cables, a collection substation (which includes transformers), a laydown

1 area for construction staging, and inverters. The energy generated by the Project will be  
2 delivered through a generation interconnection transmission (“gen-tie”) line from the  
3 collection substation to the proposed point of interconnect (“POI”) switchyard, located  
4 adjacent to the existing Beatty – London 138 kilovolt (kV) transmission line. The gen-tie  
5 line and POI switchyard will be the subject of a separate application to the OPSB.

6 **Q.7. What is the general purpose of the Project?**

7 **A.7.** The general purpose of the Project is to produce and deliver clean, renewable  
8 electricity to the Ohio bulk power transmission system to serve the needs of electric utilities  
9 and their customers. The electricity generated by the Project will be delivered to the  
10 transmission grid operated by PJM Interconnection, LLC for sale into the wholesale  
11 electric market or under a power purchase agreement.

12 **Q.8. Can you provide an overview of the Project?**

13 **A.8.** Yes. The Project is located within approximately 2,438 acres of privately-owned  
14 land in the Project Area, which has been leased by the Applicant. The Project’s design and  
15 engineering is not yet finalized, but it is expected to occupy a maximum of 1,200 acres of  
16 the larger, overall Project Area. The predominant land use in the Project Area is  
17 agriculture. Consequently, the Project will be located on previously disturbed land that has  
18 been mostly cleared for agriculture and is relatively flat. This land feature easily  
19 accommodates the installation of solar panels and is compatible with the proposed Project.  
20 Further, the Project Area has adequate open space available to avoid impacting sensitive  
21 ecological resources.

1 The Project will generate electricity from approximately 800,000 PV solar panels. The PV  
2 panels will be secured on a single-axis tracker racking system supported on metal piles that  
3 will be driven into the ground to a depth between five and nine feet.

4 Single-axis tracker designs vary by manufacturer, but generally consist of a series of  
5 mechanically linked horizontal steel support beams known as torque tubes, with a drive  
6 train system usually located in the center of the rows, dividing the array into two sides.

7 The number of rows within a tracker block is typically limited by the drive system's ability  
8 to move multiple torque tube assemblies. This row design is also determined by the amount  
9 of the desired solar output to the inverters. Rows would be aligned north to south and the  
10 PV panels would pivot, tracking the sun's motion from east to west throughout the day.

11 The panels will be a maximum of 12 feet from the ground when tilted to their highest  
12 position and will be surrounded by a fence. At a capacity of 196 MW, the Project is  
13 expected to operate with an average annual capacity factor of about 24%, generating  
14 approximately 407 GWh of electricity each year, depending on the final equipment models  
15 selected. Additional information regarding dimensions and materials for solar panels under  
16 consideration are provided in Exhibit B to the Application.

17 **Q.9. Were you involved in the preparation of the Application, the May 28, 2020 and June**  
18 **22, 2020 Supplements, the November 30, 2020 Notice of Footprint Modification, and**  
19 **the Applicant's responses to Staff Data Requests?**

20 **A.9.** Yes, I was directly involved in the preparation of the Application and Exhibits  
21 (Company Exhibit 1 and 1C), the Supplements (Company Exhibit 2 and 3), the Notice of  
22 Footprint Modification (Company Exhibit 4), as well as all of the Responses to the Staff  
23 Data Requests (Company Exhibit 5).

1 **Q.10. Please summarize the Supplements to the Application?**

2 **A.10.** On May 28, 2020, Big Plain filed a supplement to the Application, updating  
3 Exhibit H, Existing Conditions Background Sound Survey and Noise Impact Assessment.  
4 Through this filing, the Applicant withdrew its previous request for a waiver of Ohio  
5 Adm.Code 4906-4-08(A)(3)(c) (noise-sensitive areas within one mile of the facility). Big  
6 Plain filed another supplement to its application on June 22, 2020, updating test boring  
7 locations and the Geotechnical Exploration Plan. Through this filing, Big Plain withdrew  
8 its previous request for a waiver of Ohio Adm.Code 4906-4-08(A)(5)(c) (test boring plans).

9 **Q.11. Will you please provide a summary of the Notice of Footprint Modification?**

10 **Q.11.** Yes. On November 30, 2020, Big Plain filed a Notice of Footprint Modification,  
11 pursuant to Ohio Adm.Code 4906-3-11(A)(6). The purpose of filing the Notice was to  
12 allow for a change in the location of the collection substation. The substation was moved  
13 0.4 mile northwest from what was indicated in the Application. The shift in location was  
14 made to minimize impacts to state jurisdictional wetlands and is expected to decrease  
15 impacts to these wetlands by 0.06 acre. As I further explain below, as a result of this shift,  
16 no material impacts are expected.

17 **Q.12. Were copies of the accepted Application served on local public officials and libraries**  
18 **in accordance with Ohio Adm.Code 4906-3-07(A)?**

19 **A.12.** Yes, I am sponsoring Company Exhibit 6, which is the proof of service of the  
20 Application.

21 **Q.13. Did the Applicant file and serve a copy of the letter sent to property owners and**  
22 **tenants within the Project Area or contiguous to the Project Area?**

1       **A.13.** Yes, pursuant to Ohio Adm.Code 4906-3-03(B), the Applicant sent a letter to  
2       certain property owners on February 10, 2020 announcing the Public Information Meeting  
3       on March 4, 2020. Subsequent letters were mailed on October 23, 2020, pursuant to Ohio  
4       Adm.Code 4906-3-09(A)(1), and on December 16, 2020 pursuant to Ohio Adm.Code  
5       4906-03-09(A)(2). See Company Exhibit 7, which I am sponsoring.

6       **Q.14. Did the Applicant cause notice of the public informational meeting, the Application,**  
7       **and the hearing dates to be published in local newspapers?**

8       **A.14.** Yes, notices were published in the Madison Messenger, a newspaper of general  
9       circulation in Madison County, Ohio on October 13, 2019, February 23, 2020, October 23,  
10      2020, and December 20, 2020. See Company Exhibit 7.

11      **Q.15. Would you please list the consultants that the Applicant retained to assist in the**  
12      **preparation of and/or support of the Application and Exhibits and their respective**  
13      **areas of responsibility?**

14      **A.15.** Yes. The Applicant worked with EDR, acting as lead consultant on the  
15      Application, to coordinate the studies used to generate the Application and associated  
16      exhibits. The Applicant also engaged consultants to support both the Joint Stipulation and  
17      the Application through testimony. The consultants and their respective subject areas of  
18      expertise are:

- 19           • Environmental Design & Research, Landscape Architecture, Engineering, &  
20           Environmental Services (“EDR”) – Visual Resources;
- 21           • Hessler Associates, Inc. (“Hessler Associates”) – Noise Assessment;
- 22           • Hull and Associates (“Hull”) – Transportation; stormwater; decommissioning;
- 23           • Westwood – Ecological Assessment ; and

- CohnReznick – Property Values

**Q.16. Do you believe that the Project will have a positive impact on the local community?**

**A.16.** Yes. The Project is predicted to create 534 full-time on-site construction and project development jobs, with a projected wage rate of \$21.39 per hour and 45.6% employer payroll overhead. The present worth of construction payroll during the first year of construction is estimated to total \$23.76 million. It is also anticipated that the operation of the Project could generate 11 full-time jobs with a projected wage rate of \$21.39 per hour and 45.6% employer overhead, consistent with Ohio state averages, which are estimated to be approximately \$22 per hour for installation, maintenance, and repair occupations (U.S. Department of Labor, 2018). The present worth of operation payroll during the first year of operation is estimated to total \$476,055.

Along with the creation of these jobs, the community will benefit from tax payments from the Project. Assuming the Applicant will utilize payment in lieu of taxes (“PILOT”) arrangement, payments will be made to Madison County. These funds would be apportioned to Fairfield Township, Oak Run Township, and one school district, the Madison-Plains Local School District. Based on the maximum payment of \$9,000/MW and the Project capacity of 196 MW, the PILOT amount will total approximately \$1,764,000 annually over the lifespan of the Project. The Project is expected to achieve commercial operations in the second quarter of 2023 and have a lifespan of approximately 40 years.

Finally, the proposed Project will have a beneficial impact on the local economy. The Project is expected to have a positive impact on economic output, a measurement of the value of goods and services produced and sold by backward linked industries. Economic

1 output provides a general measurement of the amount of profit earned by manufacturers,  
2 retailers, and service providers connected to a given project. The value of economic output  
3 associated with the construction of the Project is estimated at \$123.3 million.

4 **Q.17. Has the Project been designed to achieve minimum impacts?**

5 **A.17.** Yes. The Applicant has been working with landowners, elected representatives and  
6 community members to discuss the development of the Project since 2017. Those  
7 discussions have been constructive. We have designed the Project to minimize or eliminate  
8 potential impacts of construction and operation.

9 Temporary construction activities are expected to have typical and relatively limited  
10 impacts given their intermittent nature, time of day restrictions, and use of best  
11 management practices. Increased traffic during construction will be managed and will  
12 cease when the Project is operational. The Applicant will obtain all required permits and  
13 authorizations including, for example, Nationwide Permits from the U.S. Army Corps of  
14 Engineers, if required

15 As identified earlier, the Applicant also engaged consultants to study the potential  
16 environmental, ecological, cultural, and visual impacts of the Project. Those studies are  
17 attached to the Application as exhibits. Additionally, as Tom Braman of Westwood,  
18 Matthew Robinson of EDR, Matt Marquis and Mark Bonifas of Hull, David Hessler of  
19 Hessler Associates, and Andrew Lines of CohnReznick explain in their separate testimony,  
20 there are few or no expected impacts from the Project.

21 The Project has been sited to minimize adverse impacts. Impacts to forested areas,  
22 wetlands, and streams have been minimized by careful layout and design. Although studies  
23 found that habitat for state or federal listed species within the Project Area is minimal, the



1 Applicant will take measures to avoid impacts to potentially suitable habitat for the Indiana  
2 and northern long-eared bats by minimizing and seasonally limiting tree clearing to  
3 October 1 and March 31. Measures will also be taken to avoid the nesting habitat of  
4 northern harriers and upland sandpipers. Additionally, no agricultural district land occurs  
5 within the Project Area.

6 Minimal sound is expected to emanate from the Project due to the near-silent operating  
7 nature of solar arrays. The collection substation is the primary source of operational noise  
8 for a utility-scale solar facility, and will produce some operational noise during nighttime  
9 hours as the transformers will remain energized. The inverters and transformers that are  
10 part of a solar panel array will produce no noise during nighttime hours and minimal noise  
11 during daylight hours. Accounting for these constraints, the Project layout is designed to  
12 minimize noise impacts to nearby residences.

13 Visual impacts of the Project will be mitigated by the flat nature of the terrain, the low  
14 profile of the solar panels, preservation of natural vegetative buffers, and by addition of  
15 added vegetative screening, in selected locations. The Applicant has also implemented a  
16 50-foot setback for panels from adjacent, non-participating properties which serves to  
17 reduce Project visibility.

18 Other operational impacts will be minimal. The Project will generate no wastewater, no  
19 air emissions, and minimal solid waste. The Project will generate no odor and little light.  
20 The Applicant will implement a complaint resolution procedure, pursuant to Joint  
21 Stipulation Condition 9, to appropriately investigate and address any complaints regarding  
22 construction and operation of the Project.

1 Finally, as I noted above, Big Plain filed a Notice of Footprint Modification with the Board  
2 on November 30, 2020. The purpose of this modification is to minimize impacts to state  
3 jurisdictional wetlands by moving the substation approximately 0.4 mile northwest. As a  
4 result of this shift, minor shifts to the collection line were required. The Applicant did not  
5 propose any other changes to the Project footprint and no new adjacent landowners were  
6 impacted.

7 The change in the substation location is expected to decrease impacts to wetlands by 0.06  
8 acre. To ensure no further impacts as a result of the change, Big Plain conducted updated  
9 analyses for noise and visual impacts. As Mr. Hessler will further explain, the updated  
10 noise impact assessment for the relocated substation, attached as Exhibit C to the Notice  
11 of Footprint Modification, indicates there are no additional increase in noise compared to  
12 the information presented in the Application. Further, as Mr. Robinson will testify, the  
13 updated viewshed analysis, which is attached as Exhibit D to the Notice of Footprint  
14 Modification, indicates a 6.2% reduction in substation visibility within the two-mile visual  
15 study area compared to the results in the Application. Consequently, no new material  
16 impacts are expected as a result of the change. Big Plain sent a notice of this change to  
17 public officials and adjacent landowners to the substation property on December 3, 2020.

18 **Q.18. How did the Applicant decide to locate the Project in Madison County?**

19 **A.18.** The Applicant chose to pursue the Project in the southwestern region of Ohio for a  
20 variety of reasons, including the availability of manageable access to the bulk power,  
21 transmission system, strong solar resources, sufficiently low population density, positive  
22 feedback from landowners and local officials, highly compatible land use, proximity to  
23 major transportation routes, and few environmentally sensitive areas. First, existing bulk

transmission lines are located within the vicinity of the Project Area and Ohio data obtained from the NREL National Solar Radiation Database suggests a suitable solar resource in the southwestern region of Ohio, including Madison County.

Second, land use characteristics, general topography, and access to transportation routes were also considered. Land use in the area is primarily agricultural and characterized by open spaces suitable for hosting a utility scale solar power project. Ideal solar development areas are flat with limited variations in topography. Additionally, the Project Area has a low population and residential development density compared to surrounding areas and statewide averages. The Project Area is located approximately 20 miles southwest of the city of Columbus, approximately four miles southeast of the city of London, south of interstate I-70, and north of I-71. Additionally, State Route (SR) 665 is north of the Project Area and SR 56 is southwest of the Project Area. These major roads provide accessibility to the Project Area for construction equipment and staff.

Third, engaged local participants are essential to the success of any solar project. The Applicant has and will continue to meet with various participating landowners to review the Project Area footprint on their respective parcels. Among other things, these meetings often involve field analysis to ensure that Project components are sited in a manner that minimizes impacts to any site features of importance to the landowner. Additionally, the Applicant designed the Project to minimize the number of PV panels located near non-participating residences. The Applicant has received positive feedback from landowners and local officials regarding the Project siting.

**Q.19. Will the Project adversely impact cultural historic resources?**

1       **A.19.** No. On behalf of the Applicant, Weller & Associates, Inc. completed a preliminary  
2       cultural review of the Project Area and a two-mile buffer, which was submitted to the  
3       Application as Appendix E to Exhibit I. No National Register of Historic Places (“NRHP”)  
4       listed or eligible properties or districts are recorded in the Project Area or the two-mile  
5       buffer. Eighty-four archaeological sites have been previously recorded in the two-mile  
6       study area and forty-two previously recorded archaeological sites are located within the  
7       defined Project Area. After further field survey review, six archaeological sites identified  
8       within or near the boundaries of the Project were determined through the Ohio State  
9       Historic Preservation Office (“OSHPO”) consultation to be potentially eligible for the  
10      NRHP. In addition, one architectural resource was identified as individually eligible for  
11      listing in the NRHP. The Applicant is in the process of finalizing a Memorandum of  
12      Understanding (“MOU”) with the OSHPO. As a result of negotiations with OSHPO, the  
13      Applicant has agreed to avoid the six archaeological sites before and during construction  
14      and throughout the operation of the Project, thereby ensuring there is no effect on these  
15      sites. In addition, vegetative screening will be implemented for the protected architectural  
16      resource for the life of the Project. Specifically, Big Plain will maintain vegetative  
17      screening for the life of the Project for the protected resource and will replace any failed  
18      plantings for such vegetative screening so that, after five years, at least 90 percent of the  
19      vegetation has survived. Therefore, the MOU, once executed, will further ensure that the  
20      Project will have minimum impact on these identified cultural resources.

21      **Q.20. How will the Project avoid impact to surface waters?**

22      **A.20.** In order to avoid and minimize impacts to waters of the U.S. and wetlands, on-site  
23      investigations were conducted to establish the locations of streams and wetlands, and

1 Project components were sited in an effort to avoid impacts to these resources to the  
2 maximum extent practicable. PV panel installation is not considered a significant impact  
3 because PV panels are supported by steel pilings that are directly embedded and not  
4 considered fill. For all identified stream and wetland crossing points, appropriate  
5 construction techniques will be used to avoid and minimize impacts to the extent  
6 practicable. As a result, the vast majority of stream impacts will be temporary in nature.  
7 Temporary wetland impacts, which are associated with underground collection lines and  
8 temporary disturbance due to access road grading, total 0.16 acres. Temporary watercourse  
9 impacts, which are associated with underground collection lines, access roads, and the  
10 proposed laydown yard, total 0.33 acres. Permanent watercourse impacts, which are  
11 associated with overhead collection lines and portions of watercourses located within the  
12 array, total 0.13 acres. While the Applicant indicated in responses to Staff data requests  
13 that PV panel arrays will have permanent impacts of 7.94 acres, I want to clarify that the  
14 only impact to the category 1 wetlands (which are low quality wetlands) will be the support  
15 piles for the PV panel arrays which will be significantly less. Also, the placement of piles  
16 do not result in dredge or fill material in the wetlands. Furthermore, the category 1  
17 wetlands where a small number of panels will be located are in existing disturbed  
18 agricultural fields. Lastly, the Project will avoid category 2 and 3 wetlands (which are  
19 higher quality).

20 **Q.21. How will the Project protect existing drain tile in the Project Area?**

21 **A.21.** The Project has been designed to avoid known drainage mains to the extent  
22 practicable. The Applicant has communicated with the Madison County Engineer and  
23 created a preliminary plan for facilitating drainage from non-participating parcels. As part

1 of this plan, the Applicant will find and replace, prior to construction, drainage tile mains  
2 that facilitate the drainage of non-participating parcels. Doing so will allow the Applicant  
3 to install new mains throughout the Project Area in known locations. While damage to  
4 these mains as a result of subsequent construction and operation/maintenance activities is  
5 not anticipated, any of these drainage tile mains damaged during subsequent construction  
6 activities or during the period for operation and decommissioning will be identified and  
7 documented. The damage will be assessed for the potential impact on the effective  
8 drainage of the Project Area and on the drainage of neighboring areas. Since the site does  
9 facilitate the drainage of adjacent areas, any damage to the mains will be remedied  
10 expeditiously. It is anticipated that a local drain tile contractor or the farmer currently  
11 tending the land will be involved in repair activities. With the above steps, I do not  
12 anticipate any material changes to existing drainage flows to other properties surrounding  
13 the Project.

14 Additionally, Joint Stipulation Condition 15 imposes a similar requirement that the  
15 Applicant avoid or minimize damage to functioning field tile drainage systems and soils  
16 resulting from the construction, operation, and/or maintenance of the Project in agricultural  
17 areas and to promptly replace or repair any damaged drain tile systems at the Applicant's  
18 expense. All repairs will be completed by a qualified contractor. Importantly, Condition  
19 15 not only requires the Applicant to promptly repair any damage to drain tile in the Project  
20 Area, but also to promptly repair drain tile in the Project Area to protect the field tile system  
21 of an adjacent landowner if the adjacent landowner's drain tile system is affected by the  
22 drain tile system in the Project Area.

1 **Q.22. How will the Applicant address viewshed concerns?**

2 **A.22.** It is important to recognize that the Project will have a relatively modest visual  
3 impact on the area. The Project Area, which is primarily agricultural, is quite flat, and  
4 minimal grading is expected for the installation of the PV arrays. Under flat conditions  
5 found across most of the Project Area, panels will reach approximately 12 feet off the  
6 ground when tilted to their highest position. The rotation of tracking panels during the day,  
7 as they follow the path of the sun, will typically be too slow for observers to perceive.  
8 Additionally, the Applicant has implemented a 50-foot setback for panels from adjacent,  
9 non-participating properties, which serves to reduce Project visibility. Thus, the Project  
10 will have a relatively low visual profile.

11 As explained further by Matthew Robinson from EDR, the Applicant will also take steps  
12 to mitigate viewshed impacts by utilizing screening to lessen the visual impact of the  
13 Project. The Applicant will install vegetative material at select locations so as to provide  
14 screening of the Project. The purpose of vegetative screening is not to completely block  
15 the Project from any visibility. Instead, proposed vegetative mitigation will use the vertical  
16 elements of native plants to break up the horizontal lines created by the PV panels and  
17 fenceline. Doing so will help the Project fall into the background vegetation rather than  
18 stand out as a foreground element. Finally, pursuant to Condition 12 in the Joint  
19 Stipulation, the Applicant will work with non-participating landowners with a direct line  
20 of sight to the Project Area to mitigate any viewshed concerns.

21 **Q.23. How will the Applicant protect existing vegetation in the Project Area?**

22 **A.23.** The Applicant has submitted a Vegetation Management Plan as Exhibit K to the  
23 Application. Protection of vegetation during construction will be primarily accomplished

1 through careful site planning. A majority of Project components have been sited on  
2 agricultural land, thus avoiding significant impacts to successional grasslands, shrubland,  
3 forested, and wetland areas. In addition to siting, measures to protect vegetation include  
4 the identification of sensitive areas such as wetlands where no disturbance or vehicular  
5 activities will be allowed, limiting areas of disturbance to the smallest size practicable,  
6 educating the construction workforce on respecting and adhering to the physical boundaries  
7 of off limit areas, employing best management practices during construction, and  
8 maintaining a clean work area within the designated construction sites. Following  
9 construction activities, temporarily disturbed areas will be seeded, and stabilized with  
10 mulch and/or straw if necessary, to reestablish vegetative cover in these areas. Other than  
11 in active agricultural fields, native species will be allowed to revegetate all temporarily  
12 disturbed areas. Mr. Braman provides more explanation with regard to existing vegetative  
13 communities in his testimony.

14 **Q.24. Will the Project comply with applicable safety and equipment standards?**

15 **A.24.** Yes. Additionally, I note that the various organizations referenced in the Staff  
16 Report of Investigation at page 31 may not have issued or published safety and equipment  
17 standards applicable to the Project. The Applicant will comply with those safety and  
18 equipment standards that are applicable to commercial-scale solar farms and are standard  
19 in the industry.

20 **Q.25. How will the Applicant ensure the security of the Project?**

21 **A.25.** The Project will be protected by nine-foot chain link perimeter security fence,  
22 controlled access gates, electronic security systems, and potentially remote monitoring.  
23 Additionally, “No Trespassing” and “High Voltage Equipment” signs will be placed



1 around the fence perimeter, warning the public of the potential hazards within the fenced  
2 Project Area.

3 **Q.26. How is the Applicant planning to decommission the Project at the end of the Project's**  
4 **useful life?**

5 **A.26.** As further explained by Mr. Bonifas, the Applicant has included a  
6 Decommissioning Plan as Exhibit O to the Application. The plan provides for the removal  
7 of Project components and the return of the Project Area to its original grade, to the extent  
8 possible. It is expected that decommissioning will begin approximately 40 or more years  
9 after Project operation is initiated.

10 **Q.27. Will there be any financial assurance requirements associated with the**  
11 **decommissioning?**

12 **A.27.** Yes. Condition 17, places several requirements related to decommissioning on the  
13 Applicant. At least 30 days prior to the preconstruction conference, the Applicant has to  
14 submit an updated decommissioning plan, that includes, among other things: a total cost  
15 estimate to decommission the facility without regard to salvage value; the  
16 decommissioning cost net of the estimated salvage value of the equipment; a timeframe to  
17 periodically update the decommissioning cost estimates on the tenth anniversary of  
18 commercial operation and every five years thereafter; and a provision that the  
19 decommissioning financial assurance mechanism include a performance bond based on the  
20 total cost of decommissioning net of salvage value where the company is the principal, the  
21 insurance company is the surety, and the Ohio Power Siting Board is the obligee. Under  
22 this condition, the Applicant has to post the financial assurance when at the first periodic  
23 update where the decommissioning cost net of salvage value is positive.

1 **Q.28. Will agricultural fields within the Project Area be suitable for farming after the**  
2 **Project is decommissioned?**

3 **A.28.** Yes. The Decommissioning Plan, which is attached as Exhibit O to the  
4 Application, indicates that the Project Area can be returned to agricultural use. Restoration  
5 will include a return to its present-day, pre-construction conditions, to the extent feasible.  
6 The site will also be revegetated using a seed mix appropriate for the region.

7 **Q.29. Will construction of the Project result in intrusive amounts of traffic, noise or dust?**

8 **A.29.** No. The amount of dust generated will be relatively low for the Project's acreage.  
9 Given the relatively flat nature of the surrounding area, relatively little topsoil will be  
10 removed. There will be minimal grading and other earth-moving activities, and virtually  
11 no excavation except for efficient trenching. As with other construction activities, dust  
12 emissions will be localized to the area of activity and temporary. Best management  
13 practices in the construction industry will be used to minimize the amount of dust created  
14 by construction. Additionally, as detailed in the testimonies of Mr. Bonifas and Mr.  
15 Hessler, traffic and noise resulting from construction of the Project should be insignificant.

16 **Q.30. Will the Project have an impact on telephone, radio, or other signals or electronic**  
17 **devices?**

18 **A.28.** No. The Applicant is not aware of any research conducted to date that indicates  
19 utility-scale solar generation facilities interfere with communication systems. Solar arrays  
20 generate weak electromagnetic fields ("EMFs") during the day that dissipate at short  
21 distances. Specifically, solar arrays generate EMF in the same extremely low frequency  
22 range as electrical appliances and wiring found in most homes and buildings. Accordingly,

1 the Applicant does not anticipate interference with radio or television reception due to weak  
2 electric fields that will be produced by the Project.

3 **Q.31. Is there a potential risk of hazardous or toxic substances being released to the**  
4 **environment as a result of the construction and operation of the Project?**

5 **A.31.** No. As Ricky Sinha from First Solar further explains in his testimony, the Project's  
6 installation and use of solar panels will not create a risk of hazardous or toxic substances  
7 being releasing into the environment. With regard to potential impacts to soil,  
8 groundwater, and air quality, testing of commercial solar panels with the methodology  
9 developed by the International Energy Agency has found that potential health risks related  
10 to lead and cadmium content are orders of magnitude below human health screening levels.  
11 Additionally, numerous studies have confirmed the environmental safety and benefits of  
12 solar panel technology.

13 **Q.32. Will the Project decrease adjacent property values?**

14 **A.32.** No. As further explained by Andrew Lines from CohnReznick, there is no  
15 consistent and measurable negative property value impacts for properties located adjacent  
16 to commercial-scale solar farms that can be attributed to those farms.

17 **Q.33. Why did the Applicant not submit the final engineering design along with the**  
18 **Application?**

19 **A.33.** Producing the final engineering design for a solar farm is a complex and expensive  
20 undertaking. In my experience, the investment required for final engineering design occurs  
21 only when certain key authorizations for a project have been obtained, which in Ohio would  
22 be the certificate issued by the Board. To explain further, the panel selected for a project  
23 will drive the final layout, including the racking used, inverter type, row width, panel

1 orientation, post design, access road design, and inverter location. Panel technology, along  
2 with pricing, is evolving, with new models being issued or improved every four to six  
3 months. Given the Board's lengthy application process and the need to specify panel  
4 technology closer to construction, it is not practical to expend the significant cost and time  
5 for final engineering and detailed construction drawing prior to or during the Board's  
6 review process for a proposed project. In other words, if final engineering design was  
7 submitted with an application, by the time the project was approved, the design of the  
8 project would be obsolete, thereby creating a never-ending cycle of spend, design, review,  
9 and approval of the project. Moreover, the Board's rules contemplate a later submission  
10 of final design (e.g. Ohio Adm.Code 4906-04-03(C)(1)(g) requires an application to  
11 include in a proposed project schedule "preparation of final design").

12 **Q.34. Have you reviewed the public comments filed on the case docket for this proceeding?**

13 **A.34.** Yes. The comments identify the following concerns: setback distance; use of  
14 pesticides; traffic concerns; drainage tiles; installation of pollinator friendly vegetation; the  
15 suitability of siting the Project on agricultural land; and the suitability of siting the Project  
16 in Ohio, which has limited sun in the winter.

17 I will address each of these concerns. Initially, I would like to note the Applicant's  
18 commitment to having a continuing conversation with landowners in and around the  
19 Project Area. Next, with regard to setbacks, the Applicant has developed internal setbacks  
20 to avoid impacts to local roads and residences. PV panels will be sited at least 50 feet from  
21 a non-participating parcel and access roads will be sited at least five feet from a  
22 nonparticipating parcel. Pesticides will be used on a spot treatment basis. Pollinator  
23 friendly species will be incorporated into the planting plan and Condition 27 of the Joint

1 Stipulation requires the Applicant to prevent the establishment or further propagation of  
2 noxious weeds.

3 As I have mentioned above, while some increased traffic is expected during construction,  
4 it will be managed and will cease when the Project is operational. As well, the Applicant  
5 will avoid where possible functioning field tile drainage systems and Condition 15 of the  
6 Joint Stipulation provides assurance that damaged field tile systems are promptly repaired  
7 or repaired as necessary to avoid affecting the field tile systems of adjacent landowners.

8 Furthermore, the Applicant chose Madison County as the Project site because the flat  
9 topography of the area is ideal for solar development. Under the Decommissioning Plan,  
10 the Project Area can be returned to agricultural use at the end of the Project's life.  
11 Additionally, while sunlit hours decrease in the winter, solar panels are still able to collect  
12 sunlight and produce electricity during daylight hours. Solar panels also produce electricity  
13 during cloudy or rainy days, but will not be quite as efficient as they are on clear sunny  
14 days. The Applicant has assessed the Ohio climate and has determined that the Project can  
15 still produce adequate electricity that it will be economically viable at the proposed  
16 location.

17 Finally, I would like to mention that positive comments regarding the Project were received  
18 from the Madison County Commissioners and the Superintendent of the Madison-Plains  
19 Local School District. These comments were sent both to the Board and to First Solar, and  
20 have been identified as Company Exhibit 8.

21 **Q.35. Will the Applicant be sponsoring witnesses to support the Application in addition to**  
22 **your testimony?**

1       **A.35.** In addition to my testimony, as I indicated earlier, the Applicant will present  
2       testimony by Ricky Sinha of First Solar, Tom Braman of Westwood, Matthew Robinson  
3       of EDR, Matt Marquis and Mark Bonifas of Hull, and David Hessler of Hessler Associates,  
4       relative to certain studies contained in the Application and Andrew Lines of CohnReznick,  
5       regarding property values.

6       **Q.36. Did the Applicant enter into a Joint Stipulation in this proceeding?**

7       **A.36.** Yes, the Applicant entered into a Joint Stipulation that includes recommended  
8       conditions for the Project, filed on January 22, 2021.

9       **Q.37. Have you reviewed the Joint Stipulation?**

10      **A.37.** Yes. I was involved in the drafting and negotiation of the Joint Stipulation.

11      **Q.38. Is the Joint Stipulation a product of serious bargaining among capable and**  
12      **knowledgeable parties?**

13      **A.38.** Yes. I was personally involved in the negotiation of the Joint Stipulation. Counsel  
14      represented all the Stipulation Parties and all parties to this proceeding participated in  
15      settlement discussions. During negotiations, the Stipulation Parties all agreed to modify  
16      some of the conditions the Staff proposed in the Staff Report of Investigation.

17      **Q.39. Does the Joint Stipulation benefit the public interest?**

18      **A.39.** Yes. The Project is a major infrastructure project and a major capital investment;  
19      it benefits the community. The Project will generate clean and quiet renewable electricity  
20      and will provide “on peak” power during the high demand period of mid-day and late  
21      afternoon. In addition, the Project will benefit the local economy through jobs created  
22      during construction, additional new jobs to support operation, and new tax revenue. The  
23      Joint Stipulation further benefits the public interest by requiring the Project to take steps

1 and meet certain requirements during the construction and operation of the Project to  
2 minimize impacts of the Project.

3 For example, the Applicant has committed to a two-pronged vegetative screening  
4 approach, which will benefit landowners adjacent to the Project by reducing the Project's  
5 visual impact. First, the Applicant will replace any failed plantings during the first five  
6 years after construction to ensure that at least 90% of the vegetation screening has survived  
7 as of the five-year point. The purpose of the five-year period is to allow plantings to  
8 become established. Second, the Applicant must maintain vegetative screening, which will  
9 consist of various landscape modules, for the life of the Project. Under this second prong,  
10 the Applicant must replace failed plantings within a screening module, if necessary, to  
11 ensure the screening module remains effective at that location (Condition 12). Next, to  
12 further minimize impacts, the Applicant will utilize a highly visible barrier, such as snow  
13 fencing, during construction activities to ensure that construction equipment does not  
14 impact six identified archaeological resources (Condition 13).

15 The Joint Stipulation protects the field tile systems of landowners adjacent to the Project  
16 Area in ensuring that any damaged and unrepaired field tile systems within the Project Area  
17 do not affect adjacent field tile systems (Conditions 15). To protect sensitive areas such as  
18 wetlands and streams, the Joint Application authorizes an environmental specialist to stop  
19 construction activities for up to 48 hours if any issues develop. This would allow the  
20 Applicant and Staff to respond to any reported issues and minimize environmental impacts,  
21 if any, to the sensitive areas within the Project Area (Condition 20).

22 The many benefits of the Project coupled with the conditions of the Joint Stipulation  
23 support a finding that the Joint Stipulation is in the public interest.

1    **Q.40. Does the Joint Stipulation violate any important regulatory principle or practice?**

2           **A.40.** No.

3    **Q.41. What do you recommend that the Ohio Power Siting Board do in regard to the Joint**  
4           **Stipulation?**

5           **A.41.** I recommend that the Ohio Power Siting Board adopt the Joint Stipulation,  
6           including the recommended conditions, without modification.

7    **Q.42. Does this conclude your direct testimony?**

8           **A.42.** Yes, it does.



### **CERTIFICATE OF SERVICE**

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Summary: Testimony Direct Testimony of Michael Richard electronically filed by Ms. Anna Sanyal on behalf of Big Plain Solar, LLC