

**In the Matter of the Application of)
Blossom Solar, LLC for a Certificate of)
Environmental Compatibility and Public)
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DIRECT TESTIMONY OF PATRICK BUCKLEY

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

2 **A.1.** My name is Patrick Buckley. I am a Vice President, Development, at Open Road
3 Renewables, LLC (“Open Road”), 1105 Navasota St., Austin, Texas 78702. Blossom
4 Solar, LLC (the “Applicant” or “Blossom Solar”) is owned by Radiant Planet Renewable
5 Energy, LLC, which in turn is a joint venture partnership between Eolian, L.P. and Open
6 Road Energy, LLC, an affiliate of Open Road. I am the project lead for the Blossom Solar
7 Project (“Project”).

8 **Q.2. What are your duties as Vice President, Development?**

9 **A.2.** I oversee and manage all facets of project planning, community engagement, and
10 development for a number of projects that Open Road is developing in Ohio. I also oversee
11 the permitting process for these projects, including the production of the various studies
12 required by the Ohio Power Siting Board (“Board”) for a certificate of environmental
13 compatibility and public need (“Certificate”).

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

5 **A.3.** I graduated from the University of Texas at Austin in 2003 with a Bachelor of Arts
6 in Hispanic Studies and received a Master of Business Administration from the
7 Thunderbird School of Global Management in 2010. I have been working directly in the

1 energy industry since 2006. I worked for Pioneer Green Energy from 2010 to 2017 where
2 I managed the development of several wind and solar energy generation projects in several
3 states, including California, Texas and Alabama. I have been working at Open Road since
4 2017 where I have led development on several utility-scale solar projects in Virginia and
5 Ohio. In total, I have either supported or led the development of renewable energy projects
6 with a combined generation capacity of more than a gigawatt that are operational, under
7 construction or soon to begin construction.

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

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

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

11 **A.5.** First, I would like to provide background information concerning the Application
12 and Exhibits filed on May 27, 2022 (Company Exhibits 1 and 1C). Second, I will
13 summarize the major items in the Application and sponsor its admission into evidence
14 along with the Exhibits, certificates of service, proofs of publication, and other letters
15 required by the Board's rules.

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

17 **A.6.** The Applicant is proposing to build an up to 144 MW solar-powered generating
18 facility in Washington Township in Morrow County, Ohio. The Project will be located on
19 approximately 1,073 acres of private land. The Project will consist of the fenceline,
20 photovoltaic ("PV") panel arrays, electrical collection lines, inverters, access roads, a
21 substation, pyranometers, a data control structure, and laydown yards. The Project will
22 deliver power to a single point of interconnection ("POI") at the existing 138 kV Galion
23 Substation, which is owned by American Transmission Systems, Incorporated. A 138 kV

transmission line (“gen-tie”) will connect the Project substation to the Galion Substation. The gen-tie line will be part of a separate application soon to be submitted to the Board.

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

A.7. The general purpose of the Project is to produce and deliver clean, renewable electricity to the Ohio bulk power transmission system to serve the needs of central Ohio consumers. The electricity generated by the Project will be delivered to the transmission grid managed by PJM Interconnection, LLC (“PJM”) for sale into the wholesale electric market.

Q.8. Would you describe the Project Area, proposed Project, and the power generation potential of the solar facility?

A.8. The Project is located on approximately 1,073 acres of privately owned land secured by lease, purchase option, and easement agreements in the Project Area, as described further in the Application. The predominant land use in the Project Area is agriculture. Consequently, the Project will primarily be located on previously disturbed land that has been mostly cleared for agriculture. The land included in the Project Area will easily accommodate the installation of PV panels.

The Project Area is rural, which is compatible with the proposed Project. The Project Area has adequate open space available to avoid impacts to sensitive ecological resources. It also contains minimal cultural resources as identified and evaluated through comprehensive field investigations.

The Project will generate electricity using approximately 250,000 to 560,000 of crystalline or thin-film PV panels. The panels will be secured on a single axis tracker racking system installed in linear arrays. The racking system may include a stowing feature.

1 The rows will run in a north-south direction and be equipped with electric motors that very
2 slowly rotate the panels so that they track the sun throughout the day. The panels will face
3 east at sunrise, rotate to the west during the day, and then re-set to the east once the sun has
4 gone down. At the beginning and ending of each day, the low end of the solar panels will
5 be about 1 to 3 feet, and the high end of the solar panels will be about 8 to 14 feet, above
6 the ground. The high end of the solar panels will be less than 15 feet above the ground at
7 all times during normal operations except when temporarily stowed in a vertical position,
8 for example to perform inspections, maintenance and repair, or to manage vegetation below
9 the PV arrays.

10 Although specific vendors for the PV panels and racking systems have not yet been
11 selected, the manufacturer's specifications for representative equipment have been
12 submitted as Exhibit B to the Application ("Representative Component Models"). The
13 Project will operate 8,760 hours per year, although it will produce no electricity at night.
14 Depending on the choice of models for racking and solar panels, the Project's annual net
15 capacity factor is expected to be 25% to 28%, which means that the Project would generate
16 315,360 to 353,203 megawatt-hours of electricity annually, with an expected 0.5% annual
17 decline.

18 **Q.9. Were you involved in the preparation of the Application and Exhibits, and responses**
19 **to Board Staff Data Requests?**

20 **A.9.** Yes, I was directly involved. The Application and Exhibits (Company Exhibits 1
21 and 1C), as well as all of the Responses to the Board Staff's Data Requests (Company
22 Exhibit 5), were prepared under my direction. A Notice of Footprint Modification

(Company Exhibit 2) was filed on August 5, 2022. This was also prepared under my direction.

Q.10. Were copies of the accepted Application served on local public officials and libraries in accordance with Ohio Adm.Code 4906-3-07(A)?

A.10. Yes, I directed that such service take place on August 9, 2022, and I am sponsoring Company Exhibit 3, which is the proof of service of the Application.

Q.11. Did the Applicant send letters to property owners and tenants within the Project Area or contiguous to the Project Area as required under the Board's application process?

A.11. Yes, pursuant to Ohio Adm.Code 4906-3-03(B), I directed that a letter be sent to certain property owners on March 16, 2022, which announced the public informational meeting on April 6, 2022. Additional letters were mailed on September 1, 2022, pursuant to Ohio Adm.Code 4906-3-09(A)(1), and on November 2, 2022, pursuant to Ohio Adm.Code 4906-03-09(A)(2). See Company Exhibit 4, which I am sponsoring.

Q.12. Did the Applicant cause notice of the public informational meeting, the Application, and the hearing dates to be published in local newspapers?

A.12. Yes, notices were published in the Morrow County Sentinel, a newspaper of general circulation in Morrow County, Ohio, for the public informational meeting, the Application, and the public and evidentiary hearings. Company Exhibit 4 consists of the various proofs of notice and publication completed by the Applicant and filed with the Board.

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

1 **A.13.** Yes. The Applicant worked with Burns & McDonnell, acting as lead consultant on
2 the Application, to coordinate the majority of the studies used to generate the Application
3 and associated Exhibits. Dr. Shawn Rohlin and Dr. Amanda Weinstein from Kent State
4 University and the University of Akron, respectively, prepared a Socioeconomic Report
5 for the Project, which was submitted as Exhibit F to the Application. John Woods, from
6 MKSK Studios (“MKSK”), prepared the Preliminary Landscaping Plan for the Project
7 (Exhibit Z to the Application).

8 **Q.14. Do you believe that the proposed Project will have a positive impact on the local**
9 **community?**

10 **A.14.** Yes. Based on economic modeling performed for the Project, the Project will create
11 an estimated 583 construction jobs in the state. Of those, 296 will be directly involved in
12 the construction phase of the Project, and 111 full and part-time jobs will be created in
13 supply chain businesses. Those direct and indirect jobs will induce 176 new jobs in Ohio.
14 Total earnings from the construction phase of the Project are estimated to be over \$38
15 million, with the average yearly wage for direct, indirect, and induced jobs being \$74,802,
16 \$68,864, and \$49,670, respectively.

17 The operations phase of the Project will provide an annual estimated total wage of
18 \$169,910 on average for the 6 employees who will be directly maintaining the facility.
19 Indirect annual spending from this Project is estimated to be almost \$3.6 million, adding
20 \$1.8 million of value to Ohio’s economy. About 9 new jobs will be indirectly created or
21 supported from the Project, with total yearly wages equaling \$777,002. Of the \$12 million
22 in spending from the Project, \$1.6 million is induced, creating a value of \$950,092 for the
23 economy. Induced employment will result in approximately 10 additional workers, and an

1 additional total annual wage of \$518,049. Total yearly income sums to \$2.3 million for 25
2 workers.

3 Along with the creation of these jobs, the community will benefit from tax payments from
4 the Project. The Morrow County Commissioners voted unanimously to pass a resolution
5 in February 2022 in favor of the Applicant's application for the Project to be a qualified
6 energy project requiring annual service payments in lieu of tax ("PILOT"), pursuant to
7 R.C. 5727.75. Pursuant to the PILOT, Morrow County will receive a fixed amount, \$7,000
8 per MW of installed capacity, or \$1,008,000, each year of operation that will be distributed
9 to Washington Township and other county taxing jurisdictions. Another \$2,000 per MW
10 of installed capacity, or \$288,000, will be deposited every year to Morrow County's
11 general fund (totaling \$1,296,000 from the PILOT program annually and more than \$51
12 million over 40 years). The Project is expected to achieve commercial operations by the
13 end of 2025 and have a lifespan of up to 40 years.

14 **Q.15. Has the Project been designed to achieve minimum impacts?**

15 **A.15.** Yes. The Applicant has been working with landowners, elected representatives,
16 and community members to refine the Project's layout. Those interactions have been
17 constructive. We have designed the Project to minimize the potential impacts of
18 construction and operation and will continue to incorporate feedback as practicable as the
19 design is finalized.

20 Temporary construction activities are expected to have typical and relatively limited
21 impacts given their intermittent nature, time of day restrictions, and use of best
22 management practices. Increased traffic during construction will be managed and will
23 cease when the Project is operational. The Applicant will obtain all required permits and

1 authorizations including, for example, Nationwide Permits from the U.S. Army Corps of
2 Engineers, if required. Any requirements for roadway monitoring, temporary repairs, and
3 post-construction improvements will be coordinated with the County Engineer.

4 As identified earlier, the Applicant also engaged Burns & McDonnell to study the potential
5 environmental, ecological, cultural, and visual impacts of the Project. Those studies are
6 attached to the Application as exhibits. Additionally, Brooke Harrison (Burns &
7 McDonnell), Mark Bonifas (Verdantas), and John Woods (MKSK) will explain in their
8 separate testimony that impacts from the Project are expected to be minimal.

9 The Project has been sited to minimize adverse impacts because virtually all the Project
10 Area is already disturbed annually by farming. Clearing of woody vegetation has been
11 minimized by careful layout and design and the Project has been sited on primarily
12 agricultural land. The Applicant will avoid adverse impacts to threatened or endangered
13 species, including the Indiana bat, the northern long-eared bat, the little brown bat, and the
14 tricolored bat by performing tree removal between October 1 to March 31. Similarly, no
15 in-water work will occur in perennial streams from March 15 to June 30 to avoid adverse
16 impacts to protected aquatic species.

17 Minimal sound is expected to emanate from the Project due to the low-noise operating
18 nature of solar arrays and by locating inverters sufficiently far from neighboring residences.
19 Visual impacts of the Project will be mitigated by the low profile of the PV panels,
20 preservation of natural vegetative buffers, and the planting of vegetative screening across
21 the majority of the Project, particularly along public rights of way and near any neighboring
22 residences.

1 Other operational impacts will be minimal. The solar facility's operation does not generate
2 wastewater or air emissions. Minimal solid waste will require disposal. The Project will
3 generate no odor and little light. Operational activities will include routine maintenance
4 and inspection of electrical equipment, as well as controlling vegetative growth through
5 predominantly mechanical means, as detailed in our Vegetation Management Plan (Exhibit
6 C to the Application).

7 Lastly, pursuant to Condition 40, the Applicant will implement a complaint resolution
8 procedure to appropriately investigate and address any questions or complaints that may
9 arise during construction and operation of the Project.

10 **Q.16. How did the Applicant select the location for the Project?**

11 **A.16.** The Applicant chose to pursue the Project in this part of Morrow County for a
12 variety of reasons, such as the availability of manageable access to the bulk power
13 transmission system, solar resource availability, highly compatible land use, and few
14 environmentally sensitive areas. Adequate access to the existing bulk power transmission
15 system is available through the 138 kV Galion Substation. Applicant's preliminary studies
16 indicated that delivering power to the Galion Substation would be cost-effective and not
17 have any adverse effects on, or require costly upgrades to, the transmission system.

18 Once the Galion Substation was selected as the POI, the location of the Project largely was
19 determined by four siting criteria. First, most of the land needed to be relatively level,
20 cleared, and dry. Second, the land needed to be contiguous to or in close proximity to
21 other, similarly suitable parcels. Third, the Applicant wanted to minimize any impacts to
22 sensitive features such as streams, wetlands, and potential wildlife habitat. Finally,
23 community acceptance of the Project played a factor, as individual property owners made

1 their own personal decisions on whether to host the Project. These criteria were not
2 assigned particular weights; rather, each played a similar role in determining the location
3 of the Project.

4 **Q.17. Will the Project adversely impact cultural historic resources?**

5 **A.17.** No. The Applicant prepared a Phase 1A Cultural Workplan for the two-mile study
6 area around the Project Area, which is attached to the Application as Exhibit S. The Phase
7 1A Cultural Workplan included a proposed methodology for a reconnaissance survey of
8 archeological and historic/architectural resources. Applicant submitted the Phase 1A
9 Cultural Workplan to the State Historic Preservation Office (“SHPO”) for its review and
10 comment. SHPO’s comments (SHPO Concurrence with Phase 1A Cultural Workplan),
11 which included its acceptance of the proposed methodology for the surveys, are included
12 in the Application as Exhibit T.

13 Pursuant to the SHPO-reviewed methodology, Applicant conducted a Historic Resources
14 Survey for the Project, which is attached to the Application as Exhibit U. The Historic
15 Resource Survey concluded that only a single historic resource located near the Project is
16 eligible for listing on the National Register of Historic Places (“NRHP”). It also
17 determined that the Project would have no adverse effects on that resource because of
18 existing vegetative screening. The Historic Resource Survey was provided to SHPO,
19 which agreed with the report’s conclusions. SHPO’s concurrence with Historic Resources
20 Survey is attached to the Application as Exhibit V.

21 Pursuant to the SHPO-reviewed methodology, the Applicant also conducted an
22 Archeological Resources Survey for the Project, which was submitted confidentially as
23 Exhibit W to the Application. The Archeological Resource Survey concluded that two

resources in the Project Area may be eligible for listing on the NRHP, and a determination was made that the Project would avoid them. The Archeological Resources Survey was provided to SHPO, which agreed with its conclusions. SHPO's concurrence with Archeological Resources Survey is attached to the Application as Exhibit X.

Q.18. How will the Project address existing drain tile in the Project Area?

A.18. As further explained by Mr. Bonifas in his testimony, and as identified in Exhibit AA (Drain Tile Assessment) of the Application and Joint Stipulation Condition 20, the Applicant will benchmark existing conditions of surface and subsurface drainage systems prior to construction, including the location of lateral and main drainage tiling, grassed waterways, and county maintenance/repair ditches. Identified drain tile will be avoided when practicable. When it is not possible to identify drain tile locations, the next priority will be to identify any functioning damaged drain tile and promptly repair or reroute it, at Applicant's expense. However, as noted in page 81 of the Application, no repairs shall be necessary to any non-functional lateral tile, or lateral tile which has no impact on other downstream main tile systems, which are damaged during construction or operations by Applicant. A composite map of discovered and repaired drain tile systems shall be filed on the case docket once construction is complete.

Q.19. How will the Project address viewshed concerns?

A.19. It is important to recognize that the Project will have a relatively modest visual impact on the area. The Project Area is primarily agricultural and the Project will follow existing grades as practicable. The panels will reach less than 15 feet off the ground when tilted to their highest operating position. The rotation of the panels on the tracking system,

1 as they follow the path of the sun, will be too slow for observers to perceive. Thus, the
2 Project will have a relatively low visual profile.

3 The Applicant has submitted a Visual Assessment, as Exhibit Y to the Application, and a
4 Landscape Plan, as Exhibit Z to the Application. As explained in the Visual Assessment,
5 the solar panel viewshed analysis indicates that the proposed solar arrays will be screened
6 from view in approximately 90.8 percent of the five-mile-radius visual study area.
7 Visibility of significant portions of the Project is concentrated within the immediate
8 vicinity of the fenced solar panel areas and the open fields adjacent to the Project. Solar
9 panel visibility is highest within the near-foreground (up to 0.5 mile) and foreground (up
10 to 1.5 miles) distance zones. Solar panel visibility diminishes rapidly beyond 500 feet and
11 transitions from not easily detectable to nearly imperceptible to most viewers as distance
12 from the solar panels approaches and exceeds 1.0 mile. Therefore, the Project's solar
13 panels would be nearly imperceptible to most viewers beyond the foreground or about 1.5
14 miles from the Project.

15 The Project substation viewshed analysis indicates that the tallest substation structures will
16 have potential visibility from only 2.6 percent of the visual study area. However, due to
17 the narrow profile and neutral color of these components, they will blend with the
18 background and actual visibility from middle ground and background locations will be
19 diminished.

20 As explained further by Mr. Woods, the Applicant will follow the Preliminary Landscaping
21 Plan to mitigate viewshed impacts by utilizing screening to lessen the visual impact of the
22 Project. The three module types outlined in the Landscaping Plan will prioritize native
23 vegetation, along with pollinator-friendly plant species to the extent practicable, to blend

1 the Project facilities into the existing landscape, and this selection of material will aid in
2 the creation of ecological habitat. Visual screening introduces natural, vertical elements
3 that break up the horizontal lines created by PV panel arrays and perimeter fences. This
4 helps the Project facilities blend into the background vegetation rather than stand out as a
5 foreground element. The proposed mitigation in the Landscaping Plan is preliminary, and
6 the Applicant will also accommodate changes to it as a result of on-going dialogue with
7 non-participating landowners. A final Landscaping Plan will be provided to Staff prior to
8 implementation, pursuant to Condition 13.

9 **Q.20. Does the Applicant intend to develop a vegetation management plan for the Project?**

10 **A.20.** Yes. The Applicant has submitted a Preliminary Vegetation Management Plan as
11 Exhibit C to the Application. As Exhibit C to the Application explains more fully,
12 protection of vegetation will be primarily accomplished through careful planning. Most
13 Project components have been sited on agricultural land, thus reducing the amount of tree
14 clearing required. Best management practices will be employed across the site during
15 construction.

16 Following construction activities, and pursuant to Condition 31, the Project has proposed
17 to re-vegetate the temporarily disturbed areas with native vegetation. The Applicant is
18 willing to commit to a goal of i) planting a minimum of 70% of the impacted project area
19 in beneficial vegetation, utilizing ODNR's recommended plant species, or other suitable
20 species as approved by ODNR, ii) following the Ohio Solar Site Pollinator Habitat
21 Planning and Assessment Form with a minimum score of 80 points and iii) limiting routine
22 mowing during the fall and spring seasons.

23 **Q.21. Will the Project comply with applicable safety and equipment standards?**

1 **A.21.** Yes. All facility components will comply with applicable industry codes, such as
2 those issued by the Institute of Electrical and Electronics Engineers, the National Electric
3 Code, the National Electric Safety Code, and the American National Standards Institute.
4 Additionally, through Condition 38, the Applicant has committed to maintaining a
5 minimum 25-foot setback between the location of a plugged oil and gas well (API 4
6 34117235930000) and all Project infrastructure. This setback distance also mirrors R.C.
7 1563.111, which prohibits mining operations within twenty-five feet of any known oil and
8 gas well.

9 **Q.22. How will the Applicant secure the Project?**

10 **A.22.** The Project has currently proposed an agricultural-style metal fence at least six to
11 seven feet in height (with no barbed wire) for security purposes. In addition, there will be
12 controlled access gates, which will remain locked when not in use. Each solar field and
13 the Project substation will be separately fenced. All signs will be only for the purpose of
14 safety, security, or to provide contact information for the Project. The Project may include
15 minimal permanent lighting at a limited number of locations: entrances, inverters, the
16 Project substation, and the metal structure containing supervisory control and data
17 acquisition. Any lights will be designed to provide only the amount of light needed for
18 safety and security. All lights will be shielded, directed either downward or inward, and
19 motion activated to operate only when needed.

20 **Q.23. How is the Applicant planning to decommission the Project at the end of the Project's**
21 **useful life?**

22 **A.23.** As further explained by Mr. Bonifas, the Applicant has included a
23 Decommissioning Plan as Exhibit J to the Application. The plan provides for the removal

1 and sale, re-use, recycling, or proper disposal of all components of the Project, including
2 components containing rare or valuable materials.

3 **Q.24. Will there be any financial assurance requirements associated with the**
4 **decommissioning?**

5 **A.24.** Yes. As Mr. Bonifas explains in his testimony, the Applicant will provide financial
6 security so that adequate funds are available for decommissioning.

7 **Q.25. Will agricultural fields within the Project Area be suitable for farming after the**
8 **Project is decommissioned?**

9 **A.25.** Yes. The Project will have only modest impacts to the land. The PV panels and
10 racking will be installed on steel piles that will be driven into the ground to a depth of
11 around 10 feet. Inverters and pyranometers will be installed on modest-sized foundations,
12 which can be removed. The Project's substation will be installed on poured concrete and
13 aggregate material, but will not cover a large area. Access roads will be constructed of
14 aggregate material, not paved, and participating landowners may choose to retain the roads
15 for their own use following decommissioning. There will not be any long-term impacts
16 from the Project that would preclude its use for farming after the useful life of the Project.
17 In addition, the Decommissioning Plan, which is attached as Exhibit J to the Application,
18 indicates that the goal is to restore the Project Area to agriculture use, unless other
19 economical land uses are desired by the relevant landowner, at the end of the Project's
20 operational life. Restoration will include a return to the same or functionally similar

1 preconstruction drainage patterns, including farm drainage tiles, decompaction of soil, and
2 seeding, when appropriate.

3 Finally, Condition 21 will ensure that the Project Area remains suitable for farming after
4 decommissioning of the Project. First, Condition 21 directs the Applicant to collect
5 baseline data establishing pre-construction soil conditions for the production of row crops
6 for the agricultural areas within the Project Area. After equipment is removed as part of
7 decommissioning, soil conditions will be determined for the same sampling locations using
8 the same parameters. The Applicant will conduct soil restoration activities to return soil
9 conditions to at least baseline conditions. Second, as explained further below, grading will
10 be limited to 20 percent of the agricultural lands within the Project Area. And third, the
11 condition requires the Applicant to follow various best management practices, including
12 but not limited to stockpiling topsoil during construction activities; preservation of grassed
13 waterways; and utilization of established access roads and laydown areas instead of
14 agricultural land, as possible, during construction.

15 **Q.26. Will construction of the Project result in intrusive amounts of traffic and dust?**

16 **A.26.** No. The amount of dust generated will be relatively low for the Project's acreage.
17 Given the moderate topography of the Project Area, grading and other earth-moving
18 activities will be limited. As with other construction activities, dust emissions will be
19 localized to the area of activity and temporary. Best management practices in the
20 construction industry will be used to minimize the amount of dust created by construction.
21 Additionally, as detailed in Mr. Bonifas's testimony, traffic resulting from construction of
22 the Project will be managed and minimized.

23 **Q.27. Will the Project generate excessive noise during construction?**

1 **A.27.** No. Although a certain amount of unavoidable, short-term noise will be generated
2 during the Project's construction, Condition 18 of the Joint Stipulation provides for
3 mitigation of construction noise. Through this condition, the Applicant is committing to
4 limit construction activities to between 7:00 a.m. and 7:00 p.m., or until dusk when sunset
5 occurs after 7:00 p.m. and limit pile driving activities to between 9:00 a.m. and 6:00 p.m.
6 (unless the noise impact at non-participating receptors is not greater than the daytime
7 average ambient Leq plus 10 dBA)

8 **Q.28. Please describe the ambient noise survey conducted for the Project and the results of**
9 **that survey.**

10 **A.28.** Burns & McDonnell carried out a noise assessment for the Project to assess the
11 Project's sound emissions to the surrounding community, which was submitted as Exhibit
12 L to the Application filed on May 27, 2022. Although the Board does not impose numerical
13 standards for operational noise for solar projects, it has referenced a standard of 5 dBA
14 over the average ambient Leq for wind powered electric generation projects. For this
15 project, a similar procedure was utilized; that is, the design threshold is the measured
16 average ambient Leq sound level plus 5 dBA at any nearby non-participating noise
17 sensitive receptors. The study included both a field survey to measure the existing ambient
18 sound levels, and acoustic modeling to predict the operational sound produced by the
19 Project and any increase over the ambient conditions.

20 The ambient noise survey was conducted with sound monitoring equipment placed at four
21 long-term monitoring locations (labeled LT1 to LT4, as shown in the Figure A-1 of
22 Appendix A of Exhibit L) within the Project Area to capture sound levels representative of
23 the general area and allow for a valid comparison to the predicted sound levels from the

1 Project's noise-producing equipment. Local traffic noise and distant highway traffic noise
2 was audible to an extent at each location. LT1, LT2, and LT4 are located along rural
3 roadways, and LT3 is located just off Highway 309. Highway 309 is one of the loudest
4 noise sources observed in the Project Area. The locations were selected to be
5 representative of residences throughout the Project Area, in locations that were accessible.
6 The modeling layout figure, Figure A-2 of Appendix A in the sound report, shows the
7 locations of the major noise emitting equipment included in the Project. The ambient sound
8 level was measured continuously from June 23 to 28, 2021 at one-hour intervals. The
9 measured average ambient daytime Leq at Locations 1, 2, 3, and 4 were 49 dBA, 53 dBA,
10 63 dBA, and 57 dBA, respectively.

11 As explained in Exhibit L, to predict the operational noise of the Project, Burns &
12 McDonnell developed an acoustic model using the industry-accepted sound modeling
13 software Computer Aided Noise Abatement (CadnaA), version 2021. This software is a
14 scaled, three-dimensional program, which considers air absorption, terrain, ground
15 absorption, and reflections and shielding for each piece of noise emitting equipment and
16 predicts sound pressure levels. The model calculates sound propagation based on
17 International Organization of Standardization (ISO) 9613-2:1996, General Method of
18 Calculation.

19 The noise-producing equipment at the Project used for the modeling included inverters
20 (qty. 40), medium-voltage transformers (qty. 40), and a substation transformer (qty. 1).
21 The Project layout used for the modeling included inverters located at least 500 feet from
22 non-participating residences. Noise levels were calculated at 489 non-participating
23 residences in the surrounding neighborhoods within 1 mile of the Project. For each non-

1 participating residence, a representative ambient noise level based on the nearest
2 monitoring location was assigned.

3 As further explained in Exhibit L, the noise modeling indicates that Project sound sources
4 will not increase daytime sound levels at each of the 489 non-participating residences by
5 more than the design goal of 5 dBA over the existing measured daytime Leq. The existing
6 ambient level assigned to each non-participating residence and any increase to the ambient
7 level as a result of the Project's operation is identified in Appendix C ("Model Sound Level
8 Results") to Exhibit L.

9 During nighttime hours, when the sun is no longer shining and the Project is not generating
10 electricity, sound levels would typically be significantly less than those shown in the
11 figures in Appendix A and the tables in Appendix C of Exhibit L. There may be some
12 trace amounts of noise generated from the medium voltage transformers, as they would
13 remain energized even when the Project is not generating power. However, the very small
14 amount of noise generated by these sources would quickly dissipate as one moves farther
15 from the source and would be far less than the noise generated during power-generating,
16 daytime hours. The substation transformer would also remain energized during nighttime
17 hours, but sound levels would be less than those emitted during power generation.

18 **Q.29. Can noise from inverters be mitigated?**

19 **A.29.** Yes, from my understanding, while additional mitigation measures are not required
20 to meet the design goal in this case, if any noise related issues arise during operations, there
21 are practical and cost-effective means to reduce noise from inverters and transformers, such
22 as sound walls or acoustically treated vent hoods installed on the inverter openings.
23 Moreover, Condition 19 ensures that the Project will not emit sound levels greater than the

1 daytime ambient Leq sound level limit level plus five dBA to the non-participating
2 residences identified as receivers in Exhibit L, Appendix C. And, the above mitigation
3 measures can be implemented in the event an operational noise issue develops, which the
4 Applicant has committed to implement pursuant to Condition 19.

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

7 **A.30.** No. The Applicant is not aware of any research conducted to date that indicates
8 utility-scale solar generation facilities interfere with communication systems. PV panel
9 arrays generate only very weak electromagnetic fields (“EMFs”) during the day that
10 dissipate at short distances. Specifically, PV panel arrays generate EMFs in the same
11 extremely low frequency range as electrical appliances and wiring found in most homes
12 and buildings. In addition, the solar arrays are generally low-lying structures that would
13 not create physical barriers to signals. Accordingly, the Applicant does not anticipate that
14 the Project will interference with radio or television reception.

15 **Q.31. Has Blossom Solar minimized any potential risk of hazardous or toxic substances**
16 **being released into the environment because of the construction, operation, and**
17 **decommissioning of the Project?**

18 **A.31.** Yes. The EPA-approved method for determining whether a hazardous substance is
19 likely to leach into the ground and ground water is the Toxicity Characteristic Leaching
20 Procedure (“TCLP”). The panel manufacturers being considered by the Applicant
21 complete TCLP testing as part of the product development process and have determined
22 that all existing products passed TCLP testing, or in other words, are not toxic to the
23 environment. Additionally, pursuant to Condition 24, the Applicant will only utilize panels

1 that have completed TCLP testing or an equivalent test (if the TCLP is replaced in the
2 future).

3 As the PV solar panels reach the end of their lifespan, the Decommissioning Plan will
4 account for dismantling and removal of panels from the Project area. Components from
5 PV panels can be recycled for use in future photovoltaic units. Non-recyclable components
6 will be disposed of accordingly. Further, pursuant to Condition 23, any retired panel that
7 is not recycled and that is marked for disposal shall be sent to an engineered landfill with
8 various barriers and methods designed to prevent the leaching of materials into soils and
9 groundwater.

10 **Q.32. Will the Applicant be sponsoring witnesses to support the Application in addition to**
11 **your testimony?**

12 **A.32.** In addition to my testimony, the Applicant will present testimony by Brooke
13 Harrison from Burns & McDonnell; Mark Bonifas from Verdantas; and John Woods from
14 MKSK, regarding various aspects of the Application.

15 **Q.33. Have you reviewed the eight criteria an Applicant must meet in order to obtain a**
16 **certificate for a major utility facility pursuant to R.C. 4906.10?**

17 **A.33.** Yes, I have reviewed this statute and as the Application demonstrates, the Applicant
18 has met each of these criteria. I will discuss all eight further below.

19 R.C. 4906.10(A)(1)

20 This criterion is inapplicable to this Project because the Project is not an electric
21 transmission line or gas pipeline.

22 R.C. 4906.10(A)(2) (nature of probable impact) and (A)(3) (minimum adverse impact)

1 As I have noted throughout my testimony, although the Project will alter the existing
2 landscape through the introduction of low-profile solar panels, the Applicant has sited the
3 Project to achieve minimum impacts to the Project Area and its neighbors. These will be
4 accomplished through, but not limited to: coordination with environmental protection
5 agencies; limiting the duration of construction activities; siting the Project on agricultural
6 land, which has already been disturbed seasonally and thereby provides minimal habitat
7 for wildlife and vegetation; and minimizing visual impacts of the Project preserving natural
8 vegetative buffers and introducing vegetative screening in select locations. These efforts
9 have been identified throughout the Application and are also explained further by the
10 Applicant's supporting witnesses. Further, the Joint Stipulation conditions will further
11 minimize environmental impact to the extent practicable. As a result, the Board should
12 find that the Applicant meets these two criteria.

13 R.C. 4906.10(A)(4) (regional plans for expansion of the electric grid)

14 In order to interconnect new generation facilities to the electric transmission grid, a project
15 owner must receive approval from PJM, the regional transmission organization that
16 coordinates the movement of wholesale electricity in all of Ohio and all or parts of
17 surrounding states. For the Project, this process includes completion of three studies in
18 series (the Feasibility Study, the System Impact Study, and the Facilities Study). The
19 Board requires submission of the Feasibility Study and System Impact Study. Based on
20 the PJM reports issued to date and Board Staff, in its Staff Report, concluded that the
21 Project can be constructed and operated at 144 MW without interference with or requiring
22 costly upgrades to the regional transmission system.

23 R.C. 4906.10(A)(5) (compliance with air, water, solid waste, and aviation laws)

1 Air pollution controls are not applicable to the Project because, as a renewable energy
2 project, the Project will not generate air pollution. As further explained by Brooke
3 Harrison in her testimony and as directed by recommended Condition 28, the Applicant
4 will mitigate any potential water quality impacts by following the Ohio EPA's guidance
5 on post-construction stormwater controls and obtaining applicable permits, such as a
6 Nationwide Permit from the U.S. Army Corps of Engineers, if required.

7 The Project is expected to generate minimal solid waste and, as noted in the Application,
8 any waste generated from construction or operation of the Project will be handled,
9 managed, and disposed of in accordance with applicable law. Materials will be recycled
10 when practicable, and the remainder of the solid waste will be disposed of at a licensed
11 landfill, or as required by law.

12 Finally, there are no public use airports, public use helicopter pads or public use landing
13 strips within 5 miles of the Project Area. The closest airport is located approximately 5.5
14 miles from the northeastern corner of the Project. There are no private use landing strips
15 or property used for aviation within or adjacent to the Project Area. Overall, the Applicant
16 meets this criterion because of its adherence to applicable air, water, solid waste, and
17 aviation laws.

18 R.C. 4906.10(A)(6) (public interest convenience and necessity)

19 The Applicant is committed to maintaining open lines of communication with the
20 interested public with regard to any issues. Moreover, as noted in my response to Question
21 14, the Project will create many construction and permanent jobs, which will have a
22 positive impact on economic output in Morrow County. The community will also benefit
23 from PILOT-related payments from the Project. As I indicated above, the Applicant is

1 projecting that local taxing districts would receive disbursements totaling over \$51 million
2 over 40 years over the lifespan of the Project. Furthermore, due to the accelerating pace of
3 coal retirements, replacement energy resources, such as solar projects, are especially
4 critical to maintain grid reliability. Finally, local governmental officials are supportive of
5 the Project. In addition to approving the PILOT for the Project, the Morrow County
6 Commissioners have separately expressed support for the Project (public comment filed
7 on September 13, 2022). The Northmor Local School District has also expressed support
8 for the Project (public comment filed on August 23, 2022). During the public hearing on
9 November 15, 2022, the Morrow County Recorder spoke in support of the Project, noting
10 that the Applicant “went way beyond the call” and has been “involved and present” in the
11 community. Consequently, the Board should find that the Project is in the public interest
12 and will not have a negative impact on the local community.

13 R.C. 4906.10(A) (7) (agricultural land in agricultural districts)

14 The Project will occupy up to approximately 1,073 acres of agricultural land, of which only
15 160 acres is in Morrow County’s agricultural district, taking it out of use for the life of the
16 Project, allowing the land to rest and restore nutrients to the soil. As noted in the
17 Applicant’s Decommissioning Plan, Exhibit J to the Application, once the Project has
18 reached the end of its useful life, Project components will be removed, and the underlying
19 Project Area will be restored for potential agricultural use. Additionally, during
20 construction and operation of the Project, the Applicant is committed to maintaining
21 communication with local officials and landowners to identify and map known drain tiles
22 and promptly address any damaged drain tile which is causing issues, pursuant to its Drain
23 Tile Assessment, Exhibit AA to the Application. Moreover, recommended Condition 20

1 in the Joint Stipulation also memorializes these commitments. Finally, recommended
2 Condition 21 implements various measures to return the Project Area to agriculture,
3 including but not limited to (1) establishment of baseline conditions of the topsoil prior to
4 construction; (2) preservation of topsoil during construction; and (3) a 20% ceiling on
5 grading (as defined in the condition) during construction. Consequently, the Project
6 represents minimal impacts to the agricultural land located within the agricultural district
7 on which the Project is being sited and the land can be returned to agricultural use at the
8 end of the useful life of the Project.

9 R.C. 4906.10(A)(8) (water conservation practice)

10 As noted in the Application, construction and operation of the Project is only expected to
11 utilize a minimal amount of water. The Project incorporates maximum feasible water
12 conservation practices considering available technology because the selected generation
13 technology itself, when compared to most forms of conventional electric power generation,
14 inherently consumes very little water. PV panels do not use any process water (such as
15 water to create steam to drive electric generating turbines) or any cooling water (such as
16 water to cool processing equipment). Because water conservation is inherent in the
17 technology itself, the Project incorporates maximum feasible water conservation practices.

18 **Q.34. Have you reviewed the Joint Stipulation filed on February 3, 2022?**

19 **A.34.** Yes. I was involved in the negotiations of the Joint Stipulation, which took place
20 over months.

21 **Q.35. Does the Joint Stipulation benefit the public interest?**

22 **A.35.** Yes. The Project is a major infrastructure project and a major capital investment;
23 it will benefit the community. The Project will generate clean and quiet renewable

1 electricity and will provide “on peak” power during the high demand period of mid-day
2 and late afternoon. In addition, the Project will benefit the local economy through jobs
3 created during construction, additional new jobs to support operation, and new tax revenue.
4 The Joint Stipulation will further benefit the public interest by requiring the Project to take
5 steps and meet certain requirements during the construction and operation of the Project.
6 The Joint Stipulation requires the Applicant to provide various, periodic updates to the
7 Board Staff and maintain clear lines of communication during the construction and
8 operation of the Project. For example, the Joint Stipulation requires the Applicant to
9 submit detailed engineering drawings of the final project design for each phase of
10 construction and have preconstruction conferences (Condition 33). The Applicant must
11 submit any changes to the Project layout that are made after the submission of final
12 engineering drawings to Staff for review (Condition 36). This will ensure that any such
13 changes comply with certificate conditions. Within 60 days after the commencement of
14 commercial operations, the Applicant must submit as-built specifications for the entire
15 facility (Condition 3). Additionally, the Applicant must submit various updated plans,
16 including a glare analysis, drain tile assessment, decommissioning plan, and final
17 complaint resolution plan (Conditions 12, 20, 22, 40).

18 The Joint Stipulation is also designed to minimize impacts to the Project Area. Through
19 Condition 13 of the Joint Stipulation, the Applicant has committed to a two-pronged
20 vegetative screening approach, which will benefit landowners adjacent to the Project by
21 reducing the Project’s visual impact. First, the Applicant will substitute and/or replace any
22 failed plantings during the first five years after construction to ensure that at least 90% of
23 the vegetation screening has survived as of the five-year point. The purpose of the five-

1 year period is to allow plantings to become established. Second, the Applicant must
2 maintain vegetative screening, which will consist of various landscape modules, for the life
3 of the Project. Under this second prong, the Applicant must replace failed plantings within
4 a screening module, if necessary, to ensure the screening module remains effective at that
5 location (Condition 16). The plan also directs the Applicant to incorporate additional
6 screening to mitigate glare at certain areas identified in the Glare Study (submitted as a
7 data response to Board Staff on July 20, 2022 and as Company Exhibit 5).

8 The Joint Stipulation also protects the field tile drainage systems of landowners adjacent
9 to the Project Area because the Applicant is required to identify drainage systems prior to
10 construction and address any field tile systems damaged during construction, operation,
11 and maintenance if they affect parcels nearby to the Project Area. (Condition 20). A
12 participating landowner can agree to not have damaged field tiles only if the field tile
13 systems of adjacent parcels will remain unaffected by the non-repair (Condition 20).

14 The Applicant will adhere to seasonal cutting dates for the removal of trees to protect state
15 and/or federally protected bat species (Condition 30), unless an alternative course of action
16 is identified in consultation with the USFWS and/or ODNR as applicable. The Applicant
17 will also contact and coordinate with ODNR and USFWS if state or federal listed species
18 are encountered during construction activities. The Applicant will also take steps to
19 prevent the establishment and/or further propagation of noxious weeds when implementing
20 Condition 32.

21 Finally, the Applicant is committed to returning the Project Area to substantially preconstruction
22 conditions after decommissioning of the Project. As explained further by Mr. Bonifas,
23 pursuant to Condition 21, the Applicant Solar will account for pre-construction topsoil

1 conditions to collect data so that the land can be returned to a similar state after
2 decommissioning. Further, through Condition 21, which benefited from input from
3 personnel from the Ohio Department of Agriculture, the Applicant has committed to limit
4 grading (as defined in Condition 21) to a maximum of 20% of the agricultural lands within
5 the Project Area. Overall, the Joint Stipulation and the Application, taken as a whole,
6 ensures the Project will have the minimum adverse environmental impact and will
7 positively benefit the community. **Q.36. Does the Joint Stipulation violate any**

8 **important regulatory principle or practice?**

9 **A.36.** No, it does not.

10 **Q.37. Is the Joint Stipulation a product of serious bargaining among capable,**
11 **knowledgeable parties?**

12 **A.37.** Yes. All parties to the Joint Stipulation participated in negotiations and were
13 represented by counsel. The Joint Stipulation is a result of many meetings between the
14 parties, in which I participated, over several months. Consequently, the Joint Stipulation,
15 as a package, is the product of serious bargaining among capable knowledgeable parties.

16 **Q.38. What do you recommend that the Ohio Power Siting Board do in regard to the Joint**
17 **Stipulation?**

18 **A.38.** I recommend that the Ohio Power Siting Board adopt the Joint Stipulation,
19 including the recommended conditions, without modification, and issue a Certificate of
20 Environmental Compatibility and Public Need.

21 **Q.39. Does this conclude your direct testimony?**

22 **A.39.** Yes, it does.

CERTIFICATE OF SERVICE

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Summary: Testimony Direct Testimony of Patrick Buckley electronically filed by Ms.
Anna Sanyal on behalf of Blossom Solar, LLC