
# Special Use Permit Application

## Midway Solar

### Albemarle County, Virginia

Submitted By:

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Submitted To:

Albemarle County, Virginia

Planning and Zoning Department

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## About Sun Tribe

As Sun Tribe's provider of large-scale renewable energy solutions, Sun Tribe Development partners with landowners, local governments, and leading utilities as they move towards a cleaner energy future. With an emphasis on quality, community-focused projects, Sun Tribe Development specializes in sustainable solar solutions. Sun Tribe Development has built one of the most experienced teams in the business, with over 20 gigawatts of collective renewable energy experience.

## Project Proposal

This application for special use is submitted to Albemarle County (the "County") by Midway Solar, LLC, (the "Applicant"), a wholly owned subsidiary of Sun Tribe Development ("Sun Tribe"), to construct an eight megawatt photovoltaic ("PV") solar energy system and four megawatt battery energy storage system ("BESS") on Parcel 08500-00-00-017B0 in the Samuel Miller District of Albemarle County (the "Midway Solar Project" or the "Project"). The project company is party to a Power Purchase Agreement with Central Virginia Electric Cooperative ("CVEC") and will produce energy that will be purchased by CVEC for delivery to their members for at least two decades. Serving almost 37,000 accounts, Central Virginia Electric Cooperative is a member-owned, not-for-profit electric utility headquartered in Colleen, Virginia.

The Project is located on Parcel 08500-00-00-017B0 ("Project Parcel"), off of Craigs Store Road approximately 1.8 miles from the community of Batesville, Virginia. The Project Parcel is owned by CVEC and a Lease Agreement has been established to allow the Applicant to develop and construct an 8 MW solar array and a 4 MW battery storage system. The Lease Agreement applies to the entire 136 acres of the Project Parcel, but the solar and battery facility will not utilize the entire property and therefore will establish a Project Site within the Parcel that in turn reserves a substantial area for preservation. See Appendix A for Conceptual Layouts depicting existing and proposed site features.

The Project Parcel is currently zoned Rural Area ("RA") and taxed as Agricultural Land Use. It is, and has historically been, utilized for livestock grazing and siviculture. There are multiple vacant farm-use buildings on the Project Parcel that are in disrepair. Any structure within the Project Site will be removed but those that are located outside the Project Site will remain. The parcel totals 136 acres and is approximately 30% cultivated timber and 70% pastures.

The Project Site is located in the Upper Mechums River Watershed within the larger South Fork Rivanna Reservoir Watershed. Although the site will remove existing vegetation and replace it with a different mix of panels and vegetation, the project's unique use does not impact water quality as a traditional impervious development would, due to limited site access and low potential for pollutant runoff.

A solar energy facility such as Midway will provide an increase in direct, indirect, and induced revenue to Albemarle County. The County will also achieve a significant increase in tax revenue from the Project site through the permitting and operation of the facility while requiring minimal to no use of County services such as water, wastewater, schools, and other infrastructure. Although it is acknowledged that emergency services may be engaged (See Appendix J) for reviewing

documentation from the battery storage manufacturer to guide in developing an Emergency Management Plan. The Applicant intends to conduct a work session with the appropriate emergency services personnel to develop a permanent Emergency Management Plan for the facility that blends local knowledge with specific technical information provided by the manufacturers of the facility components.

The project will be constructed and operated in accordance with all applicable Federal, State, and Local building codes and regulations.

## Rural Zoning Designation

The Project Site, Parcel 08500-00-00-017B0, is zoned Rural Area ("RA"). The Albemarle County Code of Ordinance, Chapter 18, Sec. 10, allows for solar energy systems in RA Zoning by Special Use Permit. The intent of the RA Zoning is the preservation of agricultural and forestal land activities, water supply protection, limited-service delivery to the rural areas, and conservation of natural, scenic, and historic resources. The Midway project aligns with all these intents.

The Project Site will only utilize approximately 80 acres of the parcel's 136 acres. The parcel acreage outside the Project Site will be kept in its current condition, with forested vegetation being preserved.

Construction of Midway Solar ensures that the 136-acre parcel remains protected from intensive development. At the end of the project's life, the site will be returned to its current condition.

## Consistency with Comprehensive Plan

Rural Areas

Objective 2: *Protect and preserve natural resources, which include mountains, hills, valleys, rivers, streams, groundwater, and continuous and unfragmented land for agriculture, forestry, biodiversity, and natural resource protection.*

For the life of the facility (25 years), the Project Site will be protected from further development. Forested areas will be left in place where possible. Areas outside of the fenced project area will remain available for grazing, wildlife corridors and habitat. After construction and for the life of the facility, site visits by operation and maintenance personnel will be limited to an average of twice a month, allowing the site to remain much as it is today, a natural landscape. Onsite streams and their riparian buffers will be protected.

Objective 3: *Protect the County's historic, archeological, and cultural resources.*

The Project will ensure there is no impact to historic, archaeological, and cultural resources that are present on the Project Site. The Applicant has already conducted desktop reviews to understand potential resources that may be present onsite.

## Natural Resources

Recognizing that natural resources are one of the area's most valued features, in the 2015 Comprehensive Plan the County identified certain objectives regarding the protection of natural resources within the county. The following is a list of some of those objectives and a narrative on how Midway Solar meets the spirit of those objectives.

*Objective 1: Ensure clean and abundant water resources for public health, business, healthy ecosystems, and personal enjoyment by preventing shortages and contamination."*

*Strategy 1a: Continue to apply the Watershed Protection Ordinance throughout the County to help protect and preserve water resources.*

The Applicant is dedicated to ensuring that Midway Solar will have no negative impact on water resources on or surrounding the Project Site during construction or once operational. All applicable sections of Chapter 17, Water Protection, of the Zoning Ordinance will be followed to the highest degree.

The operation of a solar facility requires no water use. Therefore, Midway Solar will not put any pressure on precious drinking water resources and associated infrastructure. Unlike traditional development, a solar facility has a very low probability of producing pollutant run-off which could endanger groundwater, streams, creeks, and rivers. The components of a solar generating facility do not require oil-based lubricants which are oftentimes the sources of pollutant discharge.

The land disturbance required for construction of a solar facility is far less than most other types of development, such as residential development. Care was taken to design the Project Site so that solar panels and equipment will be placed in areas that will require the least land disturbance. Where land disturbance will occur, grading will be thoughtfully planned to ensure stormwater is responsibly managed to protect downstream resources according to County and State guidance.

*Objective 2: Protect air quality.*

*Strategy 2a: Help protect local and regional air quality by reducing the County's carbon footprint…"*

Once operational, Midway Solar will provide 8MW of solar energy and 4MW of battery storage. This carbon-free, renewable energy will power 2,600 Central Virginia Electric Cooperative households in Albemarle County.

*Objective 4: Protect the biological diversity and ecological integrity of the County in both the Rural Area and Development Areas.*

*Strategy 4e: Encourage the use of native plants in landscaping to protect and provide habitat for native biodiversity, to save water, and to connect landowners to the local ecosystem.*

The use of native plantings for buffering and erosion and sediment control at Midway Solar will serve to increase the biodiversity of the site. Research shows that pine stands planted at a lower density (300 trees per acre) significantly increase the quality of wildlife habitat. The pine stands on the Project Site exceeds this recommended density, reducing species diversity by preventing germination of hardwoods. This lack of tree diversity reduces food and coverage for wildlife, therefore also negatively impacting wildlife diversity.

*Objective 5:* *Retain mountain resources.*

*Strategy 5b: Continue to protect critical slopes in Rural Area*

The Midway Solar facility aligns with the intention of Objective 5 of the Natural Resources section of the Comprehensive Plan, as development will largely avoid slopes of 25% or greater and solar panels will be placed on the least slope areas of the Project Site.

## Public Need and Benefit

### Direct Revenue to the County

Albemarle County will benefit directly from the project in the form of increased tax revenue, both from real property tax and from personal property taxation.

Currently, the parcel where the Midway Project will be located contributes just under $500 annually to the Albemarle County tax base. This is in the form of real property tax. After construction of the solar project, we anticipate this real property taxation to increase due to increased value placed on the project site as well as rollback taxes due when the parcel is removed from its current land use designation.

In addition to taxes on real property, personal property tax will provide additional revenue for Albemarle County. Solar projects in Virginia can be assessed for Personal Property Taxation in one of two ways, dependent on the County's choosing:

1) Machine and Tools (M&T) Tax Stepdown – this begins as an 80% abatement for Personal Property Taxes in years 1-5. It steps down to 70% in years 6-10, and 60% after year 10. Utilizing this taxation methodology would represent more than $12,000 in Personal Property Tax revenue for Albemarle County in year 1 of operations, and more than $380,000 over the life of the project.
2) Energy Revenue Share – this is a straightforward taxation methodology which requires $1,400/MWac/year in Personal Property Taxation. Utilizing this taxation methodology would represent $11,400 in Personal Property Tax revenue for Albemarle County in year 1 of operations, and more than $445,000 over the life of the project.

Accounting for the additional Personal Property Tax revenue associated with the construction of this project, Albemarle County could be expected to receive over $23,000 in year 1 of the project operation, and more than $960,000 over the life of the facility. In comparison to the current tax base for this parcel, which would be expected to result in approximately $20,000 over the next 25 years, this project represents an approximately 48 times increase in current tax revenue received from the parcel. Another consideration is the amount of public services that accompany this additional tax revenue base; while the Project will increase the tax base provided to the County from the Project Site, it will not have any significant draw on public resources such as schools, emergency services, or roads. Because of this, the benefits of the additional tax revenue are amplified by the lack of additional public costs necessary to support them.

## Economic Development

In addition to direct revenue from taxes, there are other economic benefits to consider. The largest of these is jobs directly attributable to the facility.

Because of the local nature of the Midway Solar Project, Albemarle County residents are already employed in the development of the project. Sun Tribe Development, Central Virginia Electric Cooperative, and the local environmental, engineering, and other consultants we employ establish this project as a unique contributor to the local economy in Albemarle County.

Upon reaching construction, the project would continue to support local jobs with Sun Tribe as the general contractor during the construction phase and a commitment to sourcing local sub-contractors wherever possible. From fence and lighting installers, to panel electricians, civil engineers, and construction laborers, significant local job creation during the engineering and construction of the solar facility is guaranteed.

## Climate Protection

Albemarle County's signature on the "We Are Still In" Declaration shows a commitment to the continued support of the 2015 Paris Climate Agreement.

Sun Tribe shares the County's view that local governments play an important role in addressing climate change, and as an Albemarle County business we want to join the County in assuming a leadership role.

To meet the County's (and Commonwealth) carbon reduction goal, it will be necessary to accelerate the shift to clean energy through deliberate and responsible renewable energy development.

Renewable energy projects like Midway align with the County's Climate Action Plan targets:

- *"Benefit the health of the residents"*

Fossil Fuel energy facilities not only increase the greenhouse gases directly contributing to climate change but also create pollution which is known to adversely affect health. Renewable energy alternatives, such as Midway Solar, create none of the same adverse health effects.

- *"Protect the local natural environment"*

Solar facilities such as Midway will operate for 20+ years, allowing the land to be protected from more intensive development uses with the opportunity to reevaluate land use at the end of the project's life. As noted, there are also 56 acres on the Midway parcel which remain outside the Project Site.

## Quantification and Mitigation of Potential Development Impacts

### Public Infrastructure

As noted, Midway Solar will provide a tax base to Albemarle County that is not accompanied by a burden on County services such as schools, roads, or other public utilities such as water and sewer. At the conclusion of the approximately six-month construction timeline, visits to the site will be limited to approximately two times per month. Therefore, the Midway Solar project will not introduce a burden to county roads or facilities. The site will not require use of the County's water and sewer infrastructure as no permanent staff will be stationed on site. Due to the lack of permanent, on site, staff for the facility, a measurable burden to other public facilities will not occur,

### Neighboring Parcels

Fourteen parcels border the Project Parcel. Nine adjacent parcels are single-family residential; one is Conservation Use; one is Vacant Residential Land; three are designated in Agricultural Land Use.

*Table 1 Adjacent Parcels*

| Landowner | Parcel ID | Parcel Address | Tax Type |
|---|---|---|---|
| Mark & Sara Tueting | 085000-00-00-01600 | 1832 Craigs Store Road | Agricultural Land Use |
| Calvin & Ruby Canody | 085000-00-00-016A0 | 1876 Craigs Store Road | Reg. Taxable/Single Family |
| Diane Spangler | 085000-00-00-01700 | 1888 Craigs Store Road | Reg. Taxable/Single Family |
| Patti Riker | 085000-00-00-004D0 | 1913 Craigs Store Road | Reg. Taxable/Single Family |
| Frank G. Ryder Rev. Trust | 085000-00-00-00400 | No 911 Address | Vacant Residential Land |
| William Marshall, Life Estate | 085000-00-00-004C0 | 1972 Craigs Store Road | Reg. Taxable/Single Family |
| Fellows Living Trust | 085000-00-00-00300 | 1915 Thunder Ridge Road | Agricultural Land Use |
| Haupt Trust | 085000-00-00-0030A0 | 7181 Batesville Road | Conservation Use |
| Rose Zavada | 085000-00-00-0018A1 | 6925 Batesville Road | Reg. Taxable/Single Family |
| Elizabeth Williams | 085000-00-00-0018D0 | 6793 River Hill Lane | Reg. Taxable/Single Family |
| Alma Ball | 085000-00-00-0018E0 | 6809 River Hill Lane | Reg. Taxable/Single Family |
| Life Estate Betty Jean Mawyer | 085000-00-00-0018B0 | 6722 Ellydia Lane | Reg. Taxable/Single Family |
| Carolyn Graves | 085000-00-00-0018B3 | 1754 Craigs Store Road | Reg. Taxable/Single Family |
| Shelton L or Sharon A Root, III | 085000-00-00-001500 | 6755 Black Oak Ridge | Agricultural Land Use |

The Project will mitigate impacts to neighboring parcels through maximizing the use of naturally occurring vegetative screening paired with the installation and maintenance of both adequate setbacks and additional vegetative buffering as necessary.

### Visual

Recognizing the importance of conservation of scenic resources, great care was taken to design Midway Solar in a way that protects the viewshed of the neighboring properties and roadways. This is accomplished by adhering to all setback requirements, maintaining mature vegetative buffering in place where available, conducting visual simulation renderings, and supplementing vegetative buffering with additional native vegetation where appropriate.

The racking and panels which comprise the solar generating facility will not exceed the 20-feet height restriction, measured from the base of the structure to its highest point. There will be no signage on site, except for that required for safety, security or the requirements of the interconnecting utility (CVEC).

Existing slopes, mature vegetation, and supplemental vegetation will further reduce the visual impact to adjacent parcels. The applicant prepared a series of visual simulations of the viewshed of adjacent parcels and along Craigs Store Road. These simulations show the viewshed impacts of the Project when the facility is complete and vegetative buffering is in place. There will be no visual impact on any other parcels adjacent to the Project Site. These simulations, as well as a viewshed map showing elevations whereby the project may be visible further away can be seen in Appendix B.

Vegetative screening will adhere to the requirements set out in Chapter 18, Sec. 32.7.9.7, of the Zoning Ordinance and be no less than 20 feet in depth, utilizing double staggered rows of evergreen trees planted on center with a minimum planting height of 4 feet.

### Real Estate

Solar generating facilities have no impact, positive or negative, on the value of neighboring properties across the Commonwealth of Virginia. Using matched-pair analysis, a real estate impact analysis performed on the Midway Solar area shows that the project will have no impact on home values on abutting or adjoining properties and no impact on adjacent vacant residential or agricultural land. It is important to note that the analysis also determined that solar farms using fixed or tracking panels are a passive use of the land that is in keeping with the rural/residential area. The results of a real estate matched-pair analysis performed by Kirkland Appraisals can be found in Appendix C.

### Glint and Glare

Glint, momentary flashes of light, and glare, continuous source of excessive brightness, are caused when sunlight is reflected off a flat, shiny surface. While solar panels are flat and somewhat shiny, they are designed to capture light, rather than reflect it. Research shows solar panels produce less glare than standard residential window glass, snow, or concrete. Photovoltaic panels are covered in anti-reflective coating to mitigate any low levels of glare and glint.

Using the Federal Aviation Administration's Notice Criteria Tool, which takes into consideration the Project Site latitude, longitude, horizontal datum, site elevation, and structure height, it was determined that Midway Solar introduces no risk to air traffic and no further glint and glare study would be necessary. A copy of the Notice criteria Tool results can be found in Appendix D.

### Noise

An operating solar facility produces negligible noise when operating. Any noise produced by the operating facility becomes inaudible at approximately one hundred (100) feet from the noise-producing components. These noise-producing components, such as inverters, and tracker motors have few moving parts that produce decibel levels that will not be heard from adjacent properties. For example, the proposed solar inverters have a manufacturer listed noise rating of sixty-five (65) decibels at one meter away from the inverter. The CDC reports this level of noise is comparable to an air conditioner, washing machine, or dishwasher. The vast majority of inverters on the site will be set back at least three hundred (300) feet from property lines, but no inverter will be closer than one-hundred (100) feet from a property line. At one hundred (100) feet away from the inverter, the noise is reduced to approximately thirty-five (35) decibels which is comparable to the noise level of a soft whisper or refrigerator hum. The proposed battery storage inverters have a manufacturer listed noise rating of 75 decibels at three meters away from the inverter and will be located no closer than

four- hundred (400) feet from property lines. At that distance, the noise reduces to approximately forty-three (43) decibels which is comparable to a refrigerator hum. Since the facility will only operate during daylight hours, there will be no noise produced at night.

There will be a short-term increase in noise levels during construction of the facility. It is estimated construction will take six months. However, noise-producing construction activities which will occur during short increments of time throughout the construction schedule and will not be ongoing. Noise-producing construction activities will be limited to daytime hours. The Applicant wishes to be a good neighbor and will work with the County and adjacent landowners to minimize any impact construction noise may have on the surrounding community.

Manufacturer specification sheets listing noise levels can be viewed in Appendix E.

### Lighting

The Applicant recognizes and appreciates the County's efforts to protect the county's dark skies. To that end, all lighting at Midway Solar will comply with all applicable sections of the Albemarle County Code of Ordinance (Zoning Ordinance) and will be kept to the minimum necessary to ensure the safe operation of the facility. All lighting will be designed to prevent spillover lighting and will be arranged or shielded to reflect light away from adjoining residences and roads.

### Water Resources

Midway Solar will be designed to minimize impacts to waterways onsite and downstream of the Project Site. Both water quality and quantity will be considered and protected as the facility design progresses. See Appendix A for a Conceptual Grading, Stormwater, and Erosion and Sediment Control Plan and for Conceptual Stormwater Details and Calculations. These conceptual plans depict a very early stage of project design and will be updated to include information such as topographic survey data, final equipment selection, and feedback from the County. The Applicant will continue to solicit and incorporate County Engineering feedback through the Site Plan Approval process, where the detailed stormwater and erosion and sediment control plans will be finalized.

Water resource protection is closely tied to land use and ground cover as activities upstream have an impact on the downstream environment. While the Project proposes tree clearing, it also proposes establishment of additional visual vegetative buffers and healthy vegetative cover under the proposed PV panels including native species. The establishment of healthy ground cover after the construction phase will be heavily monitored and emphasized as the first step in water quality protection, in addition to the temporary erosion and sediment control and permanent stormwater Best Management Practices (BMPs) that will be implemented in accordance with County and DEQ guidance. Vegetation in all areas outside the Project Limits of Disturbance (LOD) will be untouched and preserved.

### Hazardous Materials Statement

The Project does not pose a risk to public health due to the presence of hazardous materials. Although PV panels may contain small amounts of some potentially hazardous materials such as lead, these materials are sealed within the panel to prevent environmental exposure. Similarly, the battery energy storage system is lithium-ion based and is totally self-contained and monitored. See Appendix

F for a detailed description of panel construction, additional discussion of the negligible public health and safety impacts of solar PV projects, and safety information from the battery storage manufacturer.

## Quantificaiton of Potential Impacts on Environmental Features

### Critical Slopes

The Midway Solar Project design will not encroach on any large contiguous areas of critical slopes, as defined in Chapter 18, Article I, Section 3.1 and described in Chapter 18, Article II, Section 4.2 of the Zoning Ordinance. Care was taken to design the Project Site in a manner that follows existing site topography and avoids areas of high slope that would negatively impact downslope land or waterways if disturbed. The current design does impact two small areas of non-contiguous critical slope that are less than 100 feet in length, totaling 0.046 acres, and surrounded by areas of non-critical slope. As part of additional design and due diligence, a topographic survey is underway and data from the survey will be evaluated to understand these areas of critical slope with higher granularity. As the design progresses, these areas of impact will be reevaluated and, if necessary, the Applicant will undertake the waiver process as described in Chapter 18, Article II, Section 4.2.5.

### Wildlife

As part of the environmental due diligence performed on the Midway Solar Project Site, the Applicant engaged with the industry-expert consulting firm Timmons Group to determine the likelihood of encountering any species on the State or Federal lists of Threatened and Endangered Species. The complete Threatened and Endangered Review conducted on the Midway Solar site is available in Appendix B; below is an excerpt from that review:

*Table 2 Threatened and Endangered Species Review*

| Agency | Database |
|---|---|
| U.S. Fish and Wildlife Services | Information, Planning and Consultations System |
| Virginia Department of Game and Inland Fisheries | Virginia Fish and Wildlife Information System |
| Virginia Department of Game and Inland Fisheries | Wildlife Environmental Review Map Services |
| Virginia Department of Game and Inland Fisheries | Northern Long-eared Bat Winter Habitat and Roost Locator |
| Virginia Department of Game and Inland Fisheries | Little Brown Bat and Tri-colored Bat Winter Habitat and Roosts Locator |
| Virginia Department of Game and Inland Fisheries | Division of Natural Heritage Database |
| The Center for Conservation Biology | Virginia Eagles Nest Locator |

The comprehensive review identified the potential for the following species to be present on the Midway Solar site:

| Common Name | Scientific Name | Status | Agency Source |
|---|---|---|---|
| Northern Long-eared Bat | Myotis septentrionalis | Federal Threatened | USFWS |
| Little Brown Bat | Myotis lucifugus | State Endangered | VDWR |
| James spinymussel | Parvaspina collina | Federal Endangered; State Endangered | VDWR |

Based on the results of the desktop review, a comprehensive field habitat study was conducted on site to determine if species identified in the State and Federal databases actually had potential habitat present on the Midway Solar Project Site. The results of the comprehensive field habitat review determined:

James spinymussel: Due to excess of finer sand and silty substrate, lack of fast-flowing, well oxygenated water, and evidence of recent flooding events, it was determined that no suitable habitat exists on the Project Site to support the presence of the James River spinymussel.

Northern long-eared bat: Review of the Virginia Department of Game and Inland Fisheries Northern Long-eared Bat Winter Habitat and Roost Indicator determined there were no maternity roosts or hibernacula located within or near the Project Site. Therefore, it was determined that the Project is unlikely to have any effect on any known northern long-eared bat areas.

Little brown bat: The Wildlife Environment Review Map Services identified little brown bat hibernacula within a 5.5-mile buffer of the Project Site. However, this 5.5-mile buffer does not intersect with Project Site, and therefore there is no expected impact. There were no tri-colored bat hibernacula identified within range of the Project Site.

The Applicant will continue to coordinate with Local, State, and Federal agencies through the State-led Permit By Rule process to ensure there is no impact to local fish and wildlife species. If a potential impact is identified, the Applicant will coordinate with those applicable agencies to draft and enact plans to mitigate the impact.

The complete wildlife resource review can be viewed as Appendix G.

### Cultural and Historical Resources

Timmons Group was retained to conduct a comprehensive desktop review to determine if any known historical and archaeological resources were present on the Project Site or within a one-half-mile buffer surrounding the Site. Eight architectural resources were identified within the one-half-mile buffer, none of which were within the site boundaries. No archaeological resources were identified. One architectural resource, the Batesville Historic District, is listed on the National Register of Historic Places and Virginia Landmarks Register. The remaining resources identified have not been evaluated for listing on the National Register of Historic Places. The complete Cultural and Historical Resource study can be viewed as Appendix H.

*Table 3 Historic/Cultural Resources Identified*

| Resource ID | Site Description | Location | Site Evaluation Status |
|---|---|---|---|
| 002-0194 | Haupt House | Adjacent | Not Eligible |
| 002-1279 | Moon's Mille Site | Adjacent | Not Eligible |
| 002-1281 | Quarry Site, Route 636 | Adjacent | Not Eligible |
| 002-2212 | Batesville Historic District | Adjacent | NRHP Listing; VLR Listing |
| 002-0655 | Mt. Ed. Baptist Church | Adjacent | Not Eligible |
| 002-1278 | Kennedy Farm | Adjacent | Not Eligible |
| 002-1211 | Harold Brown House | Adjacent | Not Eligible |
| 002-0709 | Barksdale Farm | Adjacent | Not Eligible |

The Applicant has engaged a licensed archeological firm (Dutton and Associates) to conduct a Phase 1A Cultural Resource study to determine if a full Phase I Cultural Resource study will be appropriate. These Cultural Resource studies will identify any potential impact to identified historical and cultural resources. The Applicant will coordinate with the Virginia Department of Historical Resources through the Permit By Rule process to assess whether there are any impacts to off-site resources and, if an impact is identified, to develop an appropriate mitigation plan. The results of any studies will be provided to the County once complete.

### Streams and Wetlands

A wetland delineation was performed by Timmons Group to identify all streams and wetlands on the Midway Project Site. The complete delineation can be reviewed as Appendix I. A Preliminary Jurisdictional Determination was issued by the U.S. Army Corps of Engineers (USACE) confirming the locations of streams and wetlands identified by Timmons and is also included for review in Appendix I. The Project was designed to ensure there will be no impact on any identified streams or wetlands. Consistent with the Albemarle County Water Protection Ordinance, the project design incorporates a 100-foot buffer around all identified streams and wetlands. Additional buffer will be provided where possible. See the Conceptual Grading & SWM/ESC Plan on Sheet B in Appendix A for a conceptual depiction of proposed stream and wetland setbacks.

The Applicant has secured a Preliminary Jurisdictional Determination ("JD") with the U.S. Army Corps of Engineers (USACE) to confirm stream and wetland areas identified in the field delineation. The Project will not impact any delineated streams or wetlands. the Project will be developed and constructed in conformance with all applicable federal, state, and local laws and regulations, including the Chesapeake Bay Act, Clean Water Act, and VA-DEQ Stormwater Management Program Regulations.

## Facility Considerations

### Equipment Design

The Midway Solar Project is an 8 MW alternating current ("AC") photovoltaic solar electric power generation facility and includes a 4 MW battery energy storage system ("BESS").

The Project will utilize photovoltaic (PV) panels to convert the sun's energy into electricity (direct current, "DC"). The PV panels are electrically connected and mechanically mounted on racking equipment made from metal framing driven into the ground. The racks are oriented in rows along a north-south axis. These rows of panels use self-powered motors to rotate east-west following the sun's path each day facing east in the morning, horizontal midday, and west in the afternoon. This single axis tracking mechanism provides more megawatt hours (MWhs) of power production as compared to a fixed-tilt racking system using a similar footprint. Additionally, most panels used on the Project Site will be bifacial, meaning both sides of each panel are used to produce energy. This increases total energy generation and improves plant efficiency. Sun Tribe has selected both the bifacial panels and single axis tracking racking to maximize efficiency and, therefore, reduce the amount of land needed to produce 8 MWs of power.

The electricity produced by the panels is collected by wires in both aboveground and underground conduits before connecting to inverters that convert the electricity from direct current to alternating current. The inverters are then connected through additional wiring in conduit to transformers that step up the power to a higher voltage for transmission and interconnection to the existing electrical grid. Inverters and transformers will be dispersed throughout the site.

The energy storage facility includes self-contained battery enclosures, inverters, and transformers. The battery enclosure is a rectangular container that hold stacks of batteries and include fully integrated HVAC, communications, and fire suppression equipment. The container is approximately 40 feet in length, 8 feet in width, and 9.5 feet in height. The battery container is electrically connected to inverters and transformers whose purpose are described above.

All the equipment utilized for the Project will be UL listed (or equivalent) and the design will comply with the current version of the National Electric Code. Meters, safety switches, and combiner boxes will be utilized as necessary. The exact manufacturer and type of equipment and associated design is subject to change based on future availability and pricing.

### Interconnection

Interconnection of the Midway Solar facility will occur on the Central Virginia Electric Cooperative's 24.9kV distribution system via attachment facilities directly on the Midway Project Site. As such, no additional right-of-way easements will be necessary to accommodate interconnection of the facility. The attachment facilities consist of pole mounted electrical equipment including switches, reclosers, and meters. The photovoltaic array and battery storage system will share a common Point of Interconnection (POI) and associated equipment.

An interconnection request was filed with Central Virginia Electric Cooperative on August 8, 2020. It is anticipated the interconnection studies will be completed in January 2021.

### Project Site Access

Access to the Project Site will occur by a single gravel access road off Craigs Store Road. Several small accessways will be installed within the Project Site boundary to allow access to all site equipment. Minimum impact to traffic is expected during construction. Once operational, there will be no daily staff at the Project Site, and site visits are expected to be limited to approximately two times per month.

### Vegetative Buffer

Existing mature vegetation will be utilized as buffer wherever possible on the Project Site. Any needed additional vegetative screening is identified in Appendix A and will adhere to the requirements set out in Chapter 18, Sec. 32.7.9.7, of the Zoning Ordinance and be no less than 20 feet in depth, utilizing double staggered rows of evergreen trees planted on center with a minimum planting height of 4 feet and achieve 8 feet in height within 3 years. Native, non-invasive species will be utilized for all installed vegetative buffering. Vegetative buffering will be maintained throughout the life of the Project.

### Fencing and Security

All system components will be enclosed in a perimeter fencing of not-less-than 7 feet in height. When possible, non-adjacent system component areas will be fenced individually to allow for natural wildlife corridors through the Project Site. The fencing will serve to prevent unauthorized personnel from entering the Project Site and will protect the system components from damage by wildlife. A locked gate will be installed to allow for ingress and egress of authorized personnel. The security fencing will be installed interior of vegetative buffering in areas where the security fencing may impact the viewshed of neighboring properties.

Temporary fencing will be installed, as necessary for safety and security, during construction. Access will be limited to authorized personnel, including designated County officials.

### Signage

Safety and security signs will be located every 100 feet along the perimeter security fencing. Speed limit signs will be posted on Project Site interior access roads. Temporary instructional or safety signs will be posted during construction, as appropriate and necessary.

### Lighting

The Applicant recognizes and appreciates the County's efforts to protect the county's dark skies. To that end, all lighting at Midway Solar will comply with all applicable sections of the Albemarle County Code of Ordinance (Zoning Ordinance) and will be kept to the minimum illumination necessary to ensure the safe operation of the facility. All lighting will be designed to prevent spillover lighting and will be arranged or shielded to reflect light away from adjoining residences and roads.

## Facility Permitting

### Stormwater Management Plan

Recognizing and respecting the importance of protecting our clean water sources, the Applicant will coordinate with the County, as the designated program authority for the Virginia Stormwater Management Program ("VSMP"), for review and approval of Midway Solar's stormwater management plan. The Project's conceptual Stormwater Management Plan can be viewed in Appendix A.

### Erosion and Sediment Control

The Applicant places great value on the protection of Albemarle County's water and soil resources. As such, the Applicant will ensure strict compliance with all applicable erosion and sediment control laws and regulations. Management practices utilized on site will be designed specifically to prevent the discharge of sediment and other pollutants into nearby streams. The Applicant will coordinate with Albemarle County, as the designated Erosion and Sediment Control Program ("VESCP") Authority, on submittal and review of the Project's erosion and sediment control plans. The Project's conceptual Erosion and Sediment Control Plan can be seen in Appendix A.

### Local Building and Electrical

The Applicant will adhere to all County building and electrical codes. The Applicant will coordinate with the County to secure all applicable building and electrical permits prior to start of construction.

### Permit By Rule

All renewable energy generating facilities in the Commonwealth of Virginia must complete requirements set forth under the Department of Quality Permit By Rule ("PBR") process. The PBR process provides a streamlined method for cultural and environmental permitting of renewable energy projects. PBR incorporates reviews from the Department of Quality (DEQ), Department of Wildlife Resources (DWR), Department of Conservation and Recreation (DCR), and Department of Historic Resources (DHR) to identify and mitigate potential impacts a project may have to the state's cultural, historical, natural, and wildlife resources. Any identified impacts must be sufficiently mitigated to receive approval under the PBR process.

The PBR process addresses 15 major points required by DEQ for approval. These points include the completion of reviews from the DHR, DWR, and DCR, as well as assessments on air quality and interconnection. A mitigation plan and operating plan outlining how the Applicant will avoid environmental and cultural impacts are also required. A 30-day review and public comment period, inclusive of a public community meeting, must occur prior to the permit submittal.

DEQ recommends submittal of the project's Notice of Intent (NOI) to complete the PBR process after local land use approval has been secured. However, Applicant will begin initial discussions with DEQ prior to local land use approval in order to coordinate with applicable agencies and ensure compliance with all federal, state, and local laws and regulations.

The Applicant will submit a NOI for the Midway Solar project to DEQ if a Special Use Permit is secured. The Applicant will update Albemarle County staff on permit progress through the PBR process. A complete permit will be forwarded to the County once secured.

## Facility Construction

Construction of the Midway Solar project is expected to take approximately six months, beginning in early 2022, and concluding in mid-2022.

A Sun Tribe construction manager will coordinate, direct, and manage all logistical and workforce aspects of construction of the facility. It is estimated that there will be approximately 20 personnel on site daily during construction, with some construction activities requiring fewer personnel to be on site. Personnel will park only in designated areas on the Project Site during construction of the facility.

On-site construction activities fall into the following main categories:

- Civil & Environmental: Temporary erosion and sediment control Best Management Practices (BMPs), permanent stormwater management BMPs, internal site road construction, construction entrances and material laydown area
- Fence: Permanent fence surrounding Project Site

- Mechanical: Racking foundation pile driving, metal racking assembly, and solar panel installation
- Electrical: Mounting of electrical equipment, trenching, and installation of conduit and wire

Materials and equipment necessary to construct Midway Solar will be manufactured off site but will be delivered to the Project Site by truck. Trucks delivering project materials will be both staged and unloaded on the Project Site. Major materials that may be stored on site prior to installation include PV modules, inverters, racking, and spooled wire. Other materials arriving by truck for more immediate installation include fencing, conduit, concrete, reinforcing steel, wire management hardware, communication equipment, and other electrical components. A temporary gravel construction laydown and parking area is depicted on the Conceptual Grading & SWM/ESC Plan in Appendix A.

Construction will occur during daylight hours. If scheduling anomalies require construction activities to occur outside of daylight hours, the Construction Manager will ensure these activities are limited in scope and do not include activities such as delivery of materials or pile driving.

The detailed construction plan will include phasing considerations to minimize disturbed area during construction. Construction will aim to seed or mulch disturbed areas immediately upon bringing the site to grade and will ensure both temporary and permanent seeding and other stabilization requirements are met. Individual erosion control measures will not be removed until approved by a County inspector. The Project will treat drainage areas and corresponding BMPs individually and will aim to convert temporary devices to permanent in a strategic sequence to minimize potential impacts resulting from individual rain events. The Project Site is divided and drains to two different receiving channels; therefore the upstream area of disturbance is split similar to two different projects.

## Facility Operations and Maintenance

Solar generating facilities such as Midway Solar are monitored and operated remotely. The facility will be monitored 24/7 for performance and safety. Midway Solar's remote monitoring system will alert project personnel of any system fault/failure. The interconnecting utility, Central Virginia Electric Cooperative, will also have remote monitoring systems in place to notify of system fault/failure. In the event of fault or failure, operations personnel will be dispatched to the facility to take appropriate actions to restore the facility.

Ongoing maintenance of facility components will occur at intervals and using the protocols prescribed by the equipment manufacturer. All maintenance activities will adhere to NFPA 70E safety standards.

All vegetative areas in and around the Project Site will be maintained by a qualified grounds maintenance crew.

## Facility Decommissioning

At the time the Project permanently ceases to operate, the Project Owner ("the Owner") will perform decommissioning activities. The Owner will provide notification to the Zoning Administrator of the abandonment or discontinuance of the use, and complete physical removal of the project within 6 months of abandonment. Decommissioning includes the remove all equipment and materials related to the operation of a solar PV project, including:

- Removal of all racking, panels, and electrical equipment
- Removal of all cabling above 30"
- Removal of all above ground cabling
- Removal of all concrete foundations
- Removal of all internal roadways and fencing

Any existing vegetation and buffering will remain in place and disturbed areas will be covered with topsoil. All refuse and materials will be removed from the site and disposed of according to applicable laws and regulations. Where possible, materials will be recycled, salvaged, or reused. Decommissioning is designed to restore the property to its condition prior to the Project's construction.

The Applicant has developed a preliminary Decommissioning Plan. Prior to Project construction the Owner will enter into a written agreement with the County to decommission the facility in the event the Owner is not able to do so. This agreement will be developed in accordance with State regulation [15.2-2241.2]. The Projects Preliminary decommissioning plan can be viewed in Appendix K

## Attachments

**Appendix A –** Contextual Plan and Area Map

**Appendix B –** Viewshed and Visual Simulations

**Appendix C –** Real Estate Impact

**Appendix D –** FAA Notice Criteria

**Appendix E –** Manufacturer's Specification Sheets

**Appendix F –** Hazardous Materials Review

**Appendix G –** Wildlife Resource Review

**Appendix H –** Cultural/Historical Resource Review

**Appendix I –** Environmental Site Assessment and Wetland Delineation

**Appendix J –** Emergency Management Details

**Appendix K –** Decommissioning Plan

**Appendix M –** CVEC Support Letter

# Appendix A – Contextual Plan and Area Map

# Appendix B – Viewshed and Visual Simulations

# Appendix C – Real Estate Impact Analysis

# Appendix D – FAA Notice criteria

# Appendix E – Manufacturer's Specification Sheets

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# Appendix G – Wildlife Resource Review

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# Appendix M – CVEC Letter of Support