



Blackwater Solar LLC

Sussex County, Virginia –

Conditional Use Permit (CUP) Application

Prepared by Clēnera on behalf of Blackwater Solar LLC

First Submission - May 5th, 2023

Revised Submission – November 27th, 2023

Cover Letter

Beverly Walkup
Sussex County Director of Planning and Zoning
20135 Princeton Road
Sussex, VA 23884
bwalkup@sussexcountyva.gov

RE: Blackwater Solar – Sussex County CUP Application

Dear Ms. Walkup,

In response to the deficiency commentary dated June 16th, 2023, Blackwater Solar LLC is pleased to re-submit its Conditional Use Permit (CUP) application for a proposed Solar and Battery Storage Facility in Sussex County. Enclosed is an expanded written narrative description of the project, along with the following supporting documentation:

1. Concept Development Plans
 - a. Parcel Map & Site Information
 - b. Permit Design
 - i. Solar
 - ii. Battery Energy Storage System (“BESS”)
2. Landscaping Plan
3. Vegetation Management Plan
4. Draft Decommissioning Plan
5. Economic Impact Report
6. Environmental Resource Impact Assessment
7. Transport and Traffic Control Study
8. Visual Impact Analysis
9. Comprehensive Plan Mapping/Analysis
10. Proposed CUP Conditions

On behalf of Blackwater Solar LLC, thank you for your time and consideration. More than ever, we are thrilled about the opportunities the Project brings to Sussex County. If you ever have questions or comments, please feel free to contact me.

Sincerely, .



Ed Rumler
Director of Development
Project Lead – Blackwater Solar
Ed.rumler@clenera.com

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Introduction

Blackwater Solar LLC is a hybrid 600MW Solar generation and 400MW energy storage facility – referred to throughout this application as the Project, the Facility, or Blackwater. The Project’s goal is to harvest energy from sunlight to produce clean, reliable electricity.

Blackwater Solar is not the first solar project proposed in Virginia. The commonwealth is home to many eligible transmission lines, and the Virginia Clean Economy Act creates demand for solar as an energy resource. We are also aware that many of the first mover projects throughout the state have flaws. Many of those projects are highly visible with little to no screening. Others have generated top-soil runoff, damaged local water resources, damaged roads, or bypassed stakeholders to build projects without local feedback.

Blackwater Solar has solved for many of these issues, and the application that follows represents a thoughtful, sustainable development project that will be a massive economic engine for Sussex County while being mindful of our neighbors and their feedback.

First, 150 feet of existing timber will be left around the Project perimeter –half a football field of trees – to shield the project from view (see Landscaping Plan below). Second, We’ve engaged the local community and made major changes to accommodate neighbors (see Community Engagement below). Third, to protect water resources, the Project will opt into more restrictive construction standards and stormwater design requirements (see Proposed Permit Conditions). Additionally, The Project will host 500+ acres of pollinator habitat, 40+ miles of wildlife corridors, and 2,000+ acres of preserved forestry. If damaged, roads will be repaired during construction. In order to hold the Project accountable to these promises, the proposed CUP conditions include five different forms of financial security, each meant to ensure Blackwater delivers a best-in-class, forward-looking solar and storage facility.

Blackwater Solar will create a massive influx of economic activity for Sussex County via jobs, millions of dollars spent at local businesses, and over \$130,000,000 in additional tax revenue (see Economic Impact Analysis below).

The Application Narrative and supporting Exhibits that follow will expand on the points above in greater detail. Thank you to anyone who takes time to read and consider our application.

Description of Applicant

Blackwater Solar LLC is a wholly owned subsidiary of Clēnera, LLC (“Clēnera”), a subsidiary of Enlight Renewable Energy, LTD (NASDAQ: ENLT). Clēnera acquires, develops, builds, and manages utility-scale solar farms and energy storage facilities throughout the United States. Combining breakthrough technology with a deeply integrated team approach, Clēnera provides reliable, affordable energy systems and helps its utility partners become clean energy leaders in their communities. Clēnera has developed and constructed over 1.6 GWdc of solar projects and provides long-term management of those projects on behalf of third-party owners. The company is developing approximately 50 large-scale solar projects in various stages of maturity with an approximate capacity of 12 GWdc, plus 5.5 GWh of energy storage projects. Learn more at www.clenera.com.

Project Narrative

Request for Conditional Use Permit

Blackwater Solar LLC (the “Project,” the “Facility,” and “Blackwater”) seeks a Conditional Use Permit from Sussex County to build and operate a combined hybrid generation facility, which includes a 600MW Utility Scale Solar Facility and a 400MW Battery Storage Facility, both as defined in Sussex County Code, Appendix B, Zoning: Article I, Section 16-1 Definitions. The proposed project adheres to and relies upon the amended solar ordinance adopted in February 2022 as Sussex County Code, Appendix B, Zoning, Article XXIII, Solar and Battery Facilities (Section 16-401 through 16-410) and is in substantial accord with the Sussex County Comprehensive Plan related to Solar Energy Facilities.

Two of the parcels proposed for the Project are currently zoned for Planned Unit Development (PUD). To fully comply with Section 16-403 of the Sussex Solar Ordinance, a companion application has been submitted alongside this CUP application as Attachment 3 to rezone the parcels in question to A-1.

Project Highlights

Blackwater Solar will convert the sun’s energy into electricity. Some of this electricity will be immediately dispersed to the electric grid, while some will be stored in a battery for later distribution. The “Project Area” or “Disturbance Area” will occupy roughly 4,800 acres spread out over a series of separate, fenced-in panel arrays defined by the County as “PV Pods”, and a small battery storage area near the transmission line (roughly 30 acres). In total, the disturbance area for the project will not exceed 5,000 acres (further codified in the Proposed CUP Conditions). The Project Area sits within portions of 18 parcels owned by eight (8) private landowners, totaling approximately 8,355 acres. The undisturbed portion of the site is dedicated to vegetative screens/setbacks, preserved wetlands and forestry, wildlife corridors, and/or areas voluntarily released from the project in response to local feedback.

The Project is located near the easternmost corner of Sussex County, south of Wakefield within the Wakefield voting district. The northernmost project parcels intersect a large 500kV transmission line, which is the project’s point of interconnection (“POI”) with the electric grid. The boundary extends several miles to the south/southwest, bordered on the north by Route 622, and to the south by the County line between Sussex and Southampton. For a depiction of the Project location and a summary of proposed parcels, please see the maps provided as parts of Exhibit A and B.

Table 1 below highlights key project information.

BLACKWATER SOLAR LLC	
Project Type	Solar facility, utility-scale; Battery energy storage facility
Solar Capacity (AC)	600 MW
Solar Capacity (DC)	Up to 780 MW
Battery Storage	400MW / 1,600MWh
DC/AC Ratio	1.15 – 1.30
Fuel Source	Photovoltaic (PV) Solar Modules
Racking	Single Axis Tracking
Design Life	35-40 Years
Project Area (“Disturbed Area”) (appx)	4,800 acres
Project Area Under Panel (appx)	1,500 acres
Total CUP Parcel Area (appx)	8,355 acres

Table 1 – Project Information

Existing land use in the Project Area is shown below in Table 2. About 2.9% of the Project Area is currently used for agriculture, while the rest of the footprint is dedicated to timber – specifically, commercially maintained loblolly pine plantations.

Disturbance Area - Current Land Use	Acres	%
Commercial Pine Plantations	4,040.2	84.5%
Mixed Forest	605.1	12.7%
Traditional Agriculture	137.5	2.9%
Total	4,782.8	

Table 2 – Existing Project Area Land Use - Approximate

The total disturbance area is a small portion of Sussex County, and a similarly small portion of the County’s timber resources. According to the County website¹, Sussex encompasses 317,400 acres (496 square miles), with 250,649 acres of commercial forestry. That means Blackwater Solar plans to

¹ <https://www.sussexcountyva.gov/page/about-sussex/>

disturb only 1.5% of the Sussex County's total acreage, and 1.8% of the acreage dedicated to commercial timber.

Neighboring land use is also primarily timber and agriculture, with a small number of single-family residences. Most of the project is highly secluded, well removed from public roads and residences. Project infrastructure will be set back a minimum of 150' from property lines and public rights of way, and 300' from residences. The perimeter of the Project will be heavily screened from view by 150 feet of mature pine trees along the outside boundary. The visual characteristics of the project are further discussed under Visual Impacts below, and further illustrated in Exhibit K – Visual Impact Analysis.

Blackwater will connect to the electrical transmission grid via a substation along the 500kV transmission line running through the northern boundary of the project. The project has two pending interconnection applications with PJM – one for the solar facility, and one for the battery storage facility. PJM is the system operator responsible for maintaining the high-voltage transmission system throughout much of the Mid-Atlantic and Midwest.

Project Concept Development Plan

The Blackwater Concept Plan design set is shown in Exhibit B. The project consists of 95 distinct array groupings – “PV pods” as defined in the Ordinance – which cover a total of approximately 4,800 acres, and a separate area for the battery storage facility (roughly 30 acres near the transmission line). The PV Pods will vary in size between 3 and 150 acres, with an average pod size of 50 acres. Each pod is surrounded by a chain link fence, inside which are parallel rows of solar panels, support structures and racking, stormwater basins, electrical collection lines, transformers, inverters, and access roads. PV Pods are connected throughout the boundary by access roads. See below for a more detailed description of the Project infrastructure.

Project Infrastructure

PV Modules and Arrays - Solar panels house a collection of photovoltaic (PV) solar cells which convert sunlight into DC electricity. The Concept Design utilizes 1.4 million 540-watt solar photovoltaic (PV) modules, mounted on ground anchored foundations and wired together in continuous rows called Arrays.



Figure 1 – Solar Arrays mounted on tracker systems

Solar Trackers - Blackwater expects to use a single-axis tracking framework structure. Called “trackers,” the system rotates the PV modules throughout the day, from east to west, to continuously orient the surface of the panels towards more direct sunlight. To comply with the ordinance, the maximum height of the lowest edge of the solar modules will be ten feet (10’) above the finished grade, and the maximum height of the solar module in the highest position will be fifteen feet (15’) above the finished grade.



Figure 2 – Crews installing modules on tracker systems

Battery Energy Storage System (BESS) – The battery system allows the Project to store energy generated from the PV system or the electrical grid for later discharge to the electrical grid.

The BESS is comprised of a series of battery cells, strung together and combined into modules, which are then stacked and housed in a series of enclosed containers, similar in size to shipping containers. Next to the containers housing the BESS are inverters which convert DC electricity to AC electricity (and vice versa) – further description of potential inverter types can be found in the description of Collector Systems below. BESS infrastructure is typically housed on a foundation of steel piles above

a compacted gravel surface, or on concrete pads. The foundation choice is determined by soil type/quality of the site and will be finalized prior to submitting the final site plan.

A Battery Management System (“BMS”) is used to monitor the system’s temperature, cell voltage, and other parameters necessary to detect early fault conditions. The BMS initiates immediate shut down of strings when monitored values exceed limits.

In addition to the BMS, fans and/or air conditioning equipment within the battery storage units are used to maintain the manufacturer’s required container temperature. Smoke and flammable gas detectors monitor the system and can force system shut down alongside the BMS. The BESS containers will comply with the National Fire Protection Association (NFPA) 855, Standard for the Installation of Stationary Energy Storage Systems.

Exhibit B – Concept Plan includes a design set for the proposed BESS, and design specs for typical infrastructure. The final supplier for the BESS equipment has not been chosen as of this application, but final site design will include a supplier which complies with the design and safety requirements as outlined in Section 16-407 of the Sussex County Zoning Ordinance related to special provisions for battery facilities. Exhibit B shows an ‘optional’ location for storage which may be used to optimize design of the system. If the optional location is not utilized, the project will opt to include panels in this area noted for disturbance.

For the avoidance of doubt, Project agrees final site plan will comply with all final design, management, and operation requirements as defined in Section 16-407 (d), (e), (f), (g), (h).

As per the Section 16-407 (j), the Project operator or owner shall conduct regular on-site inspections of the battery units and submit a written report to the Zoning Administrator on their condition, at least once every six (6) months. The Solar Facility operator or owner shall conduct monthly inspections electronically of the battery units and submit a written report to the Zoning Administrator.

Collector Systems - PV modules generate direct current (DC) electrical output. The U.S. electrical grid is an alternating current (AC) transmission system. To connect the Project to the electrical grid, the PV system’s output must be converted from DC to AC by the Project’s electrical collection system.

Once DC electricity is generated by the PV panels, it is transmitted via DC cabling to inverters where it is converted to AC electricity. The Project may use “string” inverters or “central” inverters. String inverters are small enough to mount directly onto support structures underneath panel arrays. Central inverters are larger in size and mounted on their own support structures. The final size and location of the inverters will be selected as part of the final site development plan.

The AC output from inverters is routed to medium-voltage step-up transformers (MVT), where the voltage is increased from 800V to 34.5kV and then routed to the project substation. Where practicable, the collector system cabling will be buried. However, it is anticipated that at least some of the collection systems will be above ground on structures.



Figure 3 - Example of central inverter



Figure 4 - Example of a string inverter, attached to the tracking array structure.

Project Substation – The aggregate output of the facility is collected at the Project Substation, which consists of parallel sets of internal power distribution systems (i.e., 34.5kV-115kV busses and circuit breakers, disconnect switches, and step-up transformer) designed to “step up” the voltage of the Facility to match the voltage of the transmission line (500kV). Electricity that leaves the Project Substation flows through a Utility Substation and onto the grid. The final design of the project substation will be determined in consultation with Dominion Energy, the owner of the transmission line, and PJM, the system operator.

Utility Substation – A new utility substation will be built to “tap” the 500kV transmission line. This facility will be within the Project boundary, but it will be designed, built, owned, and operated by

Dominion Energy. Once built, it will be considered part of the transmission system, distinct from the solar and storage project proposed in this CUP application.



Figure 5 - Example of a 500kV substation and transformer

Roads and Project Access Points - The Project has 31 access points, as further described under Transportation and Traffic Control and shown in Exhibit I – Traffic Study. Service Roads will connect access points to the PV Pods throughout the Project Area. Auxiliary roads will be interspersed throughout the PV Pods to access the full perimeter of the arrays. Most Project roads will be located inside the fence line of the PV pods.

Some roads may be added to the final site design after consultation with local first responders. As proposed in CUP Condition 7(a), Blackwater will consult with local volunteer firefighters to ensure the road design and location allows effective response to prevent the spread of fire outside of the fence line of the PV Pods.

The finished width of the internal roads will be between 12 and 30 feet. Service roads will be graded and may be improved with road base and/or gravel to support heavy machinery during construction. Auxiliary roads will be 12 to 25 feet wide and will use compacted native materials or gravel surface.

Access between the solar arrays is provided by access aisles. These aisles are clear spaces between panel rows comprised of unimproved native material (further described in the Landscaping Plan), meant to provide access to all areas of the site via foot or by use of 4X4 vehicles for maintenance and emergency response.

Operations and Maintenance Building – The Project may utilize a support structure on site for operations and maintenance staff (“O&M Building”). If an O&M building is utilized, it will be placed within the Project Area, behind the proposed vegetative screens, and the design will comply with ordinance requirements to use materials, colors, textures, screening, and landscaping that will blend the facility to the natural setting and surrounding structures.

Construction

Below is an overview of the Project’s expected construction timeline and proposed phasing plans. The timeline below reflects current plans, which may change between now and the final site plan approval based on the timing of state permitting, agency consultation, labor and equipment availability. Further, construction delays may occur because of inclement weather, or delays created by conservative ground preparation methods (see construction phasing below) designed to protect local water resources and prevent topsoil erosion.

Construction Timeline

The Applicant expects solar construction to progress in three “tranches” – each of which will comprise 200MW of solar. Tranche 1 is scheduled to begin 3Q of 2025 and is expected to last 24 months. Tranches 2 and 3 will begin 6 months after the start of the prior tranche, and progress along the same schedule in parallel to the previous tranche. The timeline from the beginning of Tranche 1 to the completion of construction is expected to take 3 years. The energy storage facility will be constructed during the final 9 – 12 months of the construction period, to be finished at the same time as the full facility is operational mid-2028.

	2025				2026				2027				2028			
	1Q	2Q	3Q	4Q												
Tranche 1																
Tranche 2																
Tranche 3																
Battery Storage																

Table 3 – Construction Tranche Timeline

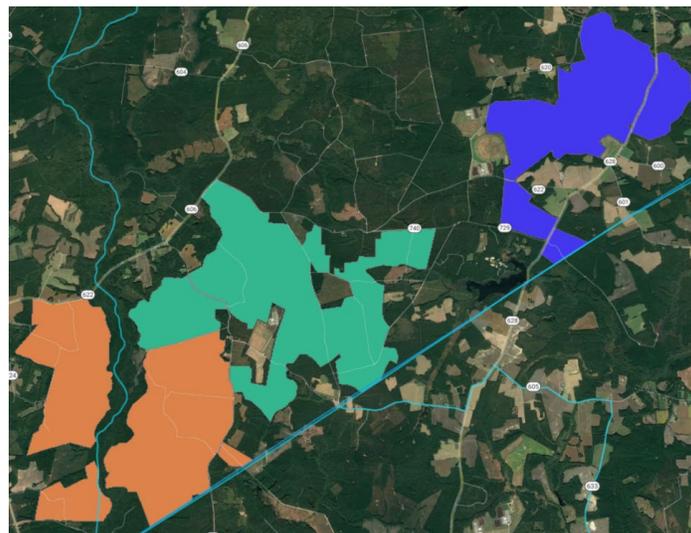


Figure 6 – Construction Tranches

During construction, the on-site workforce will consist of laborers, craftsmen, supervisory personnel, support personnel, and construction management personnel. Construction typically requires a monthly average of approximately 200 employees. As experience has shown, special circumstances may warrant an increased number of on-site workers for a short period of time, which is typically a few weeks.

Construction Phasing Narrative

Construction for each Tranche will progress through the three phases outlined below. During our initial outreach, several neighbors voiced concerns about the potential for soil erosion and stormwater runoff to damage local water resources. To address these concerns, Blackwater proposes a series of “Enhanced Stormwater and Erosion and Sediment Control Measures.” Those measures are clearly outlined in Section 4(c) of the CUP Conditions, and they have been ***bolded and italicized*** below.

1. ***Site Preparation***

Site preparation begins with the installation of access roads, temporary laydown yards, and a location for parking inside of the project boundary – which will serve as designated delivery and parking areas. Once in place, the Project will install erosion and sediment control and stormwater management features before any ground disturbance occurs. ***Blackwater has voluntarily agreed to design such facilities to accommodate 25-year storm events.***

Erosion and sediment control measures are defined in the Erosion and Sediment Control (ESC) Plan, which includes design elements to filter sedimentation and manage surface runoff created by ground disturbance during construction. Common ESC management measures include silt fences, coir logs and blankets, diversion dikes, and sediment basins, which will occur during Site Preparation prior to further ground disturbance.

Applicant note regarding Sussex County Ordinance Section 16-405(b)11: The concept plan submitted with this application assumes that all stormwater basins are converted from Erosion and Sediment Control features installed during this construction phase. Other Erosion and Sediment control features will also be installed during this phase, as described in the prior paragraph. Some of those features, such as diversion dikes, may require ground disturbance. At this stage of design, the project does not provide full ESC design with corresponding methods and locations of ESC features. However, the disturbance area of the final site will not exceed the fence lines depicted in Exhibit B.

Stormwater management measures are defined in the stormwater pollution prevention plan (SWPPP) and authorized by the DEQ stormwater permit. Stormwater design considerations reduce the volume of runoff and related sedimentation after heavy rainfall during and after construction. Best practices often convert temporary ESC features, such as sediment basins, into permanent features to capture runoff during operations.

The Project will provide an individual responsible for daily inspection of stormwater and ESC practices during construction. This same individual will provide a weekly status report to the County to immediately resolve issues. ***The proposed CUP Conditions also provide the County with the means to hire an independent third party at the expense of the Project to monitor weekly the progress of construction and to ensure compliance with the plans.***

2. Ground Preparation & Disturbance

Ground preparation begins with stumping, grubbing, and grading of the surface used for infrastructure. ***Within each Tranche, ground preparation and clearing will occur in disturbance areas of 300 acres or less to ensure proper soil stabilization. Each disturbance area will be reviewed and approved by the SW/ESC Administrator. Ground prep may not progress to the next 300-acre disturbance area until stabilization has been confirmed.***

Any topsoil removed will be reapplied to the site or conserved for decommissioning. As noted in Exhibit B – Site Plan, areas inside of the fence line are locations where the site may be graded, and topsoil may be removed. Specific locations of topsoil to be removed and preserved will be identified on the Final Construction Erosion and Sediment Control/Stormwater Management Plans. Topsoil stripped during grading shall be stockpiled, stabilized, and replaced during final grading and prior to the installation of panels. Soil stockpiles will be designed and constructed in accordance with 9VAC25-840-40:

- A. Permanent or temporary soil stabilization shall be applied to denuded areas within seven days after final grade is reached on any portion of the site. Temporary soil stabilization shall be applied within seven days to denuded areas that may not be at final grade but will remain dormant for longer than 14 days. Permanent stabilization shall be applied to areas that are to be left dormant for more than one year.
- B. During construction of the project, soil stock piles and borrow areas shall be stabilized or protected with sediment trapping measures. The applicant is responsible for the temporary protection and permanent stabilization of all soil stockpiles on site as well as borrow areas and soil intentionally transported from the project site.

Soil that is compacted during this phase may be aerated to establish ground cover post-ground disturbance. ***The Project will provide a written report from an independent engineer to the county for each 300-acre phase before work on the next phase begins.***

3. Infrastructure Installation

Detailed description of the project infrastructure is provided under the project concept development plan. Construction of the tracker/mounting assemblies will be installed at each PV Pod or installed at a single laydown yard then transferred to the Pods as necessary. Final assembly typically involves tractors and forklifts to place the tracker/mounts onto the support

structures. During this work, there will be multiple crews working the site with vehicles, including special vehicles for transporting the arrays.

The tracker/mount installations will be constructed using driven steel posts. As the solar arrays are installed, the balance of the plant will be constructed concurrently. Within the solar fields, the electrical and instrumentation/control wiring will be installed in underground trenches or overhead where underground is impractical.

Construction Noise

As per Section 3.5 of the Sussex County Noise Ordinance, no construction will occur between the hours of 10:00 p.m. and 6:00 a.m. Noise generated during construction will be temporary. 150 feet of natural vegetative screens will remain in place throughout construction, which will help to dampen sound to surrounding properties. Once operational, solar projects are quiet and should be inaudible from outside the project boundary.

Coordination with Local Emergency Services

Blackwater Solar is committed to close coordination with County Fire and Rescue Resources. Representatives of the Project have engaged in preliminary discussions with the Wakefield Volunteer Fire Department. Prior to final site plan approval, we will coordinate with first responders and designated County Staff to ensure the project design accommodates necessary vehicle access, with particular focus on the size and location of external roads necessary for fire prevention and mitigation. Such coordination will also include measures as defined in Section 16-407 (i) of the Sussex County Zoning Ordinance related to BESS design and operations.

Prior to the end of construction, Project representatives will hold a series of training classes with County first responders to provide materials, education, and training for response to on-site emergencies. The training will include a combination of classroom and on-site education and will include specific technical training for both the PV System and the BESS so that the emergency service provider, the surrounding areas, and the environment are protected.

Environmental Impacts

Environmental Resource Impact Assessment (ERIA)

Timmons Group conducted a review of the environmental resources within a three-mile radius of the Project. Blackwater does not intersect any federal, state, or local conservation or recreational lands. Several managed lands are located within a three-mile radius of the project – including Big Woods and Airfield Pond.

Wetlands and Streams

Wetlands and streams are present on site. Further delineation of wetlands resources will be required during the state permitting process, but the Project expects to avoid disturbance of wetlands with 50-foot setbacks from delineated wetland boundaries.

Threatened and Endangered Species

A threatened and endangered (T&E) species review shows that **no state or federally threatened species have been observed on the project parcels**, and the boundary has no known maternity roosts or hibernacula. The Virginia Department of Wildlife Resources (VDWR) Wildlife Environmental Review Mapping System (WERMS) identified the site as a potential habitat, and several species have been observed in the vicinity of the site, including two bats (Big-Eared, Tri-colored), three birds (Red-cockaded woodpecker, Loggerhead Shrike, Bachman's Sparrow), and three aquatic animals (Mabee's Salamander, Roanoke Longperch, Blackbanded Sunfish).

Agency coordination will be conducted during the state permitting process to ensure protection and avoidance of T&E species. The Project expects to conduct a habitat assessment for listed avian species, and additional survey for bats to include mist-net studies. For all avian species, time of year restrictions for certain activity may also be implemented to prevent impact.

Commercial timber operations are unlikely to make a suitable habitat for the red-cockaded woodpecker. According to The Nature Conservancy, the red cockaded woodpecker makes habitat in living trees that are 60 – 100 years old, and they prefer open forest cultivated by regular fires². Whereas commercial loblolly is generally cut before maturing to 60 years, and not often subject to controlled burns. Likewise, an impact on listed aquatic resources is unlikely. Fifty-foot setbacks from delineated wetlands and additional ESC and stormwater control measures will be implemented to add an additional layer of protection to water resources.

Natural Heritage Resources

The Department of Conservation of Recreation (DCR) flagged two Natural Heritage sites – The Drumwright Pond conservation site (northeast part of the project, near the transmission line), and the Manry Sinkhole Ponds N – Airfield Pond conservations site located between Tranche 1 and Tranche 2 shown above. Drumwright Pond is not considered a critical conservation site. Airfield Pond has a biodiversity rank of B2 and it is listed as a critical conservation site for three natural heritage resources. **Based on feedback from the local community and DCR, Blackwater removed over 1,300 acres of land from the Airfield Pond Conservation Site (see Community Engagement below).**

Cultural and Historic Resources

There are two previously recorded architectural resources within the project area – neither of which have been evaluated by the VDHR. There are no previously recorded archaeological resources within the project area. The Project should not affect cultural and historical resources due to the amount of cultural work required at the state permitting level. In-depth cultural surveys conducted by qualified

² The Nature Conservancy – Red Cockaded Woodpecker (<https://www.nature.org/en-us/get-involved/how-to-help/animals-we-protect/red-cockaded-woodpecker/>)

professionals will be submitted for approval and concurrence by the Virginia Department of Historic Resources (VDHR).

Applicant Comments

The prior comments outline potential environmental and cultural resources located near the site, and the mitigation efforts the Project will undergo during state permitting to avoid harm to those resources. However, Blackwater Solar also offers a host of noteworthy environmental benefits.

Renewable Energy - The project produces carbon free electricity, which displaces fossil fuels that emit carbon dioxide and particulate pollution.

Increased Stability - Blackwater creates a more stable ecology during operations. The footprint will not be subject to congoing thinning and commercial harvesting – replacing it with a stable environment comprised of pollinators, native grasses, and preserved forestry/wetlands.

Greater Diversity - the current site is a monoculture of loblolly pine. Blackwater offers hundreds of acres of pollinator plants and habitats, along with a more diverse mix of reforested trees in some areas, all of which promote a more diverse collection of plant and animal life.

Minimal Wildlife Impact – Small to medium-sized animals will have access to the full site through wildlife-friendly fencing. Larger wildlife will have consistent access to over 40 miles of wildlife corridors and over 2,000 acres of preserved open space.

Temporary Land Use – the County CUP is a temporary permit. With the decommissioning bond in place, the County and Project landowners are provided financial security necessary to guarantee the project is returned to its original condition after its useful life. The land use is preserved long term, which differs from other, more permanent industrial or housing developments.

Transportation and Route Evaluation Study

See Exhibit I for the Transportation and Route Evaluation Study.

The Project Area will have 31 entrance locations from the following roads: Route 628 (Main St./Courtland Rd), Route 620 (Brittles Mill Rd), Route 622 (Cedar Sign Post Rd), Route 605 (Barretts Church Rd), and Route 606 (Union Camp Rd).

Traffic during operations will be minimal. Estimated traffic for each 200MW construction phase is approximately 15 truck trips/day during site preparation, 30 truck trips/day during panel/infrastructure installation, and 5 truck trips/day during the commissioning/testing period. According to the study, construction traffic volumes will not exceed available roadway capacities, and the roadways should not be significantly impacted by standard construction traffic.

For further assurance to neighbors, Blackwater proposed CUP conditions certify that the project will:

1. Immediately repair road damage caused by construction.
2. Conduct a pre- and post-construction roadway evaluation and return all roads to pre-construction condition within 60 days of the completion of construction.
3. Post \$250,000 roadway bond to ensure compliance.
4. Avoid using Turkey Pen Road for heavy vehicle traffic (based on local feedback)

The study includes further information about the location of the entrances, proposed traffic management, temporary control measures, and required coordination with VDOT.

Economic Impact Analysis

Blackwater Solar will have an unprecedented economic impact on Sussex County. As further detailed in the Economic Impact Assessment (Exhibit G), the benefits take three forms: tax revenue, siting agreement payments, and economic activity.

Additional Tax Revenue

The direct fiscal benefit of the Project is expected to generate roughly \$130 million in additional revenue from higher real property value assessments, and machine and tool taxes on capital investment in the project.

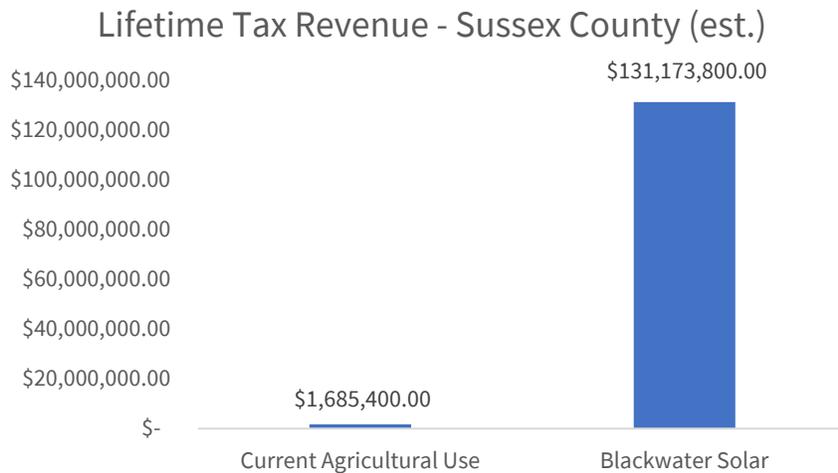


Figure 7 – County Revenue from Solar vs. Existing Agricultural use

The tax revenue amounts to roughly \$3,750,000 per year on average, which is equivalent to:

- Roughly half of the 2023 approved budget for Education Spending
- Enough to pay for 100% of the 2023 budgeted spending on Fire and EMS, with over \$1.3 million to spare.
- Almost 1/3 of the revenue projected for property taxes in 2023, **despite disturbing less than 2% of the County’s total acreage.**

Siting Agreement

Virginia Law provides Counties the opportunity to negotiate Siting Agreements with solar projects, whereby Counties may negotiate additional voluntary payments to help with local projects. In other Counties, solar projects have been used to pay for things such as new fire stations and trucks, EMS facilities, public recreation facilities, community centers, and even direct tax rebates to County residents. Blackwater will discuss the best use of potential funds with the Sussex Board of Supervisors.

Economic Activity

Most of the increase in economic activity is related to a “pulse” of spending and income during construction, which is projected to create:

- 190 direct, indirect, and induced jobs
- \$12.7 million in associated labor income
- \$97.4 million in economic output

This activity flows through to local businesses. Blackwater is projected to add \$3.5 million in spending to the top line of local Retail and Restaurants. That income is enough to support 27 new jobs in those sectors.

Landscaping & Vegetation Management

Landscaping Plan

Blackwater proposes the landscaping plan included in Exhibit D. Below are the major components:

- ***Vegetative Buffers*** – The Sussex solar ordinance requires 50 feet of existing vegetation be left in place where practicable. **Blackwater Solar proposed to leave 150’ of standing trees as vegetive screens around the perimeter of the project.** From nearly every neighboring parcel and public right of way, the project should never be visible. A small amount of the boundary (<5%) will require new vegetative screens, which will be planted to comply with the County Ordinance (show in the Table below as “In Areas Without Existing Trees”)
- ***Panel Zone*** – Area underneath and between panel arrays will be planted with native grasses and herbaceous materials.
- ***Open Area*** – Combined mix of *Preservation Areas* and *Herbaceous Vegetation*. Herbaceous Vegetation will be planted with pollinator habitats – a mix of native grasses and flowers intended to grow to full height. Preservation Areas include forests and wetlands to be preserved during the life of the project. Forests may be unchanged from their current form

(left in standing loblolly) or reforested according to the reforestation plans shown in the Landscaping Plan.

- **Stormwater Basin** – Vegetations inside of detention basins, maintained during the life of the project for stormwater management.

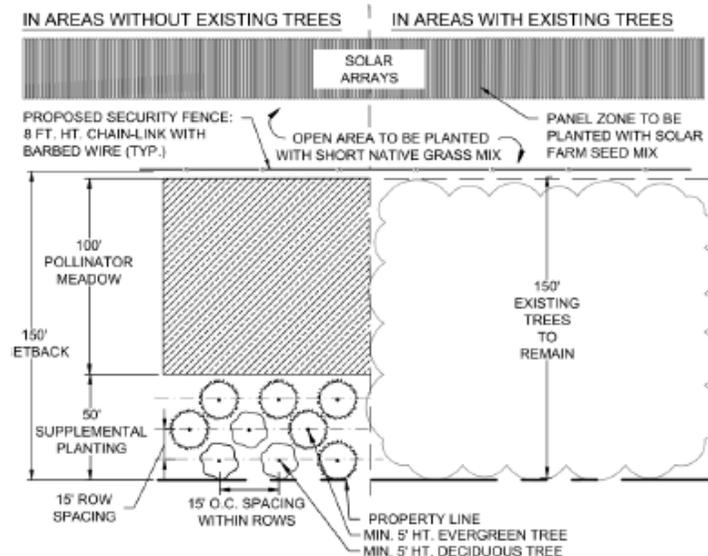


Figure 7 – Illustrative Landscaping Plan Visual Screen and Ground Cover

Vegetation Management Plan

The Vegetation Management Plan attached as Exhibit E provides best management practices to cultivate and maintain the Landscaping Plan. Notes include management practices for establishing native ground cover, managing weeds and invasive species, and ensuring the long-term health of the vegetation and soil.

Other Notes on Land Use

The Project received a lot of feedback about the loss of forestry necessary for the Project. As noted above, the disturbed acreage is a small percentage of the County. However, the Project proposes additional landscaping measures, beyond Ordinance requirements, to create a plant and animal community within the boundary that is consistent, sustainable, and diverse.

Pollinator Habitats – The Project will seek certification under the Virginia Pollinator-Smart Solar program. Pollinators provide a myriad of benefits. They assist with stormwater and erosion control and help preserve and regenerate soil quality, provide habitat for native bugs and insects that act as a food source for small animals and birds, and they are a source of natural beauty (unfortunately no pollinators will see behind 150’ of trees).

Wildlife – Blackwater has over 40 miles of wildlife corridors for large animals to travel through the boundary. For medium to small animals, wildlife-friendly fencing will allow full access to the site. Pollinator habitats throughout the boundary also promote a diversity of ecosystem and wildlife support that is more diverse than what may be found in acreage that is predominantly a single species.

Preservation – Thousands of forested acres on the project parcels will be preserved during the life of the project. No ongoing tree removal or logging will be conducted. This will provide a more consistent landscape and ecosystem for animal life. The project will also preserve water resources, as mentioned throughout this narrative.

Visual Impacts

Blackwater Solar is heavily screened from view. Most of the project is well removed from houses and public rights of way. To further prevent the risk of viewshed issues, Blackwater will leave 150’ of existing vegetation surrounding the project.

The Visual Impact Assessment attached in Exhibit J shows almost 100 photos of the site perimeter. The majority of the photos show trees – which is what neighbors can expect to see around the outside of the Project during construction and operations. In areas that have recently been timbered, replanted loblolly is expected to grow dense enough to provide an opaque cover by the time construction begins. This is illustrated via a rendering of panels on VS24 shown in the final three pages of the Exhibit J. This parcel was recently replanted. Given the growth rate of Loblolly, we expect the buffer to be opaque and tall enough to shield the project from view by the time construction starts in 2025. The Visual Analysis includes several images from drone footage taken above the tree line of the project.



Figure 8 – 150’ of Trees is a lot of trees

Community Engagement

Blackwater Solar representatives have conducted a host of voluntary community engagements with neighbors and local stakeholders. An open house was held in January, 2023 for interested parties at the 4H Center to introduce the Project and collect feedback. Before and after that meeting, Blackwater representatives have met individually or via phone to discuss the project with neighbors, local hunt clubs, national conservation groups, the 4H Center, volunteer firefighters, and local business owners, among others. Another meeting was held for neighboring landowners in April to solicit feedback to proposed changes.

This application includes major changes to the original Project. Roughly 1,300 acres near Airfield Pond, the 4H Center, Big Woods Wildlife Preserve were withdrawn. Further acreage was removed to preserve the headquarters of a local hunt club and to accommodate a potential camp site at the 4H Center. Below in red is a snapshot of the acreage removed from the original project boundary based on community feedback.

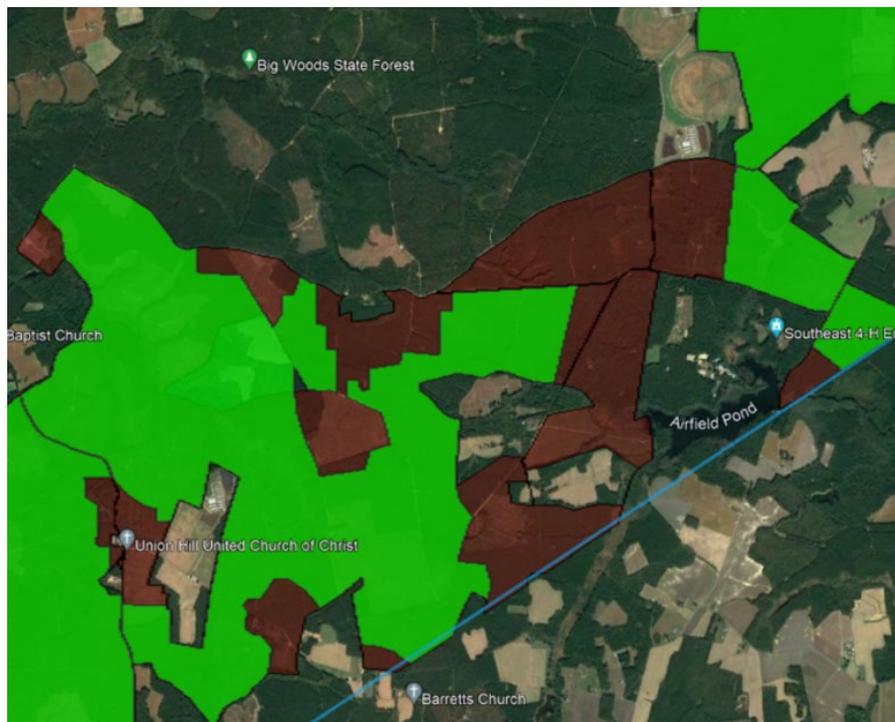


Figure X - Red acreage was removed from the project based on community feedback

In addition to the changes in the boundary, the Project added voluntary CUP conditions to ease concerns about road use and damage and risks to local water resources. Table 4 below highlights some of those added changes.

	Original Project Design	Current Application
Solar Facility Size	800MW	600MW
Disturbance Area (appx)	6,000 acres	4,800 acres Most acreage removed near 4H Center and Turkey Pen Road
Big Woods Shared Border	3.6 miles	0.8 miles
Road Use Considerations	none	No delivery traffic on Turkey Pen Rd. \$250k road repair bond.
ESC & Stormwater	DEQ Requirements	Enhanced storm design severity Construction phasing requirements Third-party engineer confirmation Performance bond
Wildlife	30 miles wildlife corridors	40+ miles of wildlife corridors Wildlife friendly fencing
Wetland Setbacks	None	50' from all delineated wetlands

Table 4 – Summary of Project Before/After Community Feedback

Accordance with Sussex County Comprehensive Plan

The Sussex County, Virginia 2004-2005 Comprehensive Plan, Chapter II: Concerns and Aspirations, Section B item 23. Utility-Scale Solar Facilities (as modified in 2022):

The plan outlines the following objectives to limit negative impacts of utility-scale solar facilities. Although the Project does not comply with 100% of the considerations below, the Applicant feels there are several driving considerations that achieve substantial conformance with the plan:

Specific site features considered in the site plan are bulleted below, with Applicant commentary.

- ***the total size shall be 100 acres or more but less than 5,000 contiguous acres; and large contiguous projects are preferred over small decentralized or large discontiguous projects to prevent land fragmentation.***

Total project disturbance area will be less than 5,000 acres. The concept development plan has approximately 4,800 acres inside of the fence line. The remainder of the acreage is dedicated to preserved wetlands, forestry, wildlife corridors, and open areas maintained in native pollinator habitats. Fragmentation that occurs in the project design is all dedicated to land uses that are compatible with protecting visual characteristics of the County, maintaining forestry, protecting wetlands and water resources, and conservation.

- ***laid out appropriately on the project parcels; and laid out with no more than 65% equipment and building coverage.***

The Concept Plan complies with the County ordinance, and in many cases exceeds the requirements established by the County. Total panel coverage is approximately 1,500 acres out of 4,800 acres in the Project Area – approximately 31% coverage. Likewise, the Project Area covers roughly 57% of the CUP parcel acreage.

- ***located outside planning areas or community hubs; and located outside forested areas to preserve forest resources; located outside prime agricultural land.***

The Project is not inside of a community hub, and less than 5% of the footprint is on agricultural land.

The project will remove some commercial forestry from production, but the total amount is less than 2% of the 250,000+ acres of commercial forestry in Sussex County.³ Further, a

³ <https://www.sussexcountyva.gov/page/about-sussex/>

CUP is temporary land use. The decommissioning bond ensures the project will be returned to its prior condition after the useful life. The project will also improve soil quality thanks to extensive vegetation management, strict and limited use of pesticides/herbicides, and cultivation of pollinator habitats and native grasses. Ultimately, solar preserves and even enhances the long-term use of the project for forestry/agriculture by preventing other, more permanent development such as industrial uses or housing.

- ***further than three (3) miles from any village or town boundary; further than two (2) miles from other existing or permitted solar facilities; and located less than or equal to one (1) mile from a transmission line.***

Setbacks in this section have been mapped and provided as Exhibit K. The Project is over two miles from other Sussex solar projects. The project is roughly ½ mile from the Wakefield town boundary along Courtland Rd, but the proximity to town is necessary to comply with the requirement for proximity to the transmission line, which intersects the northern tip of the boundary just south of the Wakefield Town border.

- ***located to minimize negative impacts in proximity to residences; historic, cultural, recreational, or environmentally-sensitive areas; and scenic viewsheds.***

The 150' buffer of trees around the project will eliminate viewshed issues for neighbors, roads, and any scenic areas nearby. To incorporate local feedback and agency comments, Blackwater removed over 1,300 acres of environmentally sensitive acreage near recreational areas (Big Woods and the 4H Center). A full survey of nearby cultural resources will be completed as part of the state permitting process, but ERIA results provided by Timmons suggest the resources inside of the project parcels are few, and any identified resources in the surrounding area should be insulated from impact via the screening left in place.

Attachments and Exhibits

ATTACHMENT 1 – CUP APPLICATION AND CONSENT LETTERS

ATTACHMENT 2 – PROPOSED CUP CONDITIONS

ATTACHMENT 3 – REZONING APPLICATION FOR DRUMWRIGHT PROPERTY LLC

ATTACHMENT 4 – NOTICE OF INTENT TO NEGOTIATE SITING AGREEMENT

EXHIBIT A – PARCEL MAPS

EXHIBIT B – CONCEPT PLAN

EXHIBIT C – DEVELOPMENT FOOTPRINT

EXHIBIT D – LANDSCAPING PLAN

EXHIBIT E – VEGETATION MANAGEMENT PLAN

EXHIBIT F – DECOMMISSIONING PLAN

EXHIBIT G – ECONOMIC IMPACT ASSESSMENT

EXHIBIT H – ENVIRONMENTAL RESOURCE IMPACT ASSESSMENT

EXHIBIT I – TRAFFIC STUDY

EXHIBIT J – VISUAL IMPACT ASSESSMENT

EXHIBIT K – COMPREHENSIVE PLAN MAP