



Hanover County Solar and Energy Storage Policy

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Section 1: Introduction

The rapid deployment of Solar Photovoltaic Electric Power Generation facilities (Solar), Battery Energy Storage Systems (BESS) and other alternative energy producing technologies within the Commonwealth of Virginia is a direct result of federal and state government responses to climate change and the goal of reducing harmful greenhouse gases. The General Assembly passed the Clean Economy Act in 2020 which was signed into law by Governor Northam on April 11, 2020. This legislation requires 100 percent of Virginia's electricity to come from carbon-free sources by 2050, which include solar, wind, hydro, waste to energy/landfill gas, and biomass fired facilities. That transition is well underway.

The 2020 Virginia Clean Economy Act ("VCEA"), Va. Code § 56-585.5, requires Dominion Energy and Appalachian Power Company to construct or acquire significant solar and storage resources by 2035. Importantly, the statute requires that the majority of these new resources must be located in the Commonwealth.

Solar facilities that are properly sited can provide benefits to the County including:

- A local source of zero emissions electric energy production
- Long term reliable energy source (the Sun)
- Can be paired with BESS to stabilize and provide resiliency to the local distribution grid
- Providing a local revenue generator
- Providing a quiet land use
- Low traffic generator

One of the greatest challenges with solar energy production is that it is very land-intensive, requiring approximately 5-10 acres to produce one megawatt of electricity. A 25-megawatt solar generating installation requires between 125 and 250 acres. By contrast, Dominion's Greenville Power Station, which uses natural gas to generate electricity, has a rated capacity of 1,588 megawatts and a footprint of approximately 55 acres.

Due to the impacts to land use, this Policy is an attempt to balance the future need for solar facilities while addressing how to harmoniously incorporate them into the County so as to maintain Hanover's rural and agricultural character.

Section 2: Purpose

The purpose of this policy is to establish the framework to provide guidance on the siting and design recommendations for solar installations within the County. Due to the amount of land that is required for these uses, it is anticipated that most installations will be located in the more rural portions of the County. The recommendations provided herein are intended to guide the location and development standards for solar facilities while striving to maintain our rural character and protect our historic, natural, cultural, and scenic resources. The provisions are also intended to meet the goals of planning and zoning under the Code of Virginia and to provide for the health, safety, and general welfare of our community.

The policy will not only guide the siting, location, and land use decisions related to Solar facilities but also address fiscal policies to ensure the siting, permitting, and revenue generation of these facilities occurs in an objective and reasonably predictable manner.

Section 3: Definitions

Battery Energy Storage System (BESS): One or more devices, assembled together, capable of storing energy in order to supply electrical energy at a future time, not to include a stand-alone 12-volt car battery or an electric motor vehicle.

Kilowatt (KW): a unit of power equal to one thousand watts.

Megawatt (MW): a unit of power equal to one million watts.

Solar Energy Facility, accessory: A facility that uses photovoltaic (PV) materials and technology to produce heat, electricity or both that is designed and intended to primarily serve the thermal or electricity needs of the property on which it is located, and any excess power generated by the facility may be sold to a public service corporation (i.e., net metering). These facilities are limited to producing no more than 25 kW of electricity, and may be roof mounted or ground mounted.

Solar Energy Facility, principal: A facility that uses photovoltaic (PV) materials and technology for the wholesale generation and distribution of electricity from sunlight. On-site components may include solar panels and other accessory components including, for example, transformers, transmission lines, and other improvements necessary to support the power generation, collection and transmission. Energy is delivered for uses in location(s) other than where it is generated. These facilities can be utility or small scale facilities and produce greater than 2 MW of electricity.

Solar Energy Facility, supplementary: A facility that uses photovoltaic (PV) materials and systems, along with related on-site facilities, to generate electricity from sunlight, to use sunlight as a direct energy source for heating or cooling of water or buildings, or to produce power by converting, collecting or transferring solar generated power. The facility may be used for on-site consumption and for the wholesale generation and distribution of electricity to a public service corporation. These facilities are limited to producing no more than 2 MW of electricity, and may be roof mounted or ground mounted.

Solar Facility, Small Scale: A solar photovoltaic electric power generating facility with a rated capacity of between 2 megawatts and 5 megawatts.

Solar Facility, Utility Scale Solar: A solar photovoltaic electric power generating facility with a rated capacity of greater than 5 megawatts.

Section 4: Solar Facilities

There are a variety of solar facilities that are being used to help meet the goals of the Commonwealth's Clean Energy Policies. Some of these facilities are designed to provide energy for primarily on-site consumption, other larger facilities are designed for wholesale generation and distribution, and some are a hybrid of both.

This policy will provide guidance to support the County's handling of four types of categories of solar facilities:

- Those designed primarily for on-site consumption (accessory uses):
 - Solar Energy Facility, accessory – Roof-mounted
 - Solar Energy Facility, accessory – Ground-mounted

- Those designed for on-site consumption and wholesale generation and distribution:
 - Solar Energy Facility, Supplementary
- Those designed solely for wholesale generation and distribution:
 - Utility Scale Solar – greater than 5 megawatts
 - Small Scale Solar – between 2 megawatts and 5 megawatts
- Those designed for energy storage:
 - Battery Energy Storage System

Section 4.1: Solar Facilities –Accessory

These facilities are designed primarily for generating energy for on-site consumption and are considered an accessory use. They may be roof-mounted or ground-mounted. The Code of Virginia requires on-site consumption facilities to be allowed by-right, but the installations must comply with any provisions pertaining to any local historic, architectural preservation, or corridor protection district adopted pursuant to Virginia Code § 15.2-2306.

4.1.a. Solar Energy Facility, Accessory, Roof Mounted

Solar Energy Facility, Accessory, Roof Mounted Standards	
Facility	Facility shall be designed primarily to serve the property on which it is located and is limited to producing no more than 25 kW of electricity
Zoning	Allowed by right in all zoning districts
Permits	A building permit is required
Height	Facility shall not extend more than 12 inches above the roof surface at maximum tilt and shall not extend further than 12 inches from boundary of the building. Solar shingles are considered to be the roof and are not subject to this requirement. In no case shall the height of the solar panels exceed the maximum building height permitted in the zoning district.

4.1.b. Solar Energy Facility, Accessory, Ground Mounted

Solar Energy Facility, Accessory, Ground Mounted Standards	
Facility	Facility shall be designed primarily to serve the property on which it is located and is limited to producing no more than 25 kW of electricity
Zoning	Allowed by right in all zoning districts
Permits	A building permit is required.

Height	Panels shall not extend more than 12 feet in height at full tilt above finished grade of the ground
Setback	Must meet building setbacks of the zoning district in which it is located
Screening	Screening from roadways and adjoining property lines is required Screening shall consist of a staggered double row of evergreen trees, planted 8 feet on center

Section 4.2: Solar Facilities – Supplementary

These facilities are not the principal use for the site but are designed for both on-site consumption and for a limited amount of energy for wholesale generation and distribution. These would be accessory uses.

4.2.a. Solar Energy Facility, supplementary

Solar Energy Facility, Supplementary Standards	
Zoning	Ground-mounted allowed as an accessory use with a Conditional Use Permit in the A-1 Agricultural District and Industrial Districts. Must meet height and setbacks of the zoning district. Roof-mounted allowed by right in Industrial Districts and with a Conditional Use Permit in the A-1 Agricultural District.
Standards	Strategies in this Policy Document related to Solar Energy Facility, accessory, Small Scale or Utility Scale should be applied, as appropriate based on the predominant use of the facility
Size	<ul style="list-style-type: none"> • These facilities are limited to producing no more than 2 MW of electricity • The aggregate area used for installation and operation of a supplementary solar energy facility shall not exceed ten percent of the property on which the facility is located, provided that where rooftops of buildings containing a permitted use are used to house components of the facility, the aggregate area may be increased by the square footage of those buildings. • Roof top panels, shall not extend more than 12 inches above the roof surface at maximum tilt and shall not extend further than 12 inches from boundary of the building. A Special Exception would be required to increase the height. • Where multiple ground-mounted supplementary solar energy facilities adjoin, or are interconnected, and the total area of combined facilities exceeds ten acres, they shall be considered a principal solar energy facility and subject to applicable standards and regulations.

Section 4.3: Solar Facilities – Principal – Wholesale Generation and Distribution

These facilities are what are often termed “solar farms.” They are land intensive and there are different State and Federal regulatory requirements based on the amount of megawatts that are produced on site. There are two types of principal solar energy facilities:

- Utility Scale Solar greater than 5 megawatts
- Small Scale Solar – between 2 megawatts and 5 megawatts

Due to the large land area required for these uses and the potential impacts to adjacent properties, detailed guidance has been developed for these uses.

Section 4.3.a. Solar Energy Facilities – Utility Scale

Solar Energy Facility – Utility Scale Standards	
Megawatts	Greater than 5 MW
Comprehensive Plan Designation	Use may be considered throughout the County except the following: <ul style="list-style-type: none"> • Area designations intended primarily for commercial and industrial uses in the Suburban Service Area. • Areas that are designated Parks and Natural Conservation Areas on the Comprehensive Plan. • Areas that are approved Agricultural and Forestal Districts.
Zoning	May only be permitted in the A-1, Agricultural District, and requires a conditional use permit
Maximum Size	No facility shall be larger than 1000 acres (within the fenced area)
Distance Separation	To avoid clustering of principal solar facilities, special consideration should be given to providing adequate spacing between solar energy facilities
Farmland Preservation	Site shall be evaluated to determine the impacts to Prime Agricultural Lands and/or Lands of Statewide Significance. Solar energy facilities should limit the amount of facilities in these locations.
Evaluation Considerations	Conformity with this Policy and the Comprehensive Plan. Adjacency to scenic roads, Federal Parks, County Parks, or National Register Historic Districts are generally discouraged without additional mitigation measures to address impacts. Properties that are currently forested are discouraged for solar facilities.
Locations	Alternative and innovative locations are encouraged. Locating on less desirable lands such as closed landfills or other constrained sites are encouraged.

Section 4.3.b. Solar Energy Facilities – Small Scale

Solar Energy Facility – Small Scale Standards	
Megawatts	Five megawatts or less
Comprehensive Plan Designation	Use may be considered throughout the County except the following: <ul style="list-style-type: none"> • Area designations intended primarily for commercial and industrial uses in the Suburban Service Area. • Areas that are designated Parks and Natural Conservation Areas on the Comprehensive Plan • Areas that are approved Agricultural and Forestal Districts.
Zoning	May only be permitted in the A-1, Agricultural District, and requires a conditional use permit
Distance Separation	To avoid clustering of principal solar facilities, special consideration should be given to providing adequate spacing between solar energy facilities.
Evaluation Considerations	Conformity with this Policy and the Comprehensive Plan Adjacency to scenic roads, Federal Parks, County Parks, or National Register Historic Districts are generally discouraged without additional mitigation measures to address impacts.
Locations	Alternative and innovative locations are encouraged. Locating on less desirable lands such as closed landfills or other constrained sites is encouraged.

4.3.c. Site Design Standards applicable to Utility and Small-Scale Solar Energy Facilities:

Site Design Standards	
Utility and Small-Scale Solar Energy Facilities	
Buffer	The solar facility operational area, to include any buildings, structures, equipment, parking, and disturbed areas, shall have a minimum buffer of: <ul style="list-style-type: none"> • 150’ from any other property line or road • 100’ from RPA wetlands, rivers, streams or other environmentally sensitive features • 50’ from any wetland not associated with an RPA • Panels, cabinets, or other associated equipment, exclusive of utility poles, wires, cables, and access roads must be 25’ from any required buffer
Buffers/Landscaping	<u>Buffer Standards</u> a. 50-150’ Buffer Width

	<ul style="list-style-type: none"> • No clearing or grading allowed within buffer • No removal of healthy vegetation allowed within the buffer • A Tree Protection Plan, which includes fencing, signage and inspections as laid out in the Planting Standards, is required for all existing vegetation being utilized to meet any buffer requirements <p>b. Buffer Planting Supplementation</p> <ul style="list-style-type: none"> • Forested Buffers need no supplementation provided: <ul style="list-style-type: none"> i. The buffer area is covered with at least 75% of natural established vegetation ii. The existing plant material is mature and in healthy condition iii. The existing plant material consists of a mix of evergreen and deciduous trees iv. Any existing trees used to satisfy this requirement must have the entirety of their canopies located within the buffer area v. There is an established understory of small trees and shrubs, both evergreen and deciduous, to provide significant buffering at the lower forested area • Supplementation for buffers that do not meet all or some of the requirements listed above: <ul style="list-style-type: none"> i. Forested Buffers with no understory buffering as listed in (v) – to be established along the inside or outside buffer line in a staggered pattern and placement, as follows per every 100’ of buffer length - <ul style="list-style-type: none"> ○ 3 small deciduous understory trees ○ 3 small evergreen trees ○ 5 large shrubs ○ 10 small to medium shrubs ii. Forested Buffers with no evergreen tree component – to be established along the inside or outside buffer line in a staggered pattern and placement, as follows per every 100’ of buffer length <ul style="list-style-type: none"> ○ 4 large evergreen trees ○ 6 small evergreen trees iii. Forested Buffers with no deciduous tree component <ul style="list-style-type: none"> ○ This does not represent an established mature buffer. Forested areas with only evergreen trees are considered pioneer growth and will need to meet the full buffer supplementation requirements outlined below. The existing evergreen trees can be used to meet this requirement. iv. Buffer Supplementation for buffers with immature, inadequate or unhealthy existing vegetation – with a staggered pattern and placement, as follows per every 100’ of buffer length <ul style="list-style-type: none"> ○ Plantings should be clustered within the buffer with no vegetative gaps of 10 or more linear feet or the existing stand of trees have no branches or understory growth lower than six feet from the ground ○ Clusters to be of no more than 50’ in width
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	<ul style="list-style-type: none"> ○ 2 Large Deciduous Trees ○ 4 Small Deciduous Trees ○ 6 Large Evergreen Trees ○ 8 Small Evergreen Trees ○ 7 large shrubs ○ 15 Small to medium shrubs ○ Existing healthy vegetation can be used to meet this requirement. <p style="text-align: center;">*Tree sizes would be regulated based on Section 26-265. Standards for trees and shrubs used in buffers.</p> <ul style="list-style-type: none"> ● <u>Maintain Existing Mature Vegetation.</u> The preservation of existing trees and shrubs within required buffers shall be maximized. All trees located within a buffer shall be retained unless removal is necessary to accommodate vehicular access and/or utilities that run generally perpendicular through the buffer. ● <u>Surety for Landscaping.</u> Prior to the approval of a plan of development, surety shall be provided for any landscaping plantings or improvements proposed for buffers or screening. ● <u>Landscape Maintenance:</u> A landscape maintenance schedule shall be included as part of the landscape plan to ensure planted materials remain viable. A landscape maintenance plan shall be required which outlines measures for the regular trimming and mowing of the site. ● <u>Site Stabilization:</u> Pollinator and other ecologically friendly and beneficial ground covers that promote wildlife habitats and forage are required to be planted on 30 percent of the total site area.
Height limitations	Excluding transmission utility poles serving the site, no buildings, structures, solar panel arrays or other equipment utilized on the site shall exceed 20 feet in height.
Access	In addition to, or as a part of, any road access approved in coordination with the County and VDOT, access to the property shall be provided for Hanover County Fire-EMS. The location and design of access roads interior to the site necessary for the passage of emergency services and necessitated county inspections shall also be established during site plan approval.
Underground utilities	<p>All new transmission and distribution lines should be placed underground except for lines which are solely the subject of the State Corporation Commission jurisdiction or otherwise required by the Commission, and except where necessary to connect to the existing utility lines. Exceptions may be granted by the Director of Planning during the site plan review process where the applicant can demonstrate that placing the lines underground will:</p> <ul style="list-style-type: none"> ● Create environmental harm such as the disturbance of Chesapeake Bay Resource Protection Areas ● The placement of underground lines is not feasible to topographical or other site conditions.

	<ul style="list-style-type: none"> Financial consideration should not be the sole reasoning for not placing lines underground
Security fencing	Security fencing and gates shall be provided for areas of facility operation. Fencing shall be located on the inner edge of the buffer (edge furthest from the property line) when possible. Maximum height for fencing shall be eight (8) feet and should include wildlife friendly design where appropriate.
Lighting	<p>Where required, site lighting shall meet the requirements of Article 5, Division 6, Lighting Requirements of the Hanover County Zoning Ordinance with regard to:</p> <ul style="list-style-type: none"> Off-site light trespass The use of full cutoff lighting Reduction of site lighting during nighttime hours to a minimum necessary to maintain safety
Land Disturbance and inspection	Land disturbance activity shall be limited to no more than 100 acres at a time unless a greater amount is permitted at the time of plan review by the Director of Planning. Such areas of disturbance shall be stabilized prior to continuing further land disturbance activity in additional areas. Land disturbance activities and stabilization shall be supervised by a third-party engineer or other qualified individual as approved by the Director of Planning, and weekly reports of activities, as well as the final stabilization report, shall be submitted for approval by the Director of Planning. All fees associated with any third-party review shall be the responsibility of the registered land disturber.
Phasing	Solar applications shall include a phasing plan if the project is to be phased.
Decommissioning	<p>A Decommissioning Plan and Performance Agreement is required to include:</p> <ol style="list-style-type: none"> Removal of all materials and equipment include cabling and wiring, both above and below ground Restoration of the property to its predevelopment condition including: <ul style="list-style-type: none"> Soil remediation including de-compaction to ensure agricultural soils are able to support crops or pastureland Reforestation of areas where tree clearing has occurred An estimate of the gross cost for the complete removal of Solar facility and all associated infrastructure, the cost of soil remediation, and the cost of reforestation. <ul style="list-style-type: none"> The cost estimate shall not include credits for the resale or salvage of the equipment and materials. Cost estimates shall be itemized by decommissioning task Reimbursement of the County by the Solar provider for an independent review and analysis by a professional engineer of the cost estimate.

	<p>e. Financial surety to Hanover County in an amount sufficient to undertake decommissioning activities should the owner default in its decommissioning responsibilities</p> <p>f. The decommissioning cost estimate shall be updated every five (5) years and adjusted for inflation. The value of the surety shall be increased to an amount equal to the inflation-adjusted cost estimate</p> <p>g. Decommissioning shall commence within six (6) months after the facility ceases to produce any electricity for the distribution system to which it was connected. The site shall be maintained in accordance with the required landscaping maintenance plan as long as the facility is producing any electricity.</p>
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4.3.d. Environmental Considerations applicable to Utility and Small Scale Solar Facilities:

Since Utility and Small Scale Solar projects involve a large footprint with significant land disturbance, potential environmental impacts should be evaluated during the review process in conjunction with state wildlife and environmental agencies. Sites should be designed to minimize impacts to prime agricultural soils, wildlife, and other natural features. A comprehensive environmental site analysis (“Site Analysis”) shall accompany all applications for a Conditional Use Permit to include identification and assessment of the following:

Environmental Considerations Utility and Small Scale Solar	
Wetlands, Floodplains and Water Quality	<ul style="list-style-type: none"> • Disturbance of Resource Protection Areas (RPA) and Non-RPA wetlands, and flood plains are to be avoided. • Riparian buffers of at least 100’ wide should be provided and protected during construction.
Threatened and Endangered (T&E) Species	A threatened and Endangered (T&E) species screen from Department of Wildlife Resources (DWR) is recommended to confirm there are no T&E species present. If present, the project shall incorporate recommendations of DWR in minimizing any impact.
Cultural and historical resources and scenic roads	To the extent practical, such resources shall remain undisturbed. If project is in close proximity to unique resources such as a century farm, historic resource, or scenic road, special consideration shall be given to provide additional setbacks or screening to minimize impacts. Protection of viewsheds is strongly encouraged.

4.3.e. Additional Considerations applicable to Utility and Small Scale Solar Facilities:

The Code of Virginia permits local governing bodies to include in the conditions of approval for a conditional use permit or special exception conditions that include (i) dedication of real property of substantial value or (ii) substantial cash payments for or construction of substantial public improvements, the need for which is not generated solely by the granting of a conditional use permit, so long as such conditions are reasonably related to the project. The goal of this policy is to address on-site and off-site

impacts from Solar facilities through the standards set forth in the policy and other conditions of approval as warranted.

Section 4.4: Solar Facilities – Battery Energy Storage Systems (BESS)

BESS has the potential to bring many benefits to Hanover residents and businesses which include:

- Providing additional capacity during peak power demand
- Increasing grid resiliency, including preventing power outages in times of high demand (for instance, summer afternoon)
- Energy costs lower for large customers utilizing BESS via lower demand charges
- Improving power quality
 - Shifting energy demand times and reducing variability between when energy is produced and when energy is needed
 - Flattening the demand curve, thereby increasing the available power on the grid when needed most
 - Making renewable energy more cost competitive – allowing for more diverse energy generators & increasing local energy production
 - Load-shifting – ensuring that the grid is never burdened with too much or too little energy.
- Local revenue generator
- Scalable
- Quiet
- Small – a typically one megawatt storage facility is smaller than a standard shipping container
- Low traffic generator, little maintenance required due to small size and remote monitoring

To promote the development of BESS technology in Hanover County the Board of Supervisors adopted Ordinance 22-08, Battery Energy Storage Systems on November 9, 2022.

Battery Energy Storage Systems (BESS)	
Comprehensive Plan Designation	May be considered in agricultural and industrial districts only.
Evaluation Considerations	Conformity with this Policy and the Comprehensive Plan
Locations	<ul style="list-style-type: none"> • Avoid siting in residentially zoned areas. • Front of the meter Tier 2 BESS sites shall be confined to the agricultural and industrial zoning districts only. In commercial zones areas, Tier 2 BESS shall be limited to behind-the-meter use by the customer.

	<ul style="list-style-type: none"> • Locate BESS in proximity to the distribution network: BESS sites will ideally be located within two miles of the electric distribution network. • Co-location of Tier 2 BESS with other solar facilities are encouraged.
Underground Utilities	<p>All new transmission and distribution lines shall be placed underground except for lines which are solely the subject of the State Corporation Commission jurisdiction, and except where necessary to connect to the existing utility lines.</p> <p>Exceptions may be granted by the Director of Planning during the site plan review process where the applicant can demonstrate that placing the lines underground will:</p> <ul style="list-style-type: none"> • Create environmental harm such as the disturbance of Chesapeake Bay Resource Protection Areas • The placement of underground lines is not feasible to topographical or other site conditions.
Environmental Considerations	<ul style="list-style-type: none"> • Minimize disturbance of agricultural soils: For sites greater than 10 acres, no more than 20 percent of soils on selected sites designated as Prime Agricultural or of Statewide Importance shall be developed for BESS within areas designated for Agricultural uses in the General Land Use Plan. • Critical Resources: Maintain adequate buffers around environmentally sensitive features and historic and cultural resources. • The removal or destruction of these features should be avoided.
Setbacks	<p>Establish significant setbacks from the public right of way and adjacent properties.</p> <ul style="list-style-type: none"> • Setback no less than 100’ should be maintained along the frontage of public roads and property lines adjacent to residential properties • Setback no less than 50’ from all other property lines.
Screening and Buffering	<p>Where appropriate, vegetated screening and buffering shall be required to minimize the visual impacts:</p> <ul style="list-style-type: none"> • The use of naturally vegetated buffers is encouraged. • Additional vegetated screening meeting the intent of this policy may be required to reduce or eliminate visual impacts where little or no existing vegetation is located. • Where supplemental planting is required, native species are to be used. • Preserve natural vegetation.
Landscaping Maintenance and Bonding	<ul style="list-style-type: none"> • A landscape maintenance schedule shall be included as part of the landscape plan to ensure planted materials remain viable. <ul style="list-style-type: none"> ○ The maintenance plan shall also outline measures for the regular trimming and mowing of the site. ○ All landscaping shall be bonded to ensure it will be replaced within a specified period of time should the initial planting fail.

Height	Structures other than utility poles should be limited to no more than 20 feet in height.
Lighting	Where required, site lighting shall meet the requirements of Article 5, Division 6, Lighting Requirements of the Hanover County Zoning Ordinance with regard to: <ul style="list-style-type: none"> • Off-site light trespass • The use of full cutoff lighting • Reduction of site lighting during nighttime hours to security levels
Security Fencing	Required fencing shall be installed.
Public Safety	<ul style="list-style-type: none"> • Pre-Incident Plan: BESS developers shall coordinate with Hanover Fire-EMS to develop a pre-incident plan for responding to fires, explosions, and other emergency conditions associated with the BESS installation. • Education for Fire-EMS: The BESS developer shall be responsible for educating Hanover Fire-EMS on methods for responding to fires and incidents associated with the particular technology.
Decommissioning	<p>A Decommissioning Plan and Performance Agreement is required to include:</p> <ul style="list-style-type: none"> • Removal of all materials and equipment include cabling and wiring, both above and below ground • Restoration of the property to its predevelopment condition including: <ul style="list-style-type: none"> ○ Soil remediation including de-compaction to ensure agricultural soils are able to support crops or pastureland ○ Reforestation of areas where tree clearing has occurred • An estimate of the gross cost for the complete removal of Solar facility and all associated infrastructure, the cost of soil remediation, and the cost of reforestation <ul style="list-style-type: none"> ○ The cost estimate shall not include credits for the resale or salvage of the equipment and materials. ○ Cost estimates shall be itemized by decommissioning task • Reimbursement of the County by the Solar provider for an independent review and analysis by a professional engineer of the cost estimate. • Financial surety to Hanover County in an amount sufficient to undertake decommissioning activities should the owner default in its decommissioning responsibilities • The decommissioning cost estimate shall be updated every five (5) years and adjusted for inflation. The value of the surety shall be increased to an amount equal to the inflation-adjusted cost estimate. • Decommissioning shall commence within six (6) months after the facility ceases to produce electricity for the distribution system to which it is connected.

Section 5: Fiscal Considerations

The Code of Virginia authorizes local governments to use one of two approaches to tax property associated with solar facilities. Local government may use ratios specific to photovoltaic equipment assessment and apply the machinery and tools tax rate (or, for projects of five megawatts or less, a rate equal to or less than the County's real estate tax rate), or they may apply a simple revenue share which is based on the facility's megawatt structure. The County must choose one approach and implement that approach consistently to all solar facilities.

In Hanover County, Business Personal Property Returns must be filed annually by May 1. Returns filed after May 1 are assessed with a late filing fee. Businesses that do not file a return receive a statutory assessment by the Hanover County Commissioner of the Revenue. Regardless of the assessment methodology, owners of the solar facility must file business personal property returns in accordance with the guidelines published by the Commissioner of the Revenue. The Commissioner of the Revenue will then assess the property based on the Code of Virginia and the Hanover County Code to produce the annual tax liability.

Hanover County will assess tax liability for solar and energy storage systems as part of the machinery and tools tax classification of business personal property. The limitations on taxation and specific guidelines on assessment methodologies and tax exemptions are outlined in the State Code and will be adopted as a local ordinance as well. The assessment framework is outlined below:

- Solar systems equaling 5MW or less, approved by the County before July 1, 2022, are exempt from local taxation and may not be made subject to any revenue share ordinance the County may adopt.
- Solar systems equaling 5MW or less, approved by the County on or after July 1, 2022, are only partially exempt from local taxation (80 percent of assessed value is exempt the first five years; 70 percent of assessed value is exempt the second five years in service; and 60 percent of assessed value is exempt for all remaining years in service), and the applicable tax rate cannot exceed the County's real estate tax rate. The County may opt to adopt a revenue share ordinance and apply the revenue share provisions in lieu of taxation.
- For solar systems greater than 5MW, the exemptions are the same: 80 percent of the assessed value in the first five years in service after commencement of commercial operation, 70 percent of the assessed value in the second five years in service, and 60 percent of the assessed value for all remaining years in service. The County again may choose to adopt a revenue share ordinance and apply the revenue share provisions in lieu of taxation.
- For BESS, the exemption for energy storage systems "(i) shall apply only to projects greater than five megawatts and less than 150 megawatts, as measured in alternating current (AC) storage capacity, and (ii) shall be in the following amounts: 80 percent of the assessed value in the first five years of service after commencement of commercial operation, 70 percent of the assessed value in the second five years in service, and 60 percent of the assessed value for all remaining years in service." Va. Code § 58.1-3660. G.
- The exemption for energy storage systems greater than 5 MW AC shall not apply unless an application has been filed with the locality for the project before July 1, 2030. Va. Code § 58.1-3660. H.

To ensure that the impacts—both on-site and off-site—of solar facilities are appropriately mitigated or otherwise addressed, Hanover County will use options set out in the Code of Virginia, including the following:

- a. Applicants for solar projects or energy storage projects of greater than 5 megawatts may meet with County staff prior to application being placed on a Planning Commission agenda to negotiate a siting agreement as permitted by Virginia Code §15.2-2316.7. Siting agreements shall address issues including, but not limited to, financial compensation (if any) to the County, the timing of payments required by the siting agreement, the required finding that the project is substantially in accord with the County's Comprehensive Plan, the timing of application submissions, and cooperation between the applicant and the County on federal and state approvals.
- b. For projects where it is determined that financial compensation to the County is appropriate to address the impacts anticipated by the solar facility, funds should be designated for uses permitted by the Code of Virginia, including (1) capital needs set out in the County's capital improvement plan, the County budget, or the County's fiscal fund balance policy, or (2) assistance in the development of broadband, as defined in § 56-585.1:9 of the Code of Virginia.
Any agreement shall provide that the Board will make the final determination as to where to spend any such funds, subject to appropriations and any limitations set forth in the Code of Virginia.
- c. For projects that require the rezoning of land or the issuance of a conditional use permit or special exception, conditions should be tailored to fully address the impacts of a facility on the community and the County at large.
- d. For projects 5 MW or less, the applicant may choose to negotiate a siting agreement with the County. If they do not do this, the application will need to be reviewed to determine if it is Substantially in Accord with the Comprehensive Plan.

Financial compensation negotiations would be based on a per Megawatt cost derived from a calculation linked to the County's Capital Improvement Plans, past and future, specifically focusing on projects relating to broadband and public safety. Depending on the location of the facility, other capital projects may be considered for financial impacts as allowed by state Code.

The per megawatt value will be adjusted annually by the Energy Services Index, which is a subsidiary of the Consumer Price Index (CPI). The per megawatt value will be recalculated every three years by revaluating the five year average of the total general fund Capital Improvement Plan projects as related to broadband, public safety and any other projects deemed applicable by the Board.