

From: Chris Meyer <cmeyer@eastpointenergy.com>
Sent: Monday, January 13, 2025 3:10 PM
To: Bill Fritz <BFRITZ@albemarle.org>
Subject: East Point Energy's observations on draft Solar ordinance

CAUTION: This message originated outside the County of Albemarle email system. DO NOT CLICK on links or open attachments unless you are sure the content is safe.

Bill, please see below specific to energy storage.

East Point Energy's Albemarle County Solar Ordinance Draft Observations

East Point Energy is a development firm focused on the origination, construction, and operation of energy storage projects, with projects throughout Virginia and the U.S. We developed the first utility battery energy storage projects in VA (Brokenburg Energy Center for Rappahannock Electric Cooperative) and largest operational project in the state ([Dry Bridge Energy Center for Dominion](#)). More recently, East Point has successfully permitted multiple other projects throughout the state, so we're intimately knowledgeable of energy storage ordinances and best practices that jurisdictions have created throughout the state.

East Point Energy finds the Albemarle County draft ordinance to be very good for promoting energy storage projects in the County. It provides clear rules for setbacks and other guidelines around permitting, which improves developers (like East Point's) ability to properly site projects and create economical business cases for them. However, there is one modification we request in order to make the business case more likely to work financially.

Specifically, the decommissioning surety section should combine its paragraph "h" with a sub-paragraph "v". The problem is that the paragraph "h" header prioritizes cash deposits into escrow accounts, equivalent to the decommissioning value as the primary manner to provide surety. Cash deposits into escrow are the most expensive manner to provide surety. In the majority of cases, this will sink the project financially because of the required capital outlay that literally sits in a bank, not generating any type of return. Thus, East Point suggests the following changes, which we believe would still provide the necessary surety for the County, but provide developers more flexibility around the type of surety available for their use:

Page 6: Section 4. Decommissioning and Site Rehabilitation > paragraph h. "If a decommissioning...": Merge paragraph "h" with one the sub-paragraph "v" to make a new paragraph "h" that reads:

If a decommissioning plan is required, the estimated cost of the decommissioning must be guaranteed by *a surety instrument, to be approved by the County such as performance bond, letter of credit, company guarantee, or deposit of funds in an escrow account at a financial institution approved by the County.*

Italics = addition of content from existing paragraph h(v)

Thank you for considering this request. Again, we believe the majority of the ordinance is providing the necessary guidance to make siting battery energy storage projects in Albemarle County a reality.



Chris Meyer

Sr. Project Developer

Ph: 434-227-5549 (EST)

From: CvilleREA <director@cvillearea.org>

Sent: Monday, January 13, 2025 3:13 PM

To: Bill Fritz <BFRTZ@albemarle.org>

Cc: Brian Kusiak <bkusiak@torchcleanenergy.com>; Russ Edwards <edwardsr@tigersolar.com>; Maria Duster <maria@theclimaticollaborative.org>; Luke Somers <luke.somers@apexcleanenergy.com>; Emily Pendergraft <ependergraft@hexagon-energy.com>

Subject: CvilleREA's comments regarding Solar Ordinance Draft for PC Hearing

CAUTION: This message originated outside the County of Albemarle email system. DO NOT CLICK on links or open attachments unless you are sure the content is safe.

Bill,

Hope you're well. I'll be attending in person and will provide them verbally during the public comment section of the hearing.

Thanks! Chris

Alb County Planning Commission Solar Ordinance comments

Thank you Commissioners for the opportunity to speak this evening.

I'm Chris Meyer and I am the Board Chair for the Cville Renewable Energy Alliance, which is the trade association for the numerous clean energy firms located in the great Charlottesville area.

CvilleREA thanks the Planning Department for collaborating with us and the broader community to develop this new solar ordinance draft. It has significantly improved over time and improves the ability of our member firms to build and create more clean energy in the County.

However, there are a couple of items we would like to see modified that would facilitate deployment while still protecting the nearby environment:

- 1.
 - 2.
 3. Removal of the 500sqft limit on ground mounted solar panel zone over pervious surface
 4. for by right accessory solar energy facilities in non-Rural Areas. While most commercial and industrial systems are roof mounted, such a requirement would make almost any system for a commercial or industrial property need a SUP, which would make them unlikely
 5. to be built.
 - 6.
-
- 2.
 - 3.
 4. Modifying the decommissioning surety language to include other surety option such as
 5. bonds, letters of credit, or private guarantees instead of cash into an escrow as the primary method. Being required to deposit a large amount of cash that aren't being used to actually construct a project would make a project's economics impossible.
 - 6.
-
- 3.
 - 4.
 5. Increasing the by right solar panel zone area from 21 acres to 50 acres would really

6. incentivize community solar projects and align with the state definition of them being sizes up to 5MW. Smaller - 30-50 acres panel zones - can be more easily built in Albemarle County because of geography and existing parcel sizes in addition to bringing
7. more benefits to Albemarle County residents - and low-income residents especially - through their ability to subscribe to them.
- 8.

Finally, I do want to specifically note the inclusion of Battery Energy Storage projects in the ordinance. Energy storage projects are key components of a clean energy electricity grid and should be sited in the County also.

Thank you for your time.

From: Robert McGinnis <rmcginnis@pecva.org>
Sent: Monday, January 13, 2025 3:13 PM
To: Planning Commission <PlanningCommission@albemarle.org>
Cc: Board of Supervisors members <bos@albemarle.org>; Michael Barnes <mbarnes2@albemarle.org>; Bill Fritz <BFRITZ@albemarle.org>
Subject: PEC comments on ZTA202300001 draft Solar Energy Facility and Battery Storage Facility ordinance

CAUTION: This message originated outside the County of Albemarle email system. DO NOT CLICK on links or open attachments unless you are sure the content is safe.

Good afternoon Chair Missel and Planning Commissioners,

On behalf of the Piedmont Environmental Council (PEC), I am submitting the following comments on the ZTA202300001 draft Solar Energy Facility and Battery Storage Facility ordinance.

- A. Given the potential for adverse land use and environmental impacts, PEC strongly recommends **that projects of 10 acres or more of panel area be reviewed via special use permit**. The special use permit process will allow for community engagement and public comment and would more intentionally address project-specific conditions and avoidance, minimization, and mitigation of adverse impacts. This recommendation is partly aligned with the Virginia Department of Environmental Quality's proposed regulations for mitigating impacts from solar facilities. Those pending regulations indicate that solar developers mitigate impacts to at least 10 acres of prime agricultural land or 50 acres of forest.
- B. How will the ordinance address **avoidance of prime agricultural soils**?

- C. How will the ordinance address **avoidance of forest lands other than Large Forest Blocks scoring 4.1 and above?**
- D. How will the ordinance **mitigate the loss of prime agricultural soils and forests and forest land?** With the possible adoption by the end of 2025 of Virginia Department of Environmental Quality regulations addressing the mitigation of the loss of prime agricultural soils and forests, how will the County address potential conflicts between the County's ordinance and the regulations?
- E. **Require mass grading be avoided to the greatest extent practicable and existing landforms retained.** Consider incorporating all-terrain trackers as an example of a best practice. Link to manufacturer: <https://nevados.solar/product/>
- F. Include requirements that **invasive species** listed on the Virginia Department of Conservation and Recreation (DCR) list shall not be permitted.
- G. Include a requirement that **locally/regionally native plants** be used, with limited non-invasive non-native plant exceptions based on County review and approval of a justification for the exception(s). *[This recommendation has been informed in part by a review of the Virginia Department of Conservation and Recreation (DCR) report [Virginia Localities Solar Ordinances and Native Vegetation](#). This document is a compendium of locality requirements for native and pollinator-friendly plant species at utility-scale solar facilities in Virginia.]*
- H. Require a **Vegetation Management Plan** for projects 10 acres or greater of panel area to address all plants, invasive non-native plants, including all planted vegetation and retained vegetation for screening and buffers.
- I. Require **third-party inspection of erosion and sediment control measures** for projects 10 acres or greater of panel area during and after construction until permanent vegetative cover is established. Inspection reports submitted to the County. Costs of third-party inspection paid for by the applicant.
- J. Require a **Siting Agreement** for projects exceeding 20 acres of panel area. Funds paid to the County could be directed to the County's Acquisition of Conservation Easements (ACE) program or a newly created Conservation Fund that could pay for conservation projects within the County.
- K. Explicitly allow **agrivoltaics/dual-use projects**. These are projects that integrate agricultural production or livestock grazing or other agricultural uses within ground-mounted solar facilities.
- L. Require a **viewshed study via GIS and computer-generated visual simulations of proposed screening and buffering** for projects greater than 10 acres of panel area.
- M. Require a **construction traffic access plan** for projects greater than 10 acres of panel area.
- N. Require the **recycling of materials and equipment as they are replaced and at decommissioning**.

Following are PEC's comments specific to sections of the draft ordinance:

Sec. 5.1.65, 5. *By-right ground mounted solar energy facilities in the Rural Areas (RA) zoning district are limited to a maximum of 21 acres of panel area on any parcel in existence at the time of adoption of this ordinance.*

- PEC comment: Given the potential for adverse land use and environmental impacts, PEC strongly recommends that projects of 10 acres or more of panel area be reviewed via special use permit. The special use permit process will allow for community engagement and public comment and would more intentionally address project-specific conditions and avoidance, minimization, and mitigation of adverse impacts.

Sec. 5.1.65, 10. *All ground mounted solar energy facilities with a panel zone of two acres or greater are required to **obtain Gold Certified Virginia Pollinator Smart status within three years of issuance of a building permit. Gold Certified Virginia Pollinator status must be maintained for the life of the facility.***

- PEC comment: PEC recommends that the vegetation management plan that is included in the Virginia Pollinator Smart program that is optional be a requirement in this ordinance.

Sec. 5.1.65, 11. *Energy facilities with a panel zone of 10 acres or greater must be **screened from public streets and abutting parcels not under common ownership.***

- PEC comment: PEC recommends that all projects that interconnect with distribution and transmission lines be required to be screened.

Sec. 5.1.65, 14. *Any **fencing on the interior of the buffer/screening area of ground-mounted energy facilities...***

- PEC comment: Projects should follow [VDWR Solar Energy Facility Construction and Operation Recommendations](#) for wildlife passage and fencing.

Sec. 5.1.65, 16. *Energy facilities are not permitted within Forest Blocks identified in the Comprehensive Plan as scoring 4.1 or above.*

- PEC comment: PEC strongly supports the requirement that **projects are not permitted in Forest Blocks** scoring 4.1 or above as shown in the Biodiversity Action Plan (BAP). Consideration should also be given to requiring avoidance of the **BAP Important Sites**.

Sec. 5.1.65, 18. *Notwithstanding [section 32.2](#), a **site plan is not required for an energy facility...***

- PEC comment: Though this section requires the submission of the documents, plans, etc., that are required by the County for a site plan review, site plans are also reviewed by other agencies such as VDOT and County Fire Rescue. How will the County ensure protection of public health, safety, and welfare with this type of submission process?

Sec. 5.1.65, 19. *Any new associated electrical transmission lines, whether connecting internal portions of the project or connecting to a switchyard, substation, or point of interconnection, and whether above or below ground, **must be located in a manner to be least intrusive and mitigate their impact to surrounding parcels.***

- PEC comment: How will the County determine impacts and mitigation sufficient to support mitigation?

Thank you for the opportunity to provide PEC's comments.

Sincerely,

Rob McGinnis PLA FASLA

Senior Land Use Field Representative

Albemarle County & Greene County

The Piedmont Environmental Council (PEC)

410 East Water Street, Suite 700

Charlottesville, Virginia 22902

Email: rmcginnis@pecva.org

Mobile: (434) 962-9110

www.pecva.org

From: Epstein, Howard E (hee2b) <hee2b@virginia.edu>

Sent: Monday, January 13, 2025 3:56 PM

To: Carolyn Shaffer <cshaffer2@albemarle.org>

Subject: Solar Ordinance

CAUTION: This message originated outside the County of Albemarle email system. DO NOT CLICK on links or open attachments unless you are sure the content is safe.

Ms. Shaffer,

I am writing to comment on the Albemarle County draft Solar Ordinance. To preface, the continued use of fossil fuels as our dominant energy source is destroying our planet. In addition, these energy resources are limited, and are very likely to become more expensive as they are depleted or challenging to acquire as a result of global conflicts. We have at our disposal natural energy sources (e.g solar and wind) that do not get depleted and don't produce greenhouse gases. We must transition to renewable energy sources (we will be forced to do this at some point in the future anyway), and we need to provide the appropriate incentives to facilitate this as much as possible - the environmental and economic benefits are apparent.

With that in mind, I would like to see by-right solar facilities in the Rural Areas up to 50 acres and a less restrictive panel height limit, to encourage more community-scale facilities. If the County is concerned about viewsheds and the appearance of our entrance corridors, that ship has sailed. In my opinion, we have not maintained the attractiveness of our entrance corridors (e.g. 29 north), although this is all subjective. For me, when I drive into a town and see solar panels and wind turbines, I think progressive, and that's what I would like to think about Albemarle County, where I have lived for 26 years.

Thank you all for your work on this and thanks for considering these thoughts.

Sincerely,

Howard Epstein

Sidman P. Poole Professor of Environmental Sciences

University of Virginia

Albemarle County Resident

From: Tim Michel <tim.m.michel@gmail.com>

Sent: Monday, January 13, 2025 4:42 PM

To: Planning Commission <PlanningCommission@albemarle.org>

Subject: Solar installations

CAUTION: This message originated outside the County of Albemarle email system. DO NOT CLICK on links or open attachments unless you are sure the content is safe.

To Planning Commissioners

I support PEC's recommendations for this ordinance. Thank You ,

Tim Michel

--

Tim Michel

Cell 434 960 1124

Office 434 295 1131

Email: Tim.M.Michel@gmail.com

From: Maria Düster <maria@theclimatecollaborative.org>

Sent: Monday, January 13, 2025 5:00 PM

To: Bill Fritz <BFRITZ@albemarle.org>; Carolyn Shaffer <cshaffer2@albemarle.org>; Michael Barnes <mbarnes2@albemarle.org>; Planning Commission <PlanningCommission@albemarle.org>; Board of Supervisors members <bos@albemarle.org>; Ann Mallek <amallek@albemarle.org>; Michael Pruitt <mpruitt@albemarle.org>; Jim Andrews <jandrews2@albemarle.org>; Ned Gallaway <ngallaway@albemarle.org>; Bea LaPisto-Kirtley <bkirtley@albemarle.org>; Diantha McKeel <dmckeel@albemarle.org>; Frederick Missel <fmissel@albemarle.org>

Cc: Sadhbh O'Flynn <sadhbh@theclimatecollaborative.org>; Susan Kruse <susan@theclimatecollaborative.org>; Carolyn Pugh <carolyn@theclimatecollaborative.org>

Subject: C3 Recommendations - Albemarle County Revised Solar Ordinance

CAUTION: This message originated outside the County of Albemarle email system. DO NOT CLICK on links or open attachments unless you are sure the content is safe.

Dear Albemarle County Board of Supervisors, Planning Commission, and Community Development Staff -

I hope you are well. I am writing on behalf of the Community Climate Collaborative (C3) to share our recommendations and feedback on Albemarle County's revised draft solar ordinance.

At C3, we believe that deploying solar energy *rapidly, responsibly, and equitably* is a critical part of meeting Albemarle's climate goals and addressing the climate crisis. We believe in a just transition to renewable energy that actively empowers all members of our community.

Our recommendations broadly include:

- **Aligning Solar Development with Albemarle County's Climate Goals and Plan**
- **Further Streamlining Small-Scale and Community Solar**
- **Increasing Clarity and Flexibility in Development Requirements**

Please see the [attached document](#) for specific details on each recommendation.

In order to help community members and leaders learn more about solar technology, we created [two FAQs](#) that I've attached to this email. The general FAQ provides an overview of solar technology and ordinance processes, while the Albemarle-specific FAQ answers questions directly relevant to the legal and socioeconomic context of the County. Please do not hesitate to reach out with any further questions.

We look forward to attending and speaking at the Planning Commission hearing tomorrow. Thank you for all of the work you do.

Sincerely,

Maria Duster

--

Maria Duster (she/they)

Climate Justice Policy Manager,

Community Climate Collaborative

cel. (512) 516-1818

theclimatecollaborative.org

From: Christine Putnam <chirshputnam@gmail.com>

Sent: Tuesday, January 14, 2025 8:58 AM

To: Planning Commission <PlanningCommission@albemarle.org>

Cc: Board of Supervisors members <bos@albemarle.org>

Subject: Solar Ordinance

CAUTION: This message originated outside the County of Albemarle email system. DO NOT CLICK on links or open attachments unless you are sure the content is safe.

Dear Commissioners,

I serve on the Albemarle County Natural Heritage Committee and I live in Southern Albemarle. My property is surrounded by the future Woodridge Solar Project so I am keenly aware of what is at stake as we convert forest and farmland into utility scale solar into what is essentially an industrial use.

I am pleased to see the following key elements to protect natural resources in the draft ordinance:

- Pollinator Smart Gold Certification for all facilities over 2 acres, but a vegetative management plan must be a requirement.
- Restricting facilities in high-scoring forest blocks identified in the Comp Plan. We must protect our native hardwood forests!

My biggest concern is the size of the by-right facilities. If you are willing to allow up to 21 acres to be developed without a special use permit, there must be County-required conditions that help to avoid, minimize, or mitigate adverse impacts. Those conditions should include the following:

- Use of best practices to minimize mass grading such as the use of all terrain trackers
- Pollinator Smart Certification provides a roadmap for responsible environmental stewardship, but there must be oversight to ensure proper implementation.
- Follow [VDWR Solar Energy Facility Construction and Operation Recommendations](#) for wildlife passage and fencing.
- Require a decommissioning requirements

I hope you have read and considered the comments submitted by the Natural Heritage Committee via email on 1-10-2025.

Yes we need to develop clean energy, but let's be very careful to not harm the precious and valuable natural resources entrusted to us.

Sincerely,

Christine Putnam

Scottsville District

From: Carol CARTER <rcarter112@aol.com>

Sent: Tuesday, January 14, 2025 10:31 AM

To: Planning Commission <PlanningCommission@albemarle.org>

Cc: Board of Supervisors members <bos@albemarle.org>

Subject: Solar Ordinance

CAUTION: This message originated outside the County of Albemarle email system. DO NOT CLICK on links or open attachments unless you are sure the content is safe.

Dear Commissioners,

I am writing to voice my concerns about the draft solar ordinance. I am very much in favor of solar energy and employ it on my own farm on farm shed rooftops. I wish that all rooftops, parking lots and other already impervious surfaces could host solar prior to gobbling up farm land. We need to push the power companies for distributed solar. Are there plans for parking lot solar at Biscuit Run Park for instance? Per capita energy use was decreasing due to energy efficiencies UNTIL the advent of DATA centers and associated AI demand that we cannot even conceive.

I've spoken and written before on the detriments of large scale solar on our Albemarle County soils, especially when any grading is allowed. Soil takes a very long time to build its structure. Soil scientists say 100 years per inch. Soil sequesters carbon in addition to sequestering more carbon when trees, crops or meadows are growing on it. Grading releases carbon into the atmosphere.

Albemarle County is a tourist destination. It is a magnet really, for many residents of the DC area, Richmond, Norfolk and beyond. The Piedmont is beautiful. We need to be careful not to make it into a crazy quilt of pastoral and productive farm scenery pock marked with the industrial solar installations (even if they don't meet the definition of industrial solar). I've toured the huge AES facility in Spotsylvania and appreciate the approach of consolidating thoughtful solar on large sites

for economies of scale and to avoid inserting smaller facilities higgledy -piggledy throughout the landscape.

We also have a vibrant Forest industry. It is always sad to see forest cut for timber. The land looks terrible for a while, but it recovers quickly from the harvest of a forest crop. Even the Woodridge/Hexagon solar area near my home which was an absolute eyesore after harvest, is now full of wildlife, as seedlings have rejuvenated prior to buildout. The Dept of Forestry sees solar as the biggest threat to the Virginia forest industry.

Clean water sources are increasing in importance and demand for water is increasing while we lose forest cover and its important water holding capacity. Meanwhile storms are stronger and that water rushes off the hard pan that is left.

Wildlife corridors are gaining more attention as we crowd out the creatures we share the land with. Cordoning off as many as 21 acres plots will have big impacts there.

Actual effective visual screening these facilities is very difficult to achieve with our beautiful rolling hillsides.

I do applaud your efforts and your staff's to develop this ordinance. Please consider the following:

I would like to see 10 acres by right and 21 acres or more require a SUP in order to let the local communities voice their support or concerns.

Pollinator Smart certification is a beginning. Gold Certification is even better paired with a vegetation management plan to monitor and remove remove invasive plants and to use native trees and shrubs for necessary screening versus the ubiquitous albeit fast growing Leyland cypress.

Best practices for agrivoltaics should be incentivized.

Plans for water consumption on large solar installations must be considered. Panels need occasional washing down for highest productivity. Drilling wells for that pulls more groundwater.

I am not anti progress. I do sincerely hope that care is taken to protect our rural landscapes which many see as our County's biggest treasure.

I sincerely thank you for your service and your time and consideration.

Carol Carter

852 Redlands Farm

Charlottesville

From: Emily Smith <emily.az.smith@gmail.com>

Sent: Tuesday, January 14, 2025 2:02 PM

To: Carolyn Shaffer <cshaffer2@albemarle.org>

Subject: Solar

CAUTION: This message originated outside the County of Albemarle email system. DO NOT CLICK on links or open attachments unless you are sure the content is safe.

Hello!

I'm writing to say that as a resident of Albemarle County, an Albemarle High School graduate, and a current Charlottesville small business manager, I'd like to see support for more solar efforts in the area.

Thanks for your time and consideration.

Best,

Emily

From: Jane Zahorik <jzahorik@eastpointenergy.com>
Sent: Tuesday, January 14, 2025 1:40 PM
To: Carolyn Shaffer <cshaffer2@albemarle.org>; Planning Commission
<PlanningCommission@albemarle.org>
Subject: Copy of PC public comment

CAUTION: This message originated outside the County of Albemarle email system. DO NOT CLICK on links or open attachments unless you are sure the content is safe.

Hello,

I plan on giving verbal comments at tonight's Planning Commission meeting, attached is a copy of those comments for the official record.

Thank you,

Jane Zahorik

From: Kelly Hart <peacefulharts@gmail.com>
Sent: Tuesday, January 14, 2025 2:29 PM
To: Carolyn Shaffer <cshaffer2@albemarle.org>
Subject: County Draft Solar Ordinance Public Comment

CAUTION: This message originated outside the County of Albemarle email system. DO NOT CLICK on links or open attachments unless you are sure the content is safe.

To Whom it May Concern:

We are Albemarle County residents and appreciate that the county is transitioning to a renewable energy future. Below are our comments regarding the Draft Solar Ordinance:

1. The Ordinance must be designed in order to meet the County's climate goals.
2. The Ordinance should allow By Right solar up to at least 50 acres in Rural Areas.
3. Allow for increased panel height limits.
4. There should be more flexibility, and clarity, in development requirements.

Respectfully,

Kelly and Charles Hart

1385 Wimbledon Way, Charlottesville, VA 22901

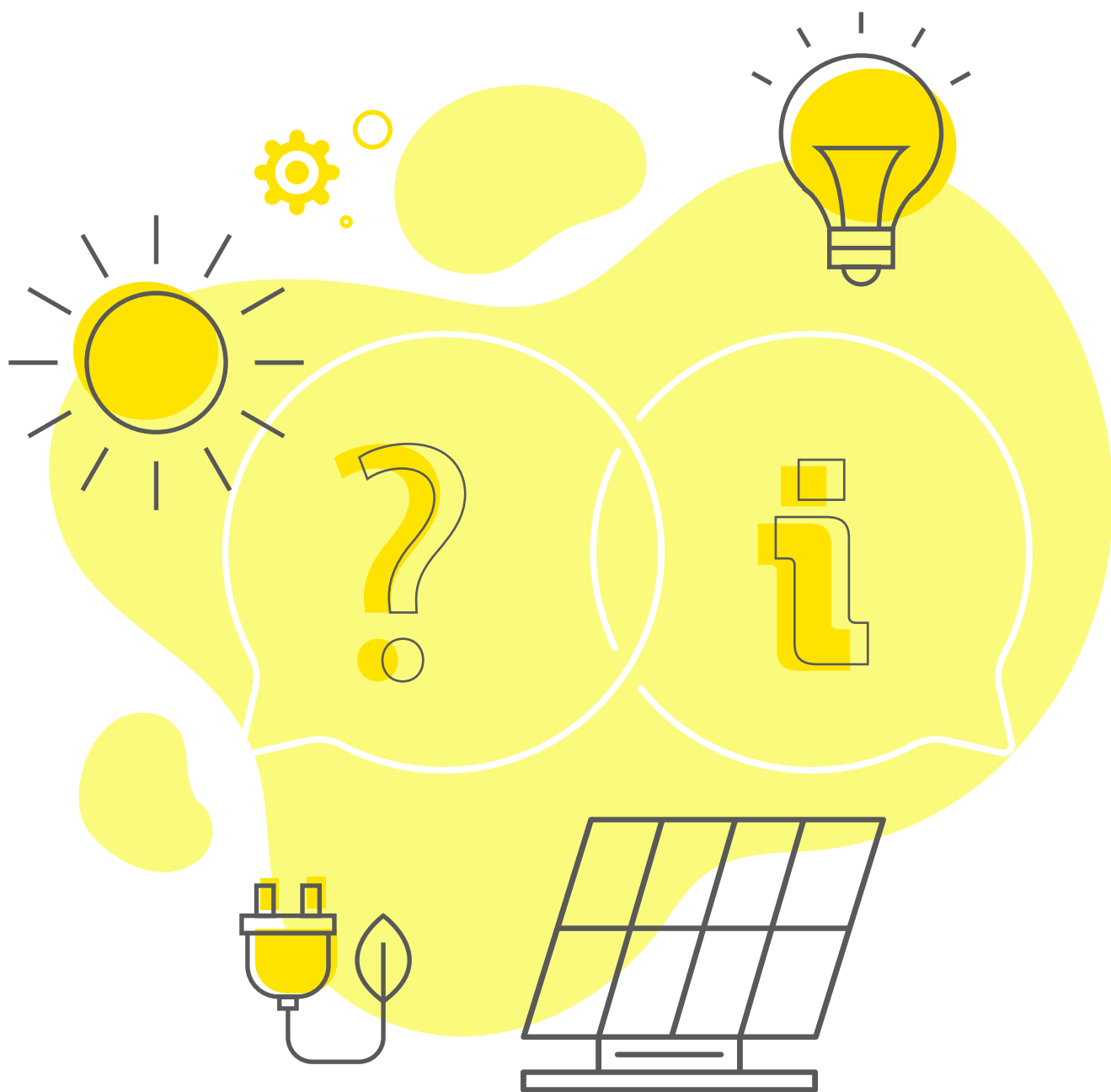
Good evening, my name is Jane Zahorik and I have been a resident of Albemarle County for the past 18 years. I am here tonight to voice my support for the proposed Zoning Ordinance amendments for solar energy and battery storage facilities.

As a young person living in this county and as someone with a passion for clean energy, I care deeply about the steps taken by officials to promote a more sustainable future for the next generation of Albemarle County residents.

I, like many others my age, am not a homeowner which means roof mounted solar is not yet an option for me. A community solar subscription, however, *is* an option- one that would be supported by the passage of a strong solar ordinance.

A common grievance I hear about renewables projects as someone who works in the industry is that they tarnish the natural beauty of the landscape they're built upon. The proposed ordinance takes a proactive approach to this by including specific provisions for setbacks and vegetative screening that are included to preserve the visual aesthetic of the county. I appreciate the holistic approach the county took when drafting this ordinance and believe the guidelines it puts forth promotes nothing but **responsible development**.

Adopting a comprehensive solar & storage ordinance is a critical step in the right direction that must be taken if we are to achieve the goals outlined by the county's Climate Action Plan. I look forward to continue seeing the strides taken to promote local energy generation in Albemarle County and to seeing this ordinance move along in the approval process. Thank you for your time.



COMMUNITY CLIMATE
COLLABORATIVE

Solar Ordinance FAQs

General info FAQ

This FAQ provides an overview of solar photovoltaic (PV) projects in the United States, specifically focusing on technology, environmental impacts, and sizing. It aims to help readers understand the impact that solar ordinances and permitting processes can have on solar development, ultimately arguing for just and streamlined deployment of solar.

Note: This FAQ focuses on solar power and ordinances generally. To learn more about solar energy in Albemarle County, VA specifically, look at the FAQ linked [here](#).

Key Takeaways

1

Solar PV technology is rapidly evolving, with increasing lifespans, efficiency, and grid interconnectivity across the country.

2

Solar PV development is not inherently harmful to human health; solar panel materials are safe and stable, reducing health risks to a minimum.

3

Solar PV development is not inherently harmful to forests and natural areas; the majority of solar projects are not built in forested areas and degraded/infertile land is prioritized.

4

Solar PV systems can vary dramatically in size and type of facility. Which solar facilities best fit depends on many factors, including energy generation goals, cultural attitudes, affordability, feasibility, and the topography of the area.

5

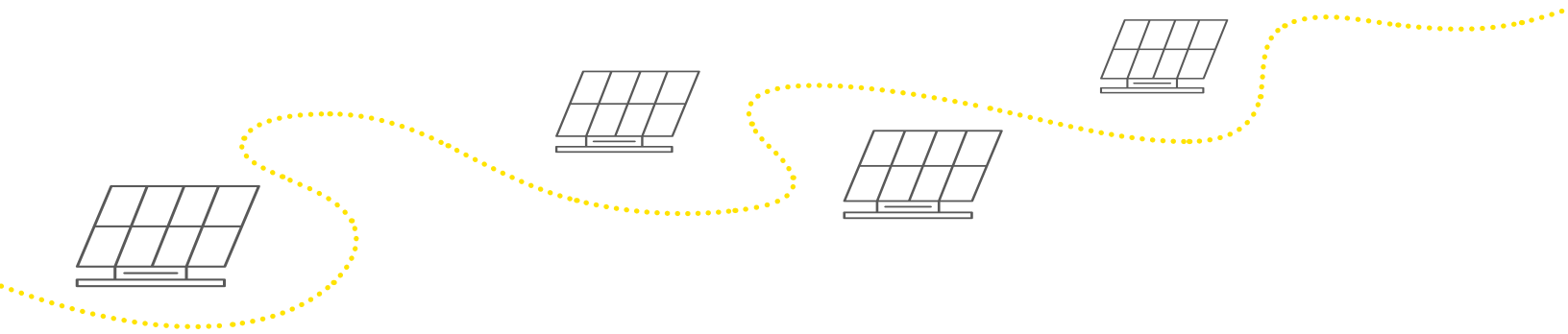
Solar ordinances - which set regulations for streamlining decisions related to solar projects - should be careful to not excessively hinder solar developments. Ordinances are strongest when they balance the need for renewable energy with thoughtful consideration of the environmental and socioeconomic impacts of development.

1. The Basics: What do I Need to Know about Solar Technology?

- **Lifespan:** While it can vary, the average lifespan of a solar panel is usually between 30-35 years ^[1].
- **Placement:** Solar panels can be placed almost anywhere but are usually mounted on buildings - such as rooftops - or on the ground. The most common placements are on top of commercial or residential buildings, parking structures, and land without any structures or buildings.

For bigger solar projects (such as utility-scale developments), which need to be integrated into the regional power grid, siting is usually near or accessible to transmission lines^[2].

- **Night-time and Grid Outages:** If a solar system is equipped with a form of energy storage, it will still be able to provide power both at nighttime or during a wider power outage of the grid. ^[3] ^[4] Improvements to grid integration across the country will increase the ability of solar projects across time zones to provide energy to states where the sun has either already set or not yet risen.



2. Do Solar Energy Systems Create Environmental Impacts and Concerns?

- **Panel Components:** A study from NREL ^[5] found no examples of solar panels for utility-scale development that contain arsenic, gallium, germanium, or hexavalent chromium. Thin cadmium layers - occasionally used in solar panels - have been proven to be stable and solid when encapsulated between thick layers of glass ^[6]. While a project's operation period presents no relevant issues, ensuring adequate solar panel disposal and avoiding cadmium from leaching into landfills ^[7] remains a key issue.
- **Forests:** Most solar projects are not built in areas with native forests or even active commercial forests. Additionally, solar ordinances usually require large vegetative "buffers" and screening, either planting or maintaining existing tree cover ^[8]. Albemarle's Woodridge Solar project, for example, was sited on 1500 acres of land, with solar panels covering 650 acres and 850 acres retained for tree buffers. Additionally, solar projects can aim to pair solar energy

generation with soil restoration. In the Woodridge project developers argued that 80 years of intensive tree farming had resulted in soil depletion and acidification ^[9]. Compared to the carbon emissions reduction benefits of solar energy, the trade-off of converting some timber plantation land to accommodate solar facilities is overwhelmingly a positive step for protecting the environment ^[10].

- **Data-Center Boom:** Data centers are currently causing large, increased demand for electricity, negatively impacting customers and emitting enormous amounts of carbon dioxide (a single data center can consume the equivalent electricity of 50,000 homes) ^[11]. Regulations must be put in place that monitor and address the impacts of data centers on the market and the environment ^[12]. However, while recognizing data center demands of energy and other resources is a serious issue, C3 still calls for the rapid and responsible deployment of clean energy throughout Virginia and the United States. Our desire to better regulate data centers should not slow down or be a reason to question investments in renewable energy sources.

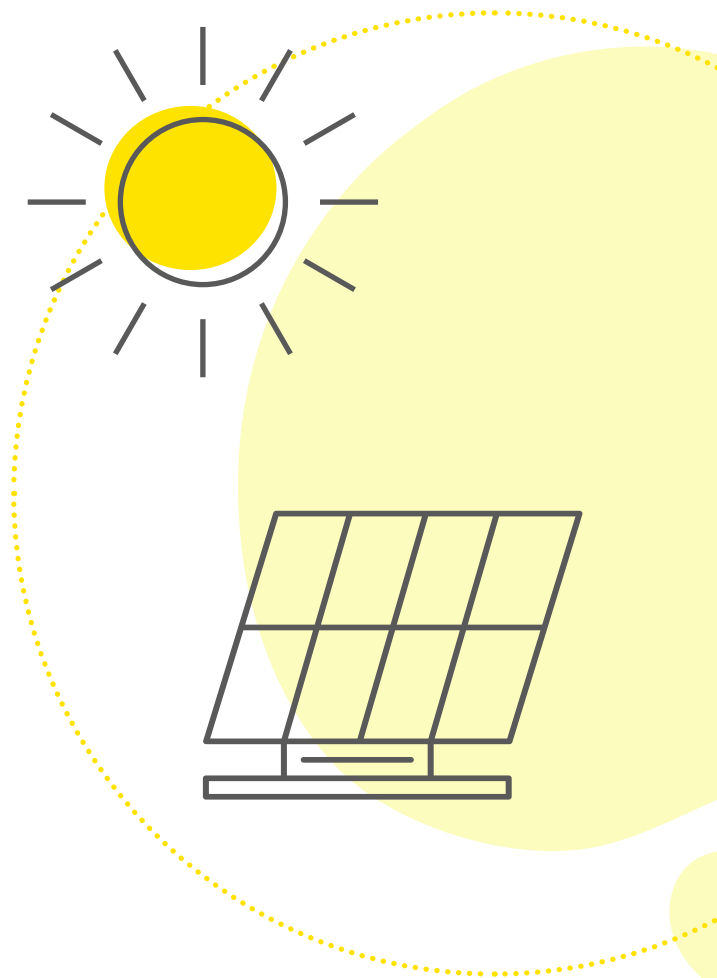
3. A Double-Edged Sword: Do Solar Ordinances Help or Hinder Solar Development?

- **Special Use Permit:** Each zoning district in a municipality has its own set of allowed uses, which are also referred to as by-right. Additional 'special uses' may be allowed in certain zones. For example, if someone wants to open up a corner store in a residential neighborhood, they would need to apply for a "special-use permit" (SUP). The SUP process is usually as follows: Application Submission; Review by the Planning and/or Zoning Department; Public Notification and Input; Advisory Board Review (e.g. Planning Commission); and final approval by a Decision-Making Body (e.g. Board of Supervisors). Considering the lengthy and arduous nature of SUP processes, requiring SUPs for certain projects can slow and even prevent them from being considered in the first place.

- **Solar ordinance basics:** A solar ordinance is a discretionary piece of legislation or change in a county or municipal code that outlines provisions that the relevant authority requires to approve a solar project. The main goal of solar ordinances is to streamline the decision-making governmental bureaucratic process related to approving solar projects. However, whether the end-product of the process is for faster approval or denial of solar projects depends on how the ordinance is shaped. Solar ordinances often include the following: purpose and intent; definitions (e.g. the different types of solar facilities); permitting processes, including by-right and special use; standards such as setbacks, buffers, and height restrictions; environmental considerations; and decommissioning plans. Content varies depending on a community's priorities ^[13].

- **Importance of solar ordinances:** As the impacts of climate change are increasingly felt, C3 strongly believes that solar development offers a potential avenue for not only reducing greenhouse gas emissions but also helping municipalities achieve their climate goals and find the resources for financing a just transition. According to publicly available information regarding the Woodridge Solar project in Albemarle County and insights from industry experts, solar projects can significantly increase county tax revenues between 25-40x their baseline levels, depending on the scale and specifics of the project. Solar ordinances allow community members to have their concerns addressed and set requirements to ensure that only desirable projects take place.

- **Solar ordinances in Virginia:** Nationally, Virginia has a comparatively high number of solar ordinances at the county level with a common tendency to restrict solar development on agriculturally-zoned land ^[14]. While community engagement led by anti-solar advocacy groups has had a strong impact on the shaping of solar ordinances like that of Culpeper County in Virginia, criticism has been made of at least one such group - Citizens for Responsible Solar - for the alleged spreading of disinformation on supposed health risks posed by solar farms. ^[15]



4. What are the Different Types and Sizes of Solar Systems?

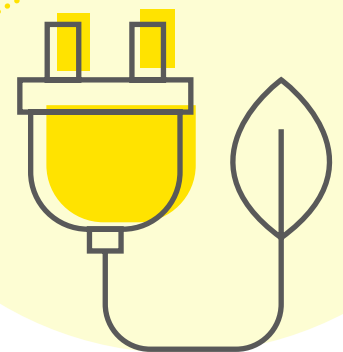
- **System sizes:** A solar project's size is often measured by the system's power capacity, which is typically given either in kilowatts (KW) or megawatts (MW). The greatest possible rate of energy output by the system is referred to as its 'nameplate capacity' and depends on several factors, such as average sunshine. The number of Virginian households that can be powered by 1 MW of solar energy varies from about 110 to 250 according to estimations from the Solar Energy Industries Association (SEIA) and Dominion ^{[16] [17]}. Single-family households will typically need accessory solar facilities of about 7 KW per home ^[18].

- **Accessory Solar Facilities:** Accessory solar facilities incorporate solar panels into existing buildings, operating as an "accessory" to their original use development. These solar facilities are typically located over impervious surfaces and have a nameplate capacity of less than 1MW. Accessory Facilities are either building/roof-mounted or ground-mounted; instead of being mounted on a building or rooftop, ground-mounted solar panels are set up on the ground and are not necessarily immobile ^[19]. Accessory Solar Facilities are usually considered on-site energy generation. Conversely, off-site solar projects (like some distributed solar and all utility-scale) have solar generation being the principal use of the area of land on which they are sited.

- **Small-scale/distributed solar:** While there is no universally applicable definition of the capacity of 'small-scale' or 'distributed' solar generation, C3 supports a definition from pinnacle sources within Virginia for a maximum system capacity of 5 MW when defining small-scale solar, which also sets the minimum threshold for utility solar ^{[20] [21]}. Distributed solar PV systems are small-scale solar power systems where the energy generated is either used on-site or contributed to the local grid via distribution lines. Distinct from utility-scale projects, distributed projects are not connected to transmission lines and, therefore, produce energy that is locally consumed by the community where the project is sited. While there is no precise and universal maximum capacity for distributed systems, sources frequently identify a maximum size of 5 MW ^{[22] [23]}.

- **Community/shared solar:** A 'shared solar' project is a type of small-scale (5 MW or less) facility where electricity users within a certain region can buy in or subscribe to a portion of the energy generated by a solar array ^[24]. These purchasing programs increase equal access to the economic and environmental benefits of solar energy generation for those who are not in a position to install solar panels on their roof or business ^[25]. In Virginia, the state's Shared Solar program ^[26] requires that at minimum, 30 percent of subscribers must be low-income. As such, municipalities that prioritize the development of small-scale solar projects are likely to increase their residents' access to cheaper, cleaner energy through community solar programs.

- **Large/utility-scale solar:** A utility-scale solar facility generates solar power and feeds it into the regional power grid via transmission lines. What distinguishes utility-scale from small-scale or distributed solar generation is both the project size, with numerous sources within Virginia defining utility solar facilities as being any solar facility with a capacity greater than 5 MW ^{[27] [28] [29]} and most importantly the fact that the electricity is sold to the wholesale regional power market. These projects require connection to transmission centers and operate as independent power producers (IPPs) under long-term power purchase agreements (PPAs) with utilities or other off-takers.

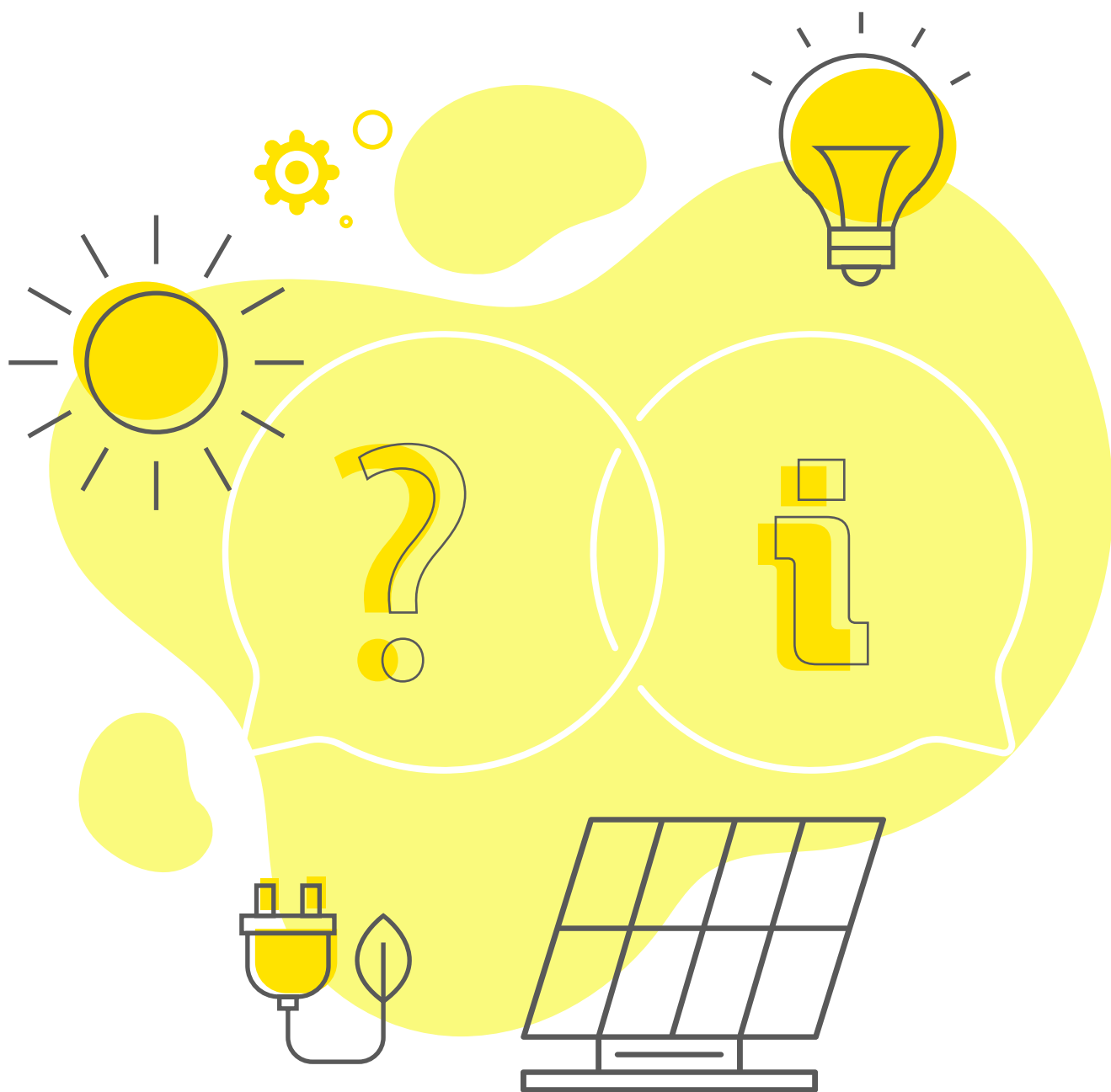


SOURCES

- [1] Department of Energy, "End-of-Life Management for Solar Photovoltaics". Available at: <https://www.energy.gov/eere/solar/end-life-management-solar-photovoltaics>.
- [2] Palmetto (2021), "How Solar Power and the Grid Work Together". Available at: <https://palmetto.com/learning-center/blog/how-solar-power-and-the-grid-work-together>.
- [3] Andy Sendy (2024), "Do Solar Panels Work on Cloudy Days or at Night?". Available at: <https://www.solarreviews.com/blog/do-solar-panels-work-on-cloudy-days-or-at-night>
- [4] Sara Wolf, "Will Solar Panels Work During a Power Outage?". Available at: <https://www.paradisepowerenergy.com/blog/will-solar-panels-work-during-a-power-outage>.
- [5] Heather Mirlitz, Henry Hieslmair, Silvana Ovaitt, Taylor L. Curtis & Teresa M. Barnes (2023), "Unfounded Concerns about Photovoltaic Module Toxicity and Waste are Slowing Decarbonization". Available at: <https://www.nature.com/articles/s41567-023-02230-0.epdf>.
- [6] Vasilis Fthenakis & Ken Zweibel (2003), "CdTe PV: Real and Perceived EHS Risks". Available at: <https://www.nrel.gov/docs/fy03osti/33561.pdf>
- [7] EPA, "End-of-Life Solar Panels: Regulations and Management". Available at: <https://www.epa.gov/hw/end-life-solar-panels-regulations-and-management>.
- [8] Matthew Eisensohn (2022), "Solar panels reduce CO2 emissions more per acre than trees – and much more than corn ethanol". Available at: <https://blogs.law.columbia.edu/climatechange/2022/10/25/response-to-the-new-york-times-essay-are-there-better-places-to-put-large-solar-farms-than-these-forests/>.
- [9] Livable Cville (2022), "Woodridge Solar Questions & Answers". Available at: <https://static1.squarespace.com/static/62ceefa4837c2873ece8af3b/t/63ae0fedba46ff6d065559b/1672351725493/woodridge-solar-faq-by-livable-cville.pdf>.
- [10] Eric Ralls (2023), "Which is better – planting forests or building solar farms?". Available at: <https://www.earth.com/news/which-is-better-planting-forests-or-building-solar-farms/>.
- [11] Stephen Gonzalez Monserrate (2022), "The Staggering Ecological Impacts of Computation and the Cloud." Available at: <https://thereader.mitpress.mit.edu/the-staggering-ecological-impacts-of-computation-and-the-cloud/>.
- [12] Jacob Roundy (2023), "Assess the environmental impact of data centers." Available at: <https://www.techtarget.com/searchdatacenter/feature/Assess-the-environmental-impact-of-data-centers>.
- [13] C3 original research on structures of ordinances in California, Virginia and South Carolina (2024). More information is available on request.
- [14] NREL (2022), "U.S. Solar Siting Regulation and Zoning Ordinances [data set]". Available at: <https://data.openei.org/submissions/5734>.
- [15] Miranda Green, Michael Copley & Ryan Kellman (2023), "An activist group is spreading misinformation to stop solar projects in rural America". Available at: <https://www.npr.org/2023/02/18/1154867064/solar-power-misinformation-activists-rural-america>.
- [16] SEIA (2024), "What's in a Megawatt?". Available at: <https://www.seia.org/initiatives/whats-megawatt>.
- [17] Felicity Taylor (2023), "Dominion building solar farm on Ivy landfill". Available at: <https://www.cbs19news.com/story/49266226/dominion-building-solar-farm-on-ivy-landfill>.
- [18] Sarah Lozanova (2023), "Installing Solar Panels In Virginia". Available at: <https://www.greenlancer.com/post/post-going-solar-in-virginia>.
- [19] SEIA, "Rooftop Solar". Available at: <https://www.seia.org/initiative-topics/rooftop-solar>.
- [20] Nicole Vaughan (2024), "RECAP: CLEAN ENERGY & CLIMATE POLICY FROM THE 2024 GENERAL ASSEMBLY SESSION". Available at: <https://vcnva.org/energy-policy-recap-2024/>
- [21] Virginia Dept of Energy (2022), "Virginia Solar Energy". Available at: https://energy.virginia.gov/renewable-energy/documents/VASolarSurvey_ReportofResults_FINAL.pdf.
- [22] State of Maine (2019), "S.P. 565 - L.D. 1711 An Act To Promote Solar Energy Projects and Distributed Generation Resources in Maine". Available at: <https://www.mainelegislature.org/legis/bills/getPDF.asp?paper=SP0565&item=4&snum=129>.
- [23] Aftab Raza (2023), "Distributed Solar: An Overview". Available at: <https://www.linkedin.com/pulse/utility-scale-solar-vs-distributed-overview-aftab-raza-gizfe>
- [24] Nicole Vaughan (2024), "RECAP: CLEAN ENERGY & CLIMATE POLICY FROM THE 2024 GENERAL ASSEMBLY SESSION". Available at: <https://vcnva.org/energy-policy-recap-2024/>.
- [25] Department of Energy, "Community Solar Basics". Available at: <https://www.energy.gov/eere/solar/community-solar-basics>.
- [26] Code of Virginia, "Sec. 56-594.3. Shared solar programs". Available at: <https://law.lis.virginia.gov/vacode/title56/chapter23/section56-594.3/>.
- [27] Virginia Dept of Energy (2022), "Virginia Solar Energy". Available at: https://energy.virginia.gov/renewable-energy/documents/VASolarSurvey_ReportofResults_FINAL.pdf.
- [28] Nicole Vaughan (2024), "RECAP: CLEAN ENERGY & CLIMATE POLICY FROM THE 2024 GENERAL ASSEMBLY SESSION". Available at: <https://vcnva.org/energy-policy-recap-2024/>.
- [29] Code of Virginia, "9VAC15-60-20. Authority and applicability". Available at: <https://law.lis.virginia.gov/admincode/title9/agency15/chapter60/section20/>



COMMUNITY CLIMATE
COLLABORATIVE



COMMUNITY CLIMATE
COLLABORATIVE

Solar Ordinance FAQs

Albemarle County FAQ

In early 2024, Albemarle County released a draft of the County's first ever solar ordinance for public feedback and review. The updated draft, which is anticipated to differ significantly from the first draft, is expected for release before the end of December 2024, and will go before the County Planning Commission in early 2025, with the opportunity for public comment.

This FAQ is designed to help community members understand the details and nuances of solar development in Albemarle County, and underscores priorities that C3 believes was missing from the County's first draft solar ordinance. It focuses on streamlining permitting processes, the concept of historic and scenic resource preservation, and land use concerns.

Key Considerations

1

There is no universal definition for small vs large-scale solar facilities. C3 supports the definition of small-scale/distributed solar as being any facility below 5 MW that can be connected directly to a distribution center and considers all large-scale/utility solar as 5MW or more, requiring connection to a transmission line.

2

The County must specify how Entrance Corridor Guidelines will affect solar development and plan to mitigate associated potential impacts, such as delays in the permitting process, increased costs, and confusion over design requirements.

3

Prioritization of undefined impacts on subjective "viewsheds" and historic resources risks both hindering solar development and excluding significant portions of the community. The County must better define and plan for the potential impact that prioritizing scenic and historic resources - which should include diverse, multicultural perspectives - may have on much-needed solar development.

4

Solar development is not inherently harmful to those who work on or gain financial benefit from agricultural land; solar utilities can improve the livelihoods of farmers through adding significant passive income, as well as agricultural workers who are concurrently feeling the effects of economic pressures on farm owners. Just transition principles ensure that no one is "left behind" as new technologies emerge.

Limit Potential Restrictions on Small-Scale Solar Facilities

1. How does the Albemarle County currently define different solar project sizes?

- **Small-scale/distributed:** The original Albemarle County Draft Solar Ordinance defined small-scale solar facilities as having a capacity of less than one megawatt (1 MW), which is much smaller than the 5 MW threshold identified by the State of Virginia ^[1].

C3 supports a definition of 'distributed' and 'small-scale' solar as being any facility below 5 MW, as these do not require connection to a transmission line ^[2].

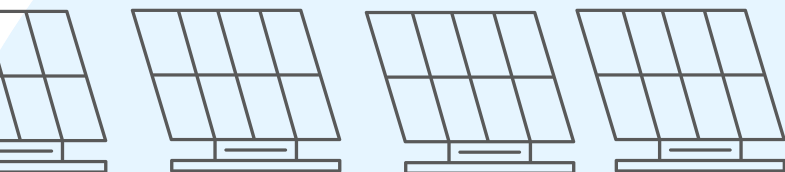
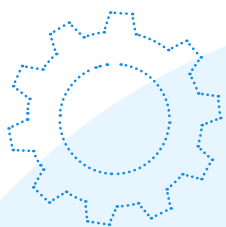
- **Large/utility-scale:** The original Albemarle County Draft Solar Ordinance defined utility-scale solar projects as having a capacity of one megawatt (1 MW) or greater, which again is a much lower threshold than the State definition of projects with 5 MW or greater capacity ^[3].

C3 supports a definition that considers all utility solar projects as those with a capacity of 5 MW or more and requiring direct connection to a transmission line ^[4].

2. What impact can project size definitions have on small-scale solar facilities?

- **Currently, the County imposes the same bureaucratic requirements** on small-scale projects (from 1 MW capacity and upward) as those that are imposed on what is widely considered to be utility-scale projects ^{[5][6][7]}. If this is upheld in a solar ordinance, it will have the tacit consequence of restricting solar development to only developers able to pay the 'soft costs' associated with the application process for solar development. These costs include permitting, financing, and solar equipment installation, and are often associated with navigating bureaucratic red tape.

- **The "soft costs" of solar projects represent, on average, 8% of the costs of implementing solar development,** but the U.S. Department of Energy has further found ^[8] that "soft costs are driven up when processes for going solar are slow or inefficient". Smaller solar developers in the region believe that the time-consuming and costly permitting requirements in the draft solar ordinance will hinder the growth of smaller solar facilities. By allowing small-scale solar by right in most zoning districts, the County can help developers avoid these cost-prohibitive measures.



Clarify Entrance Corridor and ARB Requirements

3. What are Entrance Corridors?

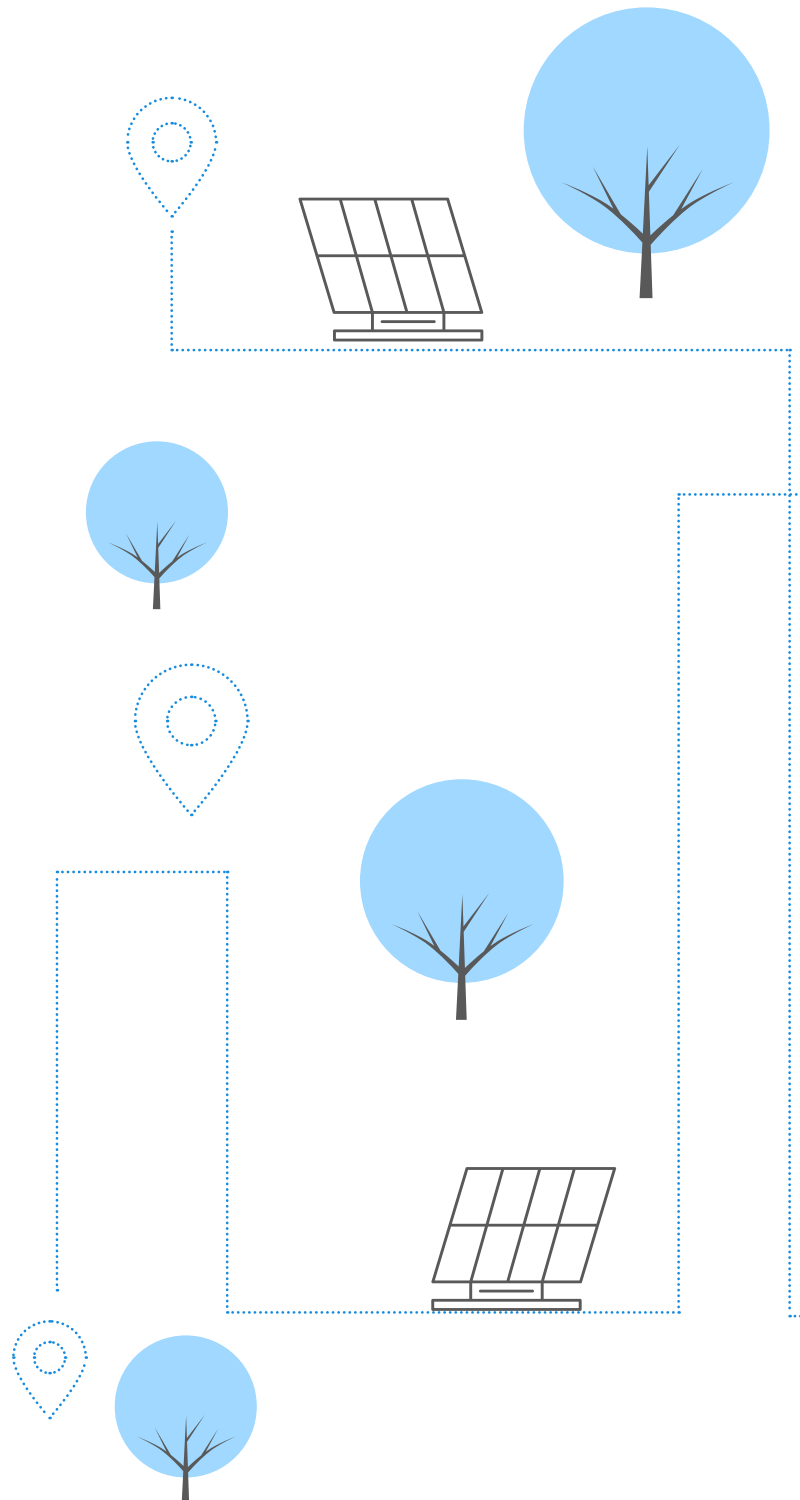
Entrance Corridors are defined as “arterial streets and highways found to be significant routes of tourist access to the County and to designated historic landmarks, structures or districts within the county or in contiguous localities...”^[9]. As such, they are expected to be orderly, attractive, and complimentary to the historical character of an area.

4. What is the Albemarle County Architectural Review Board (ARB)?

The ARB is a County body charged with the responsibility of regulating the design of development within the County’s Entrance Corridors (ECs). When a new development occurs within ECs, the ARB ensures that it reflects the traditional architecture of the area and fulfills the outlined design guidelines^[10].

5. How could ARB guidelines restrict solar in Entrance Corridors?

Since Albemarle County ARB has yet to publish guidelines or recommendations to outline whether solar facilities are aesthetically or culturally compatible with ECs, there is concern that developers may run into pushback. By sharing design recommendations, for example, the County can avoid lengthy approval processes for solar while still maintaining its desired historical integrity.



Establish Clear Metrics for Visual Impact and Cultural Integrity

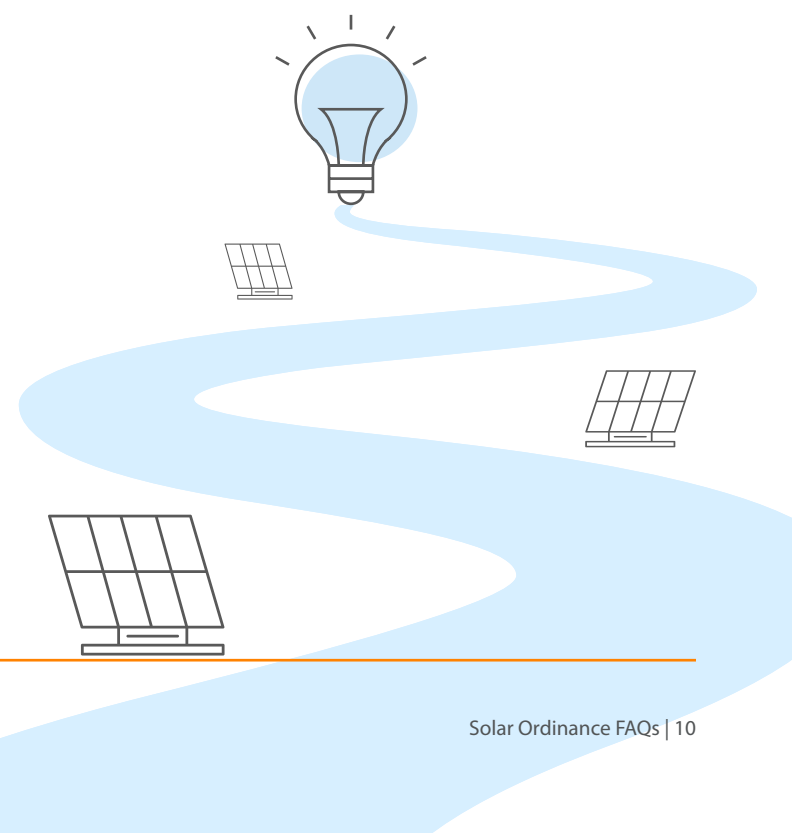
6. What is a viewshed?

A viewshed is the view of an area from a specific vantage point. In the context of solar, this refers to how the overall view of an area or landscape might be affected by the construction of a solar project. It is a particularly contentious concept given its subjective nature - one person's opinion of the essential "character" of an area can vary wildly from another with a different background or from a different demographic group. C3 believes that decisions involving viewshed decision-making must be derived from a proportional consensus of County residents, rather than placating a vocal minority of affluent individuals. This comes into play, for example, when a farmer intends to lease a section of their farm for use as a solar development, but small special interest groups show up consistently to (generally sparsely attended) local meetings in opposition to allowing a special use permit ^[11].

As a result, regardless of the farmer's desire or intention to continue farming that land or not, or the right to pursue additional beneficial revenue streams on their land, a small group can successfully use the contested concept of the public value of a desired viewshed to block much-needed solar development. This trend calls into question whose values and scenic views are being prioritized in solar development processes, and the role of public entities in regulating them.

7. Could the preservation of Albemarle County's historic and scenic resources impede solar development?

The protection and preservation of Historic, Scenic, and Cultural Resources is a key priority outlined in the County's 2015 Comprehensive Plan and AC44 update. These resources range from buildings, farms, and statues to state and national-designated scenic roads, Entrance Corridors, and important viewsheds. ^[12] The County has yet to establish how or to what extent the steward of historic and cultural resources would interact with decisions regarding solar projects, and establish metrics for determining how "detrimental" (or beneficial, given the subjectivity of the topic) solar projects would be to said resources ^[13].



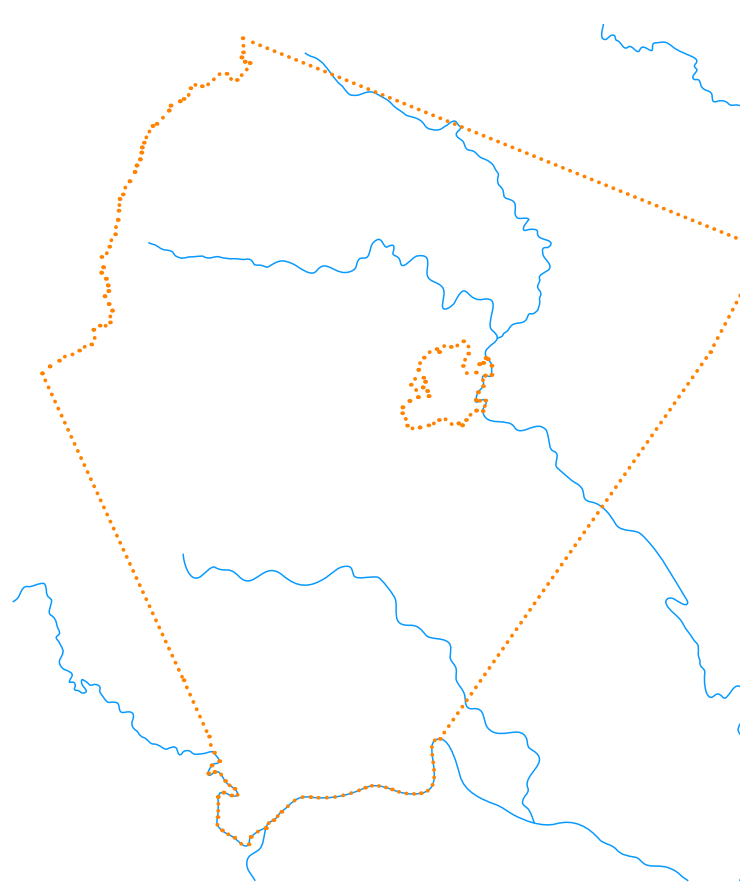
Identify Priorities for Land Use Changes

8. What are Albemarle County's different types of land use?

Different zoning laws dictate how a parcel of land can be used depending on its location. Albemarle County is split into five Development Areas (approximately 5% of the County) and Rural Areas (approximately 95% of the County). In the Development Areas, zoning types include new residential, commercial, retail, office, industrial, and mixed-use development. In Rural Areas, land use is projected to remain mostly agricultural (such as farming) or related to forestry (such as logging).^[14]

9. How is land use related to and how does it affect solar development?

If solar development is not guaranteed by right in a certain zoning district, a change in land use or a special use permit is required to build there. Land historically zoned for agriculture can be ideal for the development of a solar facility, such as on a reasonably large and mostly flat expanse of land that has full exposure to the sun throughout the day.^[15] National special interest groups aimed at restricting solar development (such as Citizens for Responsible Solar) often enter into a community where a solar utility is being planned to organize a protest against the land use change on the grounds of preventing an aesthetic character shift.^[16]



10. What is a reasonable estimate of the maximum surface area in Albemarle County that might be used to accommodate solar systems?

This very complex question requires some more in-depth analysis before it can be answered.

- **Renewable energy capacity needs in Virginia by 2050:** The Virginia Clean Economy Act (VCEA) establishes that VA's power grid must become carbon neutral by 2050; achieving this goal by then requires Virginia to host a power capacity of over 40 GW of wind and solar and over 20 GW of battery storage^[17].
- **Solar energy capacity per acre:** The generation of 1 MW of solar energy at a utility-scale site requires between 5 and 10 acres of surface area^[18]. In the case of Albemarle's Woodridge project - a 138 MW utility-scale facility - is sited on approximately 650 acres (or 1,500 acres, when considering the buffer areas), achieving a rate of 1 MW per 4.7 acres (or 1 MW/10.87 acres if the project's vegetative buffers are included)^[19].

- **Albemarle’s “Fair Share”:** Albemarle County’s land area of 461,120 acres represents about 1.8% of Virginia’s total, and the County’s proportionate renewable energy capacity of Virginia’s 40 GW would be about 0.72 GW (or 720 MW). Even if all of the County’s renewable energy capacity comes from solar - including on-site and off-site - it would be no more than approximately 7,200 acres (720*10), or roughly 1.6% of the County’s land.

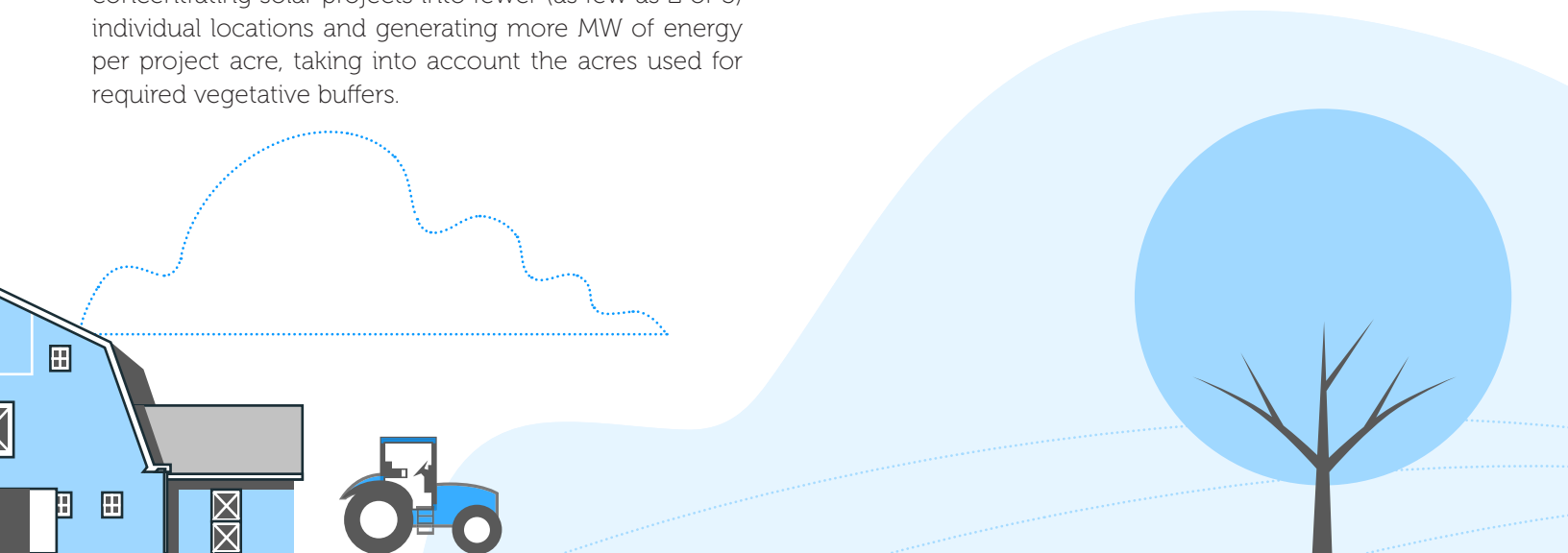
- **Where Would Albemarle’s “Fair Share” Come From:** Considering the very optimistic scenario where 100% of the County’s eligible buildings accepted and installed solar panels on their roofs, the maximum rooftop solar energy generation possible in the County is around 243 MW ^[20]. Knowing, for example, that the Woodridge Solar project alone is expected to have a nameplate capacity of 138 MW, this leaves a remaining 339 MW (720 MW - 243 MW - 138 MW) to meet the 720 MW goal. As such, while creating favorable conditions for on-site solar generation, Albemarle County must plan to host more off-site solar generation for at least an additional 339 MW. The good news is that it would require about 3,390 surface acres, or just 0.7% of the County’s area.

- **Main Considerations for Siting 339 MW of Off-Site Solar:** Among the advantages of distributed, small-scale systems (i.e. those below 5 MW), they do not require proximity to transmission lines, and do not have the same need for major land sites as utility-scale solar systems; they also ensure that energy generation will be consumed locally while having smaller viewshed impacts. On the other hand, at least 68 individual small-scale facilities would be required to generate 339 MW, resulting in a greater number of viewsheds being impacted and higher occurrences of land use conversion. Utility-scale solar, in contrast, provides economies-of-scale benefits, concentrating solar projects into fewer (as few as 2 or 3) individual locations and generating more MW of energy per project acre, taking into account the acres used for required vegetative buffers.

11. Will solar development harm the livelihoods of people working on or gaining financial benefits from agricultural land?

For reasons entirely unrelated to solar development, smaller farms are facing numerous pressures to their traditional industry, resulting from suburban development pressure, weakened farm viability, and the challenges of transferring land to a new generation ^[21]. Consistently-cited reasons for farmers to lease parcels to solar companies are that it has become impossible for them to make ends meet purely through farming alone, that they need passive income for retirement, and that they want to avoid having to sell off a parcel of land from their family farm (especially for suburban development). To that end, solar development can drastically improve both the livelihoods of farmers through the provision of significant additional passive income as well as agricultural workers who are also feeling the effects of the economic pressures on farm owners ^{[22] [23]}.

C3 believes that solar development offers significant just transition opportunities to those currently within the agricultural sector. As economies shift towards being more sustainable and low-carbon, a just transition refers to place-based principles and processes that consider community welfare and agency, workers’ rights, and related socioeconomic impacts ^[24]. A just transition, for example, would ensure that in the context of land-use change from agricultural to solar, local workers would be prioritized to receive the necessary job training, resources, and rights to work in the emerging energy landscape, and that tax revenue from the new facility would be earmarked to benefit the local workforce.



12. Can a solar ordinance prevent a landowner from leasing their land to solar developers?

Solar ordinances cannot directly prevent a leasing agreement between a landowner and a solar developer, but they can create conditions that act as an insurmountable barrier to solar development on a parcel of land. The impact of a lengthy or extremely restrictive process could have the tacit effect of preventing the lease, as the developer may be discouraged from even applying, and the landowner may back out of an arduous and uncertain prospect ^[25].

13. Is it possible to promote solar while protecting Albemarle County's forests and natural resources?

Firstly, it is important to commend Albemarle County's exemplary work in stewarding its natural resources with legal agreements with private parties, which generously granted conservation easements at an approximate value of \$X million per year, helping to secure over 110,000 acres of land (about a quarter of the County's surface) and help prevent development on more of its forests and natural resources than any other locality across the whole of Virginia ^[26].

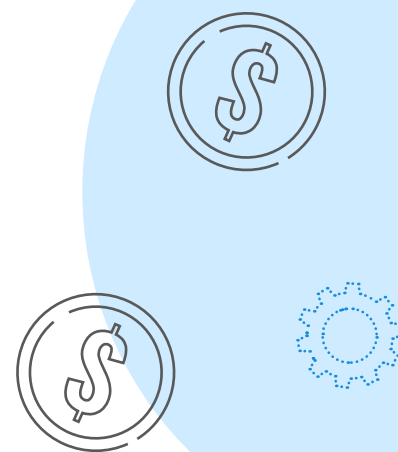
Strong solar ordinances allow for both clarity and nuance in each unique solar development that will ensure the project is protecting the environment in which it is situated - both by replacing fossil fuel energy and by responsible land stewardship. Additionally, by allowing Accessory and Small-Scale facilities by right in these zoning districts in order to streamline the approval of solar projects in Development Areas and Entrance Corridors, the County has the potential to increase solar generation in non-forested areas.

14. How do solar projects produce local tax revenue or other financial benefits?

Virginia state law vests in local governments the explicit authority to either collect taxes or exempt solar facilities with a nameplate generation of less than 25kW from local taxation. ^[27] Virginia State Code permits local authorities to require revenue sharing up to \$1,400 per megawatt produced, "as measured in alternating current (AC) generation capacity of the nameplate capacity of the facility based on submissions by the facility owner to the interconnecting utility" ^[28]. While the ultimate increase of tax revenue per acre is case-specific, it can be quite dramatic; on one project, a Virginia solar developer reported estimates of a 40x increase in tax revenue per acre as a result of installing a solar facility ^[29].

15. What is energy justice? What types of energy justice projects could the County invest in?

Energy justice refers to the goal of making energy accessible, affordable, clean, and democratically managed for all communities ^[30]. It aims to remediate the social, economic, and health burdens on those disproportionately harmed by the energy system. Examples of energy justice projects include mapping and addressing energy burdens, and installing energy-efficient appliances in homes.



SOURCES

- [1] Virginia Dept of Energy (2022), "Virginia Solar Energy". Available at: https://energy.virginia.gov/renewable-energy/documents/VASolarSurvey_ReportofResults_FINAL.pdf.
- [2] C3 solar energy FAQ for Albemarle County (2024). Available on request.
- [3] Virginia Dept of Energy (2022), "Virginia Solar Energy".
- [4] C3 solar energy FAQ for Albemarle County (2024). Available on request.
- [5] Nicole Vaughan (2024), "RECAP: CLEAN ENERGY & CLIMATE POLICY FROM THE 2024 GENERAL ASSEMBLY SESSION". Available at: <https://vcnva.org/energy-policy-recap-2024/>.
- [6] Code of Virginia, "9VAC15-60-20. Authority and applicability". Available at: <https://law.lis.virginia.gov/admincode/title9/agency15/chapter60/section20/>
- [7] Virginia Dept of Energy (2022), "Virginia Solar Energy". Op cit.
- [8] Department of Energy, "Solar Soft Cost Basics". Available at: <https://www.energy.gov/eere/solar/solar-soft-costs-basics>.
- [9] AC Code of Ordinances, Sec. 30.6. Available at: https://library.municode.com/va/albemarle_county/codes/code_of_ordinances?nodeId=CH18ZO_ARTIIIDIRE_S30OVDI_S30.6ENCOOVDIC.AD10-3-90.
- [10] Albemarle County (2011). "Albemarle County Architectural Review Board Design Guidelines." Available at: <https://www.albemarle.org/home/showpublisheddocument/272/637202458270770000>.
- [11] Minor Sinclair & Noah Sachs (2024). "Commentary: Resistance to solar farms is holding Virginia back". Richmond-Times Dispatch.
- [12] Albemarle Comprehensive Plan, "Sec. 5.1 Historic, Cultural and Scenic Resources".
- [13] Albemarle County (2023). "Historic, Scenic, and Cultural Resources - AC44 Draft Goals and Objectives." Available at: <https://engage.albemarle.org/ac44-phase-2-historic-scenic-and-cultural-resources>.
- [14] Albemarle County Land Use Buildout Analysis (2022).
- [15] Department of Energy, "Farmer's Guide to Going Solar". Available at: <https://www.energy.gov/eere/solar/farmers-guide-going-solar>.
- [16] Citizens for Responsible Solar, "Culpeper County's Story". Available at: <https://www.citizensforresponsiblesolar.org/culpeper-history-opposition>.
- [17] Virginia Clean Economy Act (2020). Available at: <https://energy.virginia.gov/renewable-energy/documents/VCEASummary.pdf>.
- [18] SEIA, "Land Use & Solar Development". Available at: <https://www.seia.org/initiatives/land-use-solar-development>.
- [19] Woodridge Solar (2023). "Frequently Asked Questions." Available at: <https://www.woodridgesolar.com/faqs>.
- [20] Project Sunroof (2019), "Estimated rooftop solar potential of Albemarle County, VA". Available at: https://sunroof.withgoogle.com/data-explorer/place/ChIJ2yurpXqMs4kR_ssh-2fPDwY/.
- [21] American Farmland Trust (2020), "Farms Under Threat: The State of the States". Available at: https://s30428.pcdn.co/wp-content/uploads/sites/2/2020/09/AFT_FUT_StateoftheStates_rev.pdf, p3.
- [22] Daniel Walton (2024), "Micro Solar Leases: A New Income Stream for Black Farmers in the South?". Available at: <https://civileats.com/2024/02/14/micro-solar-leases-a-new-income-stream-for-black-farmers-in-the-south/>.
- [23] Paula Christian (2023), "Solar boom divides communities, as farmers decide if leasing land is worth risking wrath of neighbors". Available at: <https://www.wcpo.com/news/local-news/i-team/solar-boom-divides-communities-as-farmers-decide-if-leasing-land-is-worth-risking-wrath-of-neighbors>.
- [24] Climate Justice Alliance (2019), "Just Transition - A Framework for Change." Available at: <https://climatejusticealliance.org/just-transition>.
- [25] Leyline Renewable Capital, "The Growing Impact of Delays on Solar Development Costs across Different Regions". Available at: <https://www.leylinecapital.com/news/the-growing-impact-of-delays-on-solar-development-costs-across-different-regions>.
- [26] Piedmont Environmental Council [2023], "Eleven properties protected in Albemarle County". Available at: <https://www.pecva.org/region/albemarle-charlottesville-region/eleven-properties-protected-in-albemarle-county/>.
- [27] Code of Virginia, Sec. 58.1-3661 "(Effective January 1, 2023) Certified solar energy equipment, facilities, or devices and certified recycling equipment, facilities, or devices". Available at: <https://law.lis.virginia.gov/vacode/title58.1/chapter36/section58.1-3661/>.
- [28] Code of Virginia, Sec. 58.1-2636 "Revenue share for solar energy projects and energy storage systems". Available at: <https://law.lis.virginia.gov/vacode/title58.1/chapter26/section58.1-2636/>.
- [29] C3 correspondence with Virginia solar developer. More information available on request.
- [30] Initiative for Energy Justice (2019), "Section 1 – Defining Energy Justice: Connections to Environmental Justice, Climate Justice, and the Just Transition." Available at: <https://iejusa.org/section-1-defining-energy-justice/>.



January 13, 2025

Dear Albemarle County Planning Commission, Director of Planning Michael Barnes, Development Process Manager Bill Fritz, and County Climate Protection Team –

Thank you all for your continued efforts to make the Albemarle County solar ordinance as strong as it can be. At C3, we continue to be focused on our mutual goal of deploying solar energy rapidly, responsibly, and equitably in order to meet Albemarle's climate goals and address the climate crisis. We are pleased to see that the County's revised draft solar ordinance moved closer to the goal of striking a balance between addressing community concerns and enabling the development of clean energy sources that are urgently needed.

The revised ordinance recognizes the need for fewer restrictions on solar development in the County by expanding by-right solar, adjusting permitting standards based on project size and location, and removing requirements for burdensome assessments, all while still including a comprehensive decommissioning plan to avoid hazardous waste and environmental harm.

However, further revisions are needed to enable clean energy development in the County, particularly for smaller-scale and community solar projects that face higher financial constraints.

Specifically, we urge you to consider the following feedback:

Align Solar Development with Albemarle County's Climate Goals and Plan

In recent years, through its climate goals and Climate Action Plan, Albemarle County has committed to promoting and investing in renewable energy infrastructure, addressing climate change head-on. C3 recommends that the County conduct a comprehensive evaluation to determine Albemarle's solar generation realistic potential and requirements for meeting its 2030 and 2050 climate goals and plan for timely project development accordingly.

Further Streamline Small-Scale and Community Solar

There are relatively few viable sites for utility-scale solar in the County. Enabling smaller solar projects will be essential for meeting Albemarle County's climate goals, as well as the [State's long-term vision of increasing shared and community solar](#).

C3 recommends the following:

- ***Increase the panel zone permitted by right.*** Roughly 50 acres of panel zone are needed for projects up to 5 MW (community solar is usually 3-5 MW). 50 acres would

also align more closely with State policy, which includes [additional PBR requirements](#) starting at projects over 5MW.

- This could reduce barriers to the expansion of shared/community solar in Albemarle County, potentially bringing cost savings and localized generation to low-income residents.
- This would also allow for farmers - who are facing enormous economic pressures - to much more easily diversify their economic pursuits on their own land by developing a small distributed or community solar facility, preventing parcel fragmentation and keeping farms open.

Increase Clarity and Flexibility in Development Requirements

- **The County should prioritize projects with co-benefit commitments, without being overly prescriptive about how to do that** (i.e. only focusing on Pollinator Smart status). Other benefits to prioritize include providing low-cost energy options for low-income residents, creating local jobs and offering workforce development, and other beneficial land uses like agrivoltaics.
- **Encourage rather than *require* Gold Certified Pollinator Smart status for by-right projects, and increase flexibility for large projects.**
 - By-right solar projects should not be held to a high standard that is not applied to other development types.
 - The County can create more flexibility and reduce financial burden while still prioritizing projects that create pollinator habitat.
 - For large projects, it can be very difficult to meet gold standard pollinator requirements across the whole site - allowing for a percentage of the site to meet the requirements would be more reasonable.
 - Pollinator-friendly solar has higher and more variable upfront costs.
 - Achieving the Gold Certified Pollinator Smart status can make it more challenging to meet stormwater management requirements for permanent vegetative cover.
 - Best use of preserving land is often to leave trees, and that may conflict with the most stringent pollinator requirements. The County should allow for prioritization of existing trees and natural environment, agrivoltaics, OR pollinators.
- **Increase panel height limit on tilt from 10 ft.**
 - Higher panels are often needed for agrivoltaics (and some native pollinator-friendly plants).
 - Bifacial modules may require more height.
- **Reduce and clarify screening requirements (sec. 5.1.65, para. 11.) for larger solar projects**
 - Providing miles' worth of evergreen trees for large projects would be financially burdensome, and the setback requirements serve a similar purpose in avoiding the disturbance of nearby properties.

- It is unclear whether the agent-approved list of species referenced in the ordinance would be distributed ahead of time and how many different species are required, putting the burden on developers to source compatible plantings.
- **Clarify and revise setback requirements for single projects.**
 - Under Setbacks, Sec 5.1.65(a)2, the ordinance states that setback standards do not apply to common ownership. The definition of “common ownership” should be clarified to include a common operator, as solar development projects often work with multiple landowners.
 - The setback requirements should be reduced to 50 feet for smaller shared/community solar projects to enable their development on smaller pieces of land.
- **Create an explicit pathway to allow for essential portions of energy facilities to cross riparian buffers, wetlands and floodplains if necessary.**
 - Energy Facility Siting, Sec 5.1.65(a)8 does not allow any part of an energy facility to be located in riparian buffers, wetlands, or floodplains. Development in these areas should be avoided as much as possible, but there should be a clear avenue for specific exceptions (with appropriate permits) to enable solar development.
- **Provide flexibility and clarity around financial requirements for decommissioning.**
 - The language in section 4 para. V should be strengthened to ensure that multiple forms of surety are accepted, as putting all decommissioning costs in escrow upfront would be highly burdensome.

Thank you for your time and consideration.

Sincerely,



COMMUNITY CLIMATE
COLLABORATIVE

From: Annie Ok <annieokDCW@protonmail.com>

Sent: Tuesday, January 14, 2025 4:04 PM

To: Planning Commission <PlanningCommission@albemarle.org>; Board of Supervisors members <bos@albemarle.org>

Subject: Thank you for wrecking Albemarle with solar industrial projects

CAUTION: This message originated outside the County of Albemarle email system. DO NOT CLICK on links or open attachments unless you are sure the content is safe.

Re: the New Solar Ordinance

To our officials who support this defacement of the County and the pollution of its groundwater: Re: the New Solar Ordinance:

1. The panels will last 10 or 15 years, at which time the homeowner will be tasked with the careful, costly, labor intensive removal of the panels. Will they be able to afford it? Or do a cheap home-made smashing job? One breakage and cadmium, nickel and other poisons will be in our wells. One in Scottsville, that you approved, occupies one square mile.
2. A heavy rain, light hail, or stray hunting bullet will break the panels, also dumping poison into the groundwater.
3. The panels, all impervious angled surfaces, will be a positive danger to adjacent properties: they can, and will, wash away roads, homes and farms in a heavy, or even moderate rainfall. This has happened, and is happening in Louisa.
4. The panels will kill birds, and render the soil under the panels sterile for at least ten years. There have been studies on this.
5. The panels will deface our beautiful formerly, and proudly, agricultural, forested green space. We will be the eyesore of Central Virginia. I wish that each one of these industrial projects could be named after those who voted for its approval.

The damage you have done to this county is incalculable. But it is a complete waste of time to protest. The ideas and ideologies that are in the heads of those who run Albemarle -- ie, the planners -- determine the future direction of the County. I have been to the meetings and witnessed the marriage of ideological "climate action staff" and the solar "stakeholders" who stand to gain from the decisions of "staff."

We would move if we could. Hopefully we will be dead by the time the damage is complete. Doubtless those who have authored these proposals will be young enough to retire to a safer county.

Yours sincerely,

Diane Weber

Keswick, VA

434 923 3373

annieokDCW@protonmail.com

This will be the new face of Albemarle County:

