Virginia, Maryland & Delaware
Association of Electric Cooperatives

COALITION FOR COMMUNITY SOLAR ACCESS

November 30, 2022

VIA ELECTRONIC MAIL

Hon. Sen. Richard "Dick" Saslaw
Chairman
Senate Committee on Commerce & Labor
Senate of Virginia

Hon. Del. Kathy Byron
Chairwoman
House Committee on Commerce & Energy
Virginia House of Delegates

Re: SB 660 Report of the Stakeholder Working Group
Shared Solar Programs for Virginia's Electric Cooperatives

Dear Chairman Saslaw & Chairwoman Byron:

Pursuant to the provisions of Senate Bill 660 (2022 Va. Acts ch. 591, hereinafter the "Act"), the Virginia, Maryland and Delaware Association of Electric Cooperatives ("VMDAEC" and its members and affiliates, the "Cooperatives") and the Coalition for Community Solar Access ("CCSA") have jointly convened the required stakeholder working group and tender the attached Report. We are grateful for the participation of more than 30 groups and constituencies in assisting us to prepare it.

Some important conclusions from the Report may be summarized as follows:

- All stakeholders agreed that legislation is not necessary, although any potential future legislation should recognize the different sizes and needs of Virginia's Electric Cooperatives and allow the locally-elected Board of Directors the flexibility and autonomy to design programs that meet the needs of their diverse memberships—instead of a one-size-fits-all mandate;
- Cooperatives in Virginia are uniquely situated due to their not-for-profit business model combined with regulation by the State Corporation Commission. This is extremely rare amongst member-owned utilities throughout the country;
- Shared solar has benefits to offer not only for subscribing consumers but also systemwide benefits relative to demand management at wholesale delivery points and otherwise, in addition to energy. Ensuring that any shared solar product is accessible and affordable to member-consumers while ensuring utility cost recovery is an important balance to be struck;
- Several concerns would need to be tackled before shared solar could be appropriately deployed at Cooperatives, including, *inter alia*, potential subsidization by non-participating member-consumers, issues relative to the renewable energy attributes

accompanying any installation, marketing and consumer protections, and accessibility to low-income individuals and families;

- Several Cooperatives will likely explore a shared program in cooperation with our generation and transmission Cooperative, Old Dominion Electric Cooperative, in the very near future. The conduct of these projects will help inform future action;
- VMDAEC and CCSA resolved to continue discussions and collaboration in the coming years; and
- No adverse or critical comments were received from any organization regarding the Report's conclusions.

We appreciate the General Assembly's interest in this evolving field affecting the energy and utility industry in the Commonwealth and thank you for allowing us to work collaboratively in this way to produce this Report.

We are simultaneously transmitting a copy of this Report to the Staff of the State Corporation Commission, with a request to please post this Report to the Commission's website, as required by the Act.

Very truly yours,

/s/ Charlie Coggeshall

Samuel R. Brumberg
General Counsel
VMDAEC

Charlie Coggeshall
Mid-Atlantic Regional Director
CCSA

Virginia, Maryland & Delaware
Association of Electric Cooperatives

COALITION FOR COMMUNITY SOLAR ACCESS

SB 660: Evaluation of Shared Solar Programs for Electric Cooperatives

Report of the Virginia, Maryland, and Delaware Association of Electric Cooperatives and the Coalition for Community Solar Access to the Chairman of the House Committee on Commerce and Energy and the Chairman of the Senate Committee on Commerce and Labor pursuant to Senate Bill 660

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Charge

Electric cooperatives have been leaders in Virginia on solar energy policy and have accumulated a years-long record of success in—and a commitment to—advancing solar energy policy that takes into consideration their unique business model and statutory and regulatory structures. The Cooperatives and the Coalition for Community Solar Access supported the passage of SB 660, which was enacted as Chapter 591 of the 2022 Acts of Assembly (the "Act"), and which in relevant part (excerpted below) mandated the following stakeholder process.

CHAPTER 591

An Act to convene stakeholder workgroups to evaluate shared solar programs for . . . electric cooperatives in the Commonwealth.

[S 660]
Approved April 11, 2022

Be it enacted by the General Assembly of Virginia:

"Additionally, the Virginia, Maryland, and Delaware Association of Electric Cooperatives and the Coalition for Community Solar Access shall jointly convene a stakeholder process to evaluate shared solar programs for electric cooperatives. This stakeholder process shall include representatives from electric distribution cooperatives, Old Dominion Electric Cooperative, the Department of Energy, low-income community solar advocates, consumer protection advocates, solar advocacy organizations, environmental advocacy organizations, the Chesapeake Solar and Storage Association and other solar industry and shared solar stakeholders, agricultural associations, and staff of the Commission. This stakeholder process shall permit remote or electronic participation in meetings, which may be held at any location in the Commonwealth. The Virginia, Maryland, and Delaware Association of Electric Cooperatives and the Coalition for Community Solar Access shall facilitate and document the proceedings of the stakeholder workgroup and submit a written report to the Chairmen of the House Committee on Commerce and Energy and the Senate Committee on Commerce and Labor no later than November 30, 2022, and make copies of the report publicly available on the Commission's website at the same time as submission to the House and Senate Committees."

Summary of Stakeholder Process and Findings

Pursuant to Senate Bill 660, Virginia, Maryland, and Delaware Association of Electric Cooperatives (VMDAEC or the "Association") and the Coalition for Community Solar Access (CCSA or the "Coalition") jointly convened a stakeholder process to evaluate shared solar programs for electric cooperatives. As mandated by the Act, the stakeholder process included representatives from electric distribution Cooperatives, Old Dominion Electric Cooperative (ODEC), the Department of Energy, low-income community solar advocates, consumer protection advocates, solar advocacy organizations, environmental advocacy organizations, the Chesapeake Solar and Storage Association and other solar industry and shared solar stakeholders, agricultural associations, and staff of the Commission.

VMDAEC and CCSA convened eighteen meetings pursuant to Senate Bill 660. Eight meetings were preparation and planning between VMDAEC and CCSA which included representatives from distribution Cooperatives,[1] including technical experts, policy experts, and experts in billing, administration, and information technology; four meetings were educational meetings between VMDAEC, distribution Cooperatives, ODEC, and CCSA; two meetings were broader stakeholder meetings between all parties enumerated in Senate Bill 660; and two public input listening sessions open to the public. All convened meetings permitted remote or electronic participation. Feedback was requested following the broader stakeholder sessions, and some feedback was received, which will be summarized in this Report. In addition, following the release of this Report in its draft form, VMDAEC and CCSA also held two listening sessions to receive further public and stakeholder feedback.

The stakeholder group received multiple educational presentations throughout the process. CCSA presented to stakeholders the foundations of shared solar, the finer economics of shared solar, and the opportunities created by the federal Inflation Reduction Act for shared solar. VMDAEC presented to stakeholders on the not-for-profit business model of the Cooperatives, describing also the unique regulatory structure governing Cooperatives in Virginia. ODEC presented to stakeholders on Virginia's existing community solar efforts and ODEC's current community solar projects. ODEC also mentioned that, for the distribution Cooperatives that were its Members, the ability would be provided to create a shared solar program using solar installations that were anticipated as part of its distributed solar initiative, which aims to create smaller-scale solar installations behind ODEC wholesale delivery points, where such installations can do the most good to not only provide energy benefits, but also demand management and other benefits to the Cooperatives. Several Cooperatives are considering this option.

Stakeholders raised a multitude of concerns regarding the implementation of shared solar within the cooperative business model. The most prominent stakeholder concern centered around the incompatibility of the standard, for-profit shared solar model with a not-for-profit cooperative model where costs are shared amongst all ratepayers, who are also the owners of the utilities. With most Cooperatives having overwhelmingly residential ratepayers; therefore, the rate and bill

[1] VMDAEC expresses its gratitude to all of the electric distribution Cooperatives that participated in this process and contributed to the drafting of the Report. In particular, Delaware Electric Cooperative and Choptank Electric Cooperative, while being members of VMDAEC, contributed their expertise on these issues freely, even though they are located in Delaware and Maryland, respectively.

impacts of shared solar programs must be carefully and thoroughly considered before any such program is implemented. Stakeholder concerns specifically included: (1) the potential subsidization of shared solar programs by non-participating members, (2) the legality of advertising solar energy if the developer is monetizing the renewable energy credits (RECs), which would create a situation where non-solar energy or undifferentiated electrons would be the only product purchased by a cooperative, (3) a history of misleading marketing tactics employed by some solar developers, including relatively recently,[2] (4) the implications for shared solar in light of any changes to Virginia's retail access laws, and (5) the nature of the shared solar product as an energy product versus an investment product. Stakeholders who advocated in favor of off-site localized solar focused on: (1) the potential cost savings for subscribers, (2) the accessibility of solar to low-income individuals, and (3) the emerging demand for localized solar. The stakeholder process also uncovered that the benefits of shared solar projects are highly localized, and that a single shared solar project's value proposition may change drastically depending on where it is located, the physical geography of the site, the distribution system to which it is interconnected, the member-consumer load on the specific circuit where it is located, and its distance from and interaction with, the relevant local wholesale delivery point.

While concerns were raised, the stakeholder process recognized the benefits of off-site localized solar and cooperatives will continue to work with CCSA and the solar industry to pursue these benefits. Shared solar provides benefits and engagement not only to subscribers but also to the utility system as a whole. All stakeholders, including VMDAEC and CCSA, agreed enabling legislation is not necessary to achieve the goals and benefits of off-site localized solar at this time. These benefits may be pursued in individual cooperative territories under existing law or by expanding upon or amending existing community solar programs in cooperative service territories. VMDAEC, CCSA, and other stakeholders all agreed individual cooperative boards should retain the decision-making authority and flexibility to allow and design a shared solar program in their respective territories.

Throughout the process, all stakeholders recognized various issues and challenges of implementing a standard, for-profit shared solar project in a state-regulated not-for-profit cooperative model. As a result, CCSA and VMDAEC agreed that the best course of action would be to continue working together to address the various issues and challenges in implementing shared solar programs in cooperative service territories. Additionally, CCSA and solar developers were and are encouraged to engage with ODEC to pursue opportunities under existing or future community and shared solar programs. Virginia's Electric Cooperatives will remain open to other opportunities to bring the benefits of off-site localized solar to all of their members.

Perhaps most importantly, CCSA and VMDAEC resolved to continue their discussions and meeting together beyond the completion of this Report.

[2] *See, e.g.*, Solar Company Shuts Down Suddenly, Leaving Virginia Residents Searching for Answers, WRIC News, *available at* https://www.wric.com/news/taking-action/solar-company-shuts-down-suddenly-leaving-virginia-residents-searching-for-answers/ (last accessed Nov. 16, 2022).

Meetings of the SB660 Shared Solar Stakeholder Group

July 27, 2022	VMDAEC and CCSA Meeting at VMDAEC Headquarters
July 27, 2022	Cooperative Representatives and CCSA Meeting via Zoom
August 24, 2022	Cooperative Representatives and CCSA via Zoom
September 9, 2022	VMDAEC and CCSA Meeting via Zoom
September 23, 2022	Cooperatives Representatives, CCSA, & External Stakeholders Meeting at VMDAEC Headquarters
September 30, 2022	VMDAEC and CCSA Meeting via Zoom
September 30, 2022	Cooperative Representatives and CCSA via Zoom
November 7, 2022	Cooperative Representatives and CCSA via Zoom
November 9, 2022	Cooperative Representatives, CCSA, & External Stakeholders Meeting at VMDAEC Headquarters
November 16, 2022	Draft Report Released to Stakeholders
November 18, 2022	Public Listening/Input Session via Zoom
November 21, 2022	Public Listening/Input Session via Zoom
November 28, 2022	VMDAEC and CCSA Meeting via Zoom

Virginia, Maryland & Delaware Association of Electric Cooperatives

COALITION FOR COMMUNITY SOLAR ACCESS

Meeting of CCSA & Cooperative Representatives | July 27, 2022

2:00 PM – 3:00 PM

The meeting was convened by Sam Brumberg of the VMDAEC and Charlie Coggeshall of the CCSA at approximately 2:00 PM.

CCSA Representatives Present:	Charlie Coggeshall Patrick Cushing Christopher McDonald
VMDAEC Staff Present:	Sam Brumberg Sadie Gary

Cooperative Representatives Present:	Leo Radkowski	ANEC
	Kevin Yingling	DEC
	Kyle Allwine	NNEC
	Lee Brock	REC
	Jennifer Sebastian	REC
	Jason Carter	SVEC
	Cassandra Frysinger	SVEC
	George Felts	SEC
	Carol Myers	SEC
	Stephanie Kane	ODEC
	Howard Spinner	NOVEC
	Chris Botulinski	BARC
	Andrew Cotter	CVEC

Mr. Brumberg introduced the purpose of the group, reviewed the related legislation, and the work product it is expected to produce by November 30, 2022.

A proposed schedule of meetings was reviewed, including broad organizational stakeholder group meetings for September 20, November 7, and November 9, with the possibility of those meetings being in-person and lasting all day. The proposal was adopted.

The following groups were invited to participate in the stakeholder discussions: ODEC, Virginia Energy, VPLC, Powered by Facts, CHESSA, National SEIA, SELC, Sierra Club, Appalachian Voices, VA-SUN, the Staff of the SCC, Farm Bureau, and the Agribusiness Council. The proposal was adopted.

Mr. Coggeshall gave a PowerPoint presentation on the basic concept of community solar and how it has been implemented in other states.

The meeting was adjourned at 2:45 PM.

Virginia, Maryland & Delaware
Association of Electric Cooperatives

COALITION FOR COMMUNITY SOLAR ACCESS

Meeting of CCSA & Cooperative Representatives | August 24, 2022

10:00 AM – 12:00 PM

The meeting was convened by Sam Brumberg of the VMDAEC and Charlie Coggeshall of the CCSA at approximately 10:00 AM on August 24, 2022.

CCSA Representatives Present:	Charlie Coggeshall Patrick Cushing Jake Springer Laura Merten
VMDAEC Staff Present:	Sam Brumberg Jacob Newton

Cooperative Representatives Present:	Leo Radkowski	ANEC
	Kevin Yingling	DEC
	Kyle Allwine	NNEC
	Lee Brock	REC
	Jennifer Sebastian	REC
	Jason Carter	SVEC
	Cassandra Frysinger	SVEC
	George Felts	SEC
	Carol Myers	SEC
	Stephanie Kane	ODEC
	Howard Spinner	NOVEC
	Chris Botulinski	BARC
	Andrew Cotter	CVEC
	Jim Guy	MEC
	Pete Gallini	ODEC
	Kirk Johnson	ODEC

Mr. Brumberg facilitated the introduction of meeting attendees gave an overview of the anticipated agenda and timeline.

The proposed schedule of meetings was revised to change the date of the first broad organizational stakeholder group meeting from September 20th to September 23rd.

The list of invited stakeholders was again reviewed to ensure that the broadest possible representation was achieved: ODEC, Virginia Energy, VPLC, Powered by Facts, CHESSA, National SEIA, SELC, Sierra Club, Appalachian Voices, VA-SUN, the Staff of the SCC, Farm Bureau, and the Agribusiness Council.

Mr. Brumberg facilitated a question-and-answer exchange based on the draft proposal.

- **On Minimization/Elimination of Cross Subsidy** – Ms. Sebastian inquired about minimizing cross-subsidies and Mr. Coggeshall responded with concerns of complete elimination of cross-subsidy and agreed with a minimization-based standard. Mr. Carter and Ms. Brock expressed agreement with the minimization standard.
- **On Economic Benefits to Consumer-Members** – Mr. Allwine inquired what the economic benefit is for the cooperative member-consumers? Mr. Coggeshall responded that shared solar operates in a competitive market and through the principles of competitive markets, the developers would need to reasonably ensure savings to the member-consumer as a benefit of subscription. If savings are not passed on to the subscriber, then the developer of the shared solar project will struggle to obtain financing and not be competitive in the market. Mr. Spinner expressed concerns about the benefits of shared solar projects. Mr. Coggeshall explained the benefits of shared solar projects include, but are not limited to; local use, offsetting use, less risk than rooftop solar, and increases access to renewable energy through lower entry investment. Mr. Spinner further inquired into the need to satisfy the marginal consumer desire to invest in solar when it may subsidize the members who only care about keeping rates as low as possible. Mr. Coggeshall responded by emphasizing these programs are forward looking to the future and merely provide an avenue for consumers to pursue affordable solar. Mr. Brumberg inquired why shared solar over utility scale solar? Mr. Cushing responded that the PJM queue backlog makes shared solar on the distribution system more desirable. Additionally, many of the localities in cooperative service territory are opposed to utility-scale solar. Shared solar may be a better fit for rural Virginia that is opposed to utility scale solar due to the reduced land use concerns. Mr. Johnson agreed there is a space in the market for shared solar and there is a demand for that in cooperative territory. Mr. Johnson additionally described ODEC's projects that are similar to this proposed shared solar program and inquired why CCSA is now asking for legislation as opposed to business-to-business conversations between ODEC and CCSA? Mr. Coggeshall responded that CCSA's membership is looking for a standardization through legislation to entice larger investment by developers and wants to ensure program design can fit into the current legislative scheme. Mr. Brumberg responded that there is a program design for shared solar that may fit into the current legislative scheme. Mr. Johnson explained he believes ODEC and CCSA can work together to create a win-win scenario outside of new legislation. Ms. Brock explained her concerns with capacity for these projects. Ms. Sebastian commented on the importance of including the State Corporation Commission Staff in this process, so they understand the outcome of this process. Ms. Sebastian also inquired about the timeline of these projects if approved and pursued at the end of this process? Ms. Merten inquired about the Commission's role in Cooperatives opting into a shared solar program. Mr. Brumberg responded that that there would be a PPA between ODEC and a developer and ODEC offers its members a community solar program through a pass-through mechanism. Once passed through to the retail side, there would be a voluntary rate schedule approved by the Cooperative's board pursuant to the board's statutory authority. However, this would only work if all parties to this complex agreement were satisfied with the agreement.
- **On Member Concerns** – Ms. Frysinger explained specific examples of issues with solar developers and Cooperative members and the importance of involving the Cooperatives when approaching members. Mr. Coggeshall responded that CCSA recognizes the Cooperative desire to be the interface with its membership, but also highlighted the

importance of consumer interface for some developers. Many (but not all) developers' business models include direct interfacing and relationships with consumers. Mr. Springer responded by highlighting the benefits of third-party involvement in solar by providing specialized expertise and a value proposition. Mr. Johnson expressed the importance of maintaining a direct relationship between the Cooperatives and their members. Mr. Springer highlighted the importance of the developer maintaining a relationship with the individual members to ensure a return on investment. Ms. Brock shared some horrific member experiences with solar developers. Ms. Frysinger highlighted the importance of member protection programs. Mr. Guy explained that anything that gets between a Cooperative and its members will be a hard sell for Cooperative member-consumers. Mr. Coggeshall agreed, explaining that developers do not want to get directly in between a Cooperative and its members, but explained that many developers want some relationship with the consumers, and that, ideally, multiple options be available to increase consumer choice and allow for more than one business model to operate.

The meeting was adjourned at 12:05 PM.

Virginia, Maryland & Delaware Association of Electric Cooperatives

COALITION FOR COMMUNITY SOLAR ACCESS

Meeting of CCSA, Cooperative Representatives, & Stakeholders
September 23, 2022

10:00 AM – 3:00 PM

The meeting was convened by Sam Brumberg of the VMDAEC and Charlie Coggeshall of the CCSA at approximately 10:00 AM on September 23, 2022.

CCSA Representatives Present:	Charlie Coggeshall	CCSA
	Patrick Cushing	CCSA
	Jake Springer	NEXAMP
	Laura Merten	Apex Clean Energy
VMDAEC Staff Present:	Sam Brumberg	VMDAEC
	Andrew Vehorn	VMDAEC
	Sadie Gary	VMDAEC
	Jacob Newton	VMDAEC
Cooperative Representatives Present:	Leo Radkowski	ANEC
	Kevin Yingling	DEC
	Jeff Ahearn	CBEC
	Kyle Allwine	NNEC
	Lee Brock	REC
	Jennifer Sebastian	REC
	Jason Carter	SVEC
	Cassandra Frysinger	SVEC
	George Felts	SEC
	Carol Myers	SEC
	Stephanie Kane	ODEC
	Howard Spinner	NOVEC
	Chris Botulinski	BARC
	Andrew Cotter	CVEC
	Jim Guy	MEC
	Scott Wallace	SEC
	Pete Gallini	ODEC
	Kirk Johnson	ODEC
Stakeholders Present:	Josephus Allmond	SELCVA
	Will Cleveland	SELCVA
	Justin Blitz	Cypress Creek Renewables
	Arlen Bolstad	SCC
	David Essah	SCC
	Kelli Gravely	SCC
	Carrie Hearne	Virginia Energy

Sarah Hollberg	Alliance for the Shenandoah Valley
Ben Hoyne	VA-SUN
Tyler Jones	Pivot Energy
Connor Kish	Sierra Club
Richard Michaux	SCC
Martha Moore	Farm Bureau
Frederick Ochsenhirt	SCC
Brandon Smithwood	Dimension Energy
Aaron Sutch	VA-SUN
Shepelle White	SCC
Missy Wesolowski	Summit Ridge Energy
Carmen Bingham	VPLC

Mr. Brumberg facilitated the introduction of meeting attendees gave an overview of the anticipated agenda (Attachment A) and timeline. Mr. Brumberg gave an introductory presentation of the charge of SB 660, summarizing and reading the content of the Act, attached as Attachment B.

Mr. Brumberg and Mr. Gallini gave a presentation on "Co-ops 101" to include the Co-ops' experience with solar up until today and the ODEC distributed solar initiative. A narrative of that presentation and the slide deck are attached as Attachment C. A discussion followed on the nature of rural Cooperative territory and the role of shared solar in those communities.

Mr. Coggeshall presented on "Shared Solar 101." A narrative of the presentation the slide deck are attached as Attachment D.

Mr. Springer presented on the "Economics of Shared Solar." A discussion ensued on various concerns of the Cooperatives. A summary of the discussed questions and concerns are as follows:

- Subsidizing members not in the shared solar program.
- Types and complexity of arrangements between the developers and the utility.
- Involvement of ODEC or other wholesale power provider in any transaction.
- Is this even green energy for the subscribers? (If the solar RECs are monetized and sold off by the developer, the Cooperative is receiving only undifferentiated electrons.)
- Is this retail choice in disguise? (Cooperatives have been especially impacted by Virginia retail choice law in the past, and this has left them with many concerns and sensitivities in this area.)
- Where is a for-profit developer finding savings for members, that a not-for-profit Cooperative has to charge a premium to ensure other members are not subsidizing the project?
- Where will these projects go?

A narrative of the presentation and the slide deck are attached as Attachment E.

Feedback was provided by interested parties attached as Attachment F.

The full attendee list is attached as Attachment G. The meeting concluded with Mr. Springer's presentation as the designated adjournment time had been reached. The group resolved to continue

with Ms. Merten's presentation and other matters at its next meeting. The meeting was adjourned at 3:07 PM.

Attachment A

Virginia, Maryland & Delaware
Association of Electric Cooperatives

COALITION FOR COMMUNITY SOLAR ACCESS

SB 660
Shared Solar Working Group
AGENDA FOR FRIDAY, SEPT. 23, 2022

1. Introductory Segment
    a. Logistical & Safety Information
    b. Why are we here? (Authorizing Act)
    c. Introductions/Roundtable
2. Presentations
    a. Co-ops 101 — Sam Brumberg
        i. Co-ops' Experience with Solar Up to Today
        ii. ODEC Distributed Solar Initiative — Pete Gallini
    b. Shared Solar 101 — Charlie Coggeshall
    c. Economics of Shared Solar — Jake Springer
    d. Inflation Reduction Act — Laura Merten
3. Lunch
4. Feedback Exercise/Discussion
5. Conclusion

Attachment B

Introductory Remarks on the Charge of SB660

The authorizing Act of SB 660, Chapter 591 charged the Virginia, Maryland, and Delaware Association of Electric Cooperatives and the Coalition for Community Solar Access to jointly convene a stakeholder process to evaluate shared solar programs for electric cooperatives. This stakeholder process shall include representatives from electric distribution cooperatives, Old Dominion Electric Cooperative, the Department of Energy, low-income community solar advocates, consumer protection advocates, solar advocacy organizations, environmental advocacy organizations, the Chesapeake Solar and Storage Association and other solar industry and shared solar stakeholders, agricultural associations, and staff of the Commission. This stakeholder process shall permit remote or electronic participation in meetings, which may be held at any location in the Commonwealth. The Virginia, Maryland, and Delaware Association of Electric Cooperatives and the Coalition for Community Solar Access shall facilitate and document the proceedings of the stakeholder workgroup and submit a written report to the Chairmen of the House Committee on Commerce and Energy and the Senate Committee on Commerce and Labor no later than November 30, 2022, and make copies of the report publicly available on the Commission's website at the same time as submission to the House and Senate Committees.

Attachment C

Cooperatives 101

Cooperatives are different from investor-owned utilities in many ways. Cooperatives are member-owned, not-for-profit, and tax-exempt entities that operate solely to serve their members. The Cooperatives are regulated by the State Corporation Commission.

The Cooperatives are not-for-profit entites operating on a "cost-of-service" model, and they propose retail rates to the Commission accordingly. Cooperative rates are set to recover prudently incurred costs, including operating expenses, debt service (principal and interest), capital investments in utility plant, and a reasonable operating margin. A TIER (Times Interest Earned Ratio) calculation is used to set rates to meet requirements of lenders and maintain reasonable operating margins. Margins are allocated to members and are returned to members over time as capital credits. This means that over time, members receive electricity at cost without a profit component.

Because of the not-for-profit model, the Cooperatives are tax exempt. Accordingly, the Cooperatives are generally exempt from income taxes and file a Form 990 with the IRS each year. To maintain tax exempt status, 85% of cooperative's revenue must be from its members. However, Cooperatives also pay other taxes, such as property, payroll, and sales taxes.

In accordance with the Cooperative model, Cooperatives also adhere to a special financial reporting system. Cooperatives maintain their books according to the RUS Uniform System of Accounts (Bulletin 1767B-1) and prepare financial statements using RUS Form 7. Form 7 is provided to Utility Accounting and Finance Staff at the Commission annually.

Cooperatives are also unique in terms of how they are governed. Cooperatives are governed by locally-elected boards of directors made up of member-consumers. The General Assembly has given the Boards the authority to: (1) ratemaking/rate rebalancing—the increase or decrease of distribution rates across-the-board up to 5% three years after last rate change (rate case or board action) and to rebalance rate components in a revenue-neutral way, (2) make any revenue-neutral change to T&Cs or amend fees, (3) increase NEM caps, (4) open PPAs for residential/nonresidential classes, and (5) enter the NEM transition process.

Capital credits are an important part of the overall financial structure, representing the members' equity in the Cooperative. Board-approved and lender-required financial metrics may require a certain level of equity to be maintained. Capital credits are allocated each year, dependent on consumption. They are retired from time to time, by board resolution, using an equitable methodology, generating a cash refund or bill credit to members.

Cooperatives have been in front of and active in the solar space. In 2017, the Cooperatives were the first utilities in Virginia to have six separate community solar programs. In 2019, the Cooperatives increased NEM caps by 5 times and legalized PPAs for nonprofit/governmental members. In 2021, the Cooperatives eliminated the NEM cap limit, provided for cost recovery for utility-scale solar to protect ratepayers, and got Board authority to open PPAs for other classes of members.

ODEC, the generation and transmission Cooperative serving 9 of Virginia's distribution Cooperatives, has been actively pursuing renewables for over a decade. In the renewables space, ODEC has 263 MW of wind, 6 MW landfill gas to energy, 40 MW of utility-scale solar in Virginia, and approximately 60 MW of distributed solar. ODEC is striving to add 300 MW of additional solar, with the strategic goal to reduce greenhouse gas emissions with a 50% reduction in carbon intensity by 2030 and net zero greenhouse gas emissions by 2050. In pursuit of this goal, ODEC initiated a distributed solar program in 2019 that was member-driven by focusing on more local solar. After conducting a competitive solicitation, EDF Distributed Solutions was chosen by ODEC as a strategic partner. EDF received PPAs or a dozen projects across ODEC Member Cooperative territories and currently have five projects now under construction and a few others in development. It is important to emphasize, this is a non-exclusive arrangement, and ODEC will continue to pursue additional distributed projects as a focus. ODEC Members have a choice to utilize some or all of the output as basis for long-term fixed price shared solar offering.

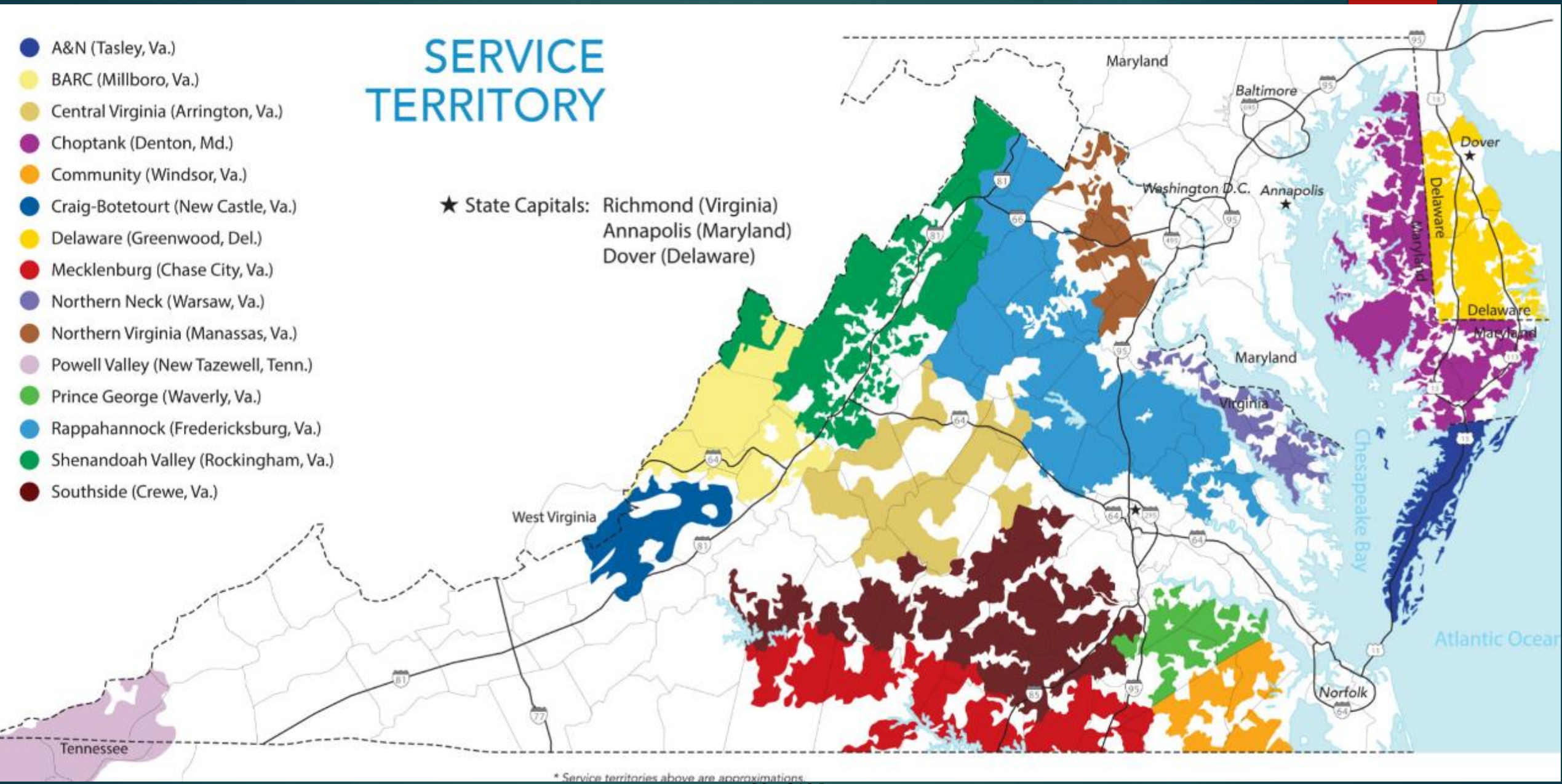
Co-ops 101

VIRGINIA'S ELECTRIC COOPERATIVES

Agenda for This Segment

- Introduction
- Map
- Electric Cooperatives 101
  - Differences Between IOUs and Co-ops
  - Rate Setting
  - Tax Exempt Status
  - Local Governance & Special Authorities
  - Capital Credits
  - **Three Different Power Suppliers: ODEC vs. non-ODEC vs. TVA**

SERVICE TERRITORY



Co-ops vs. IOUs

- Owned by the Members
- Unity of Interests between Ratepayers and Shareholders
- Not for Profit
- Tax Exempt (Income and Recordation Tax)
- Cost-of-Service, "Traditionally" Regulated
- Operated Using the Seven Cooperative Principles
- Funding Sources:
  - U.S. Government—Rural Utilities Service
  - CoBank and CFC
- Intro to ODEC as Generation & Transmission Co-op

Rate Setting

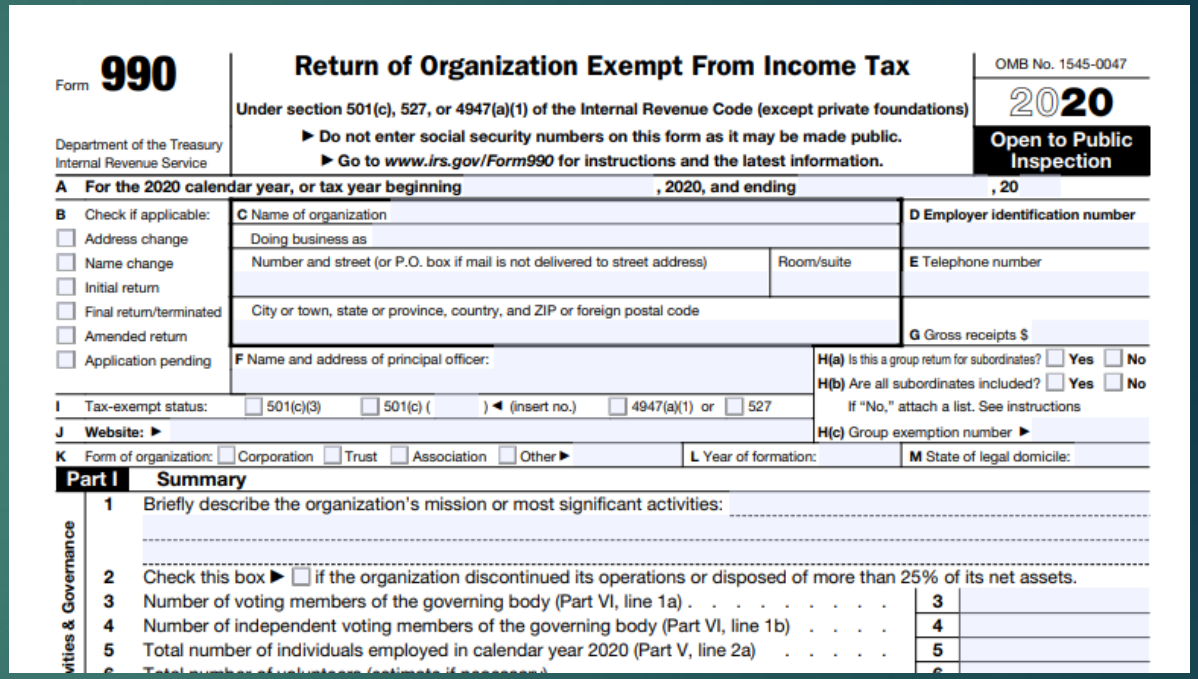
Cooperative rates are set to recover prudently incurred costs, including operating expenses, debt service (principal and interest), capital investments in utility plant, and a reasonable operating margin.

A TIER (Times Interest Earned Ratio) calculation is used to set rates to meet requirements of lenders and maintain reasonable operating margins.

Margins are allocated to members and are returned to members over time as capital credits. This means that over time, members receive electricity at cost without a profit component.

Tax Exempt Status

- Cooperatives are generally exempt from income taxes and file a Form 990 with the IRS each year.
- To maintain tax exempt status, 85% of cooperative's revenue must be from its members.
- Cooperatives also pay other taxes, such as property, payroll, and sales taxes.



Form **990**

Return of Organization Exempt From Income Tax

Under section 501(c), 527, or 4947(a)(1) of the Internal Revenue Code (except private foundations)

► Do not enter social security numbers on this form as it may be made public.

► Go to *www.irs.gov/Form990* for instructions and the latest information.

OMB No. 1545-0047

2020

Open to Public Inspection

Department of the Treasury
Internal Revenue Service

A For the 2020 calendar year, or tax year beginning , 2020, and ending , 20

B Check if applicable:
- ☐ Address change
- ☐ Name change
- ☐ Initial return
- ☐ Final return/terminated
- ☐ Amended return
- ☐ Application pending

C Name of organization

Doing business as

Number and street (or P.O. box if mail is not delivered to street address) | Room/suite

City or town, state or province, country, and ZIP or foreign postal code

D Employer identification number

E Telephone number

G Gross receipts $

F Name and address of principal officer:

H(a) Is this a group return for subordinates? ☐ Yes ☐ No

H(b) Are all subordinates included? ☐ Yes ☐ No

If "No," attach a list. See instructions

H(c) Group exemption number ►

I Tax-exempt status: ☐ 501(c)(3) ☐ 501(c) ( ) ◄ (insert no.) ☐ 4947(a)(1) or ☐ 527

J Website: ►

K Form of organization: ☐ Corporation ☐ Trust ☐ Association ☐ Other ►

L Year of formation:

M State of legal domicile:

Part I **Summary**

1 Briefly describe the organization's mission or most significant activities:

2 Check this box ► ☐ if the organization discontinued its operations or disposed of more than 25% of its net assets.

3 Number of voting members of the governing body (Part VI, line 1a) 3

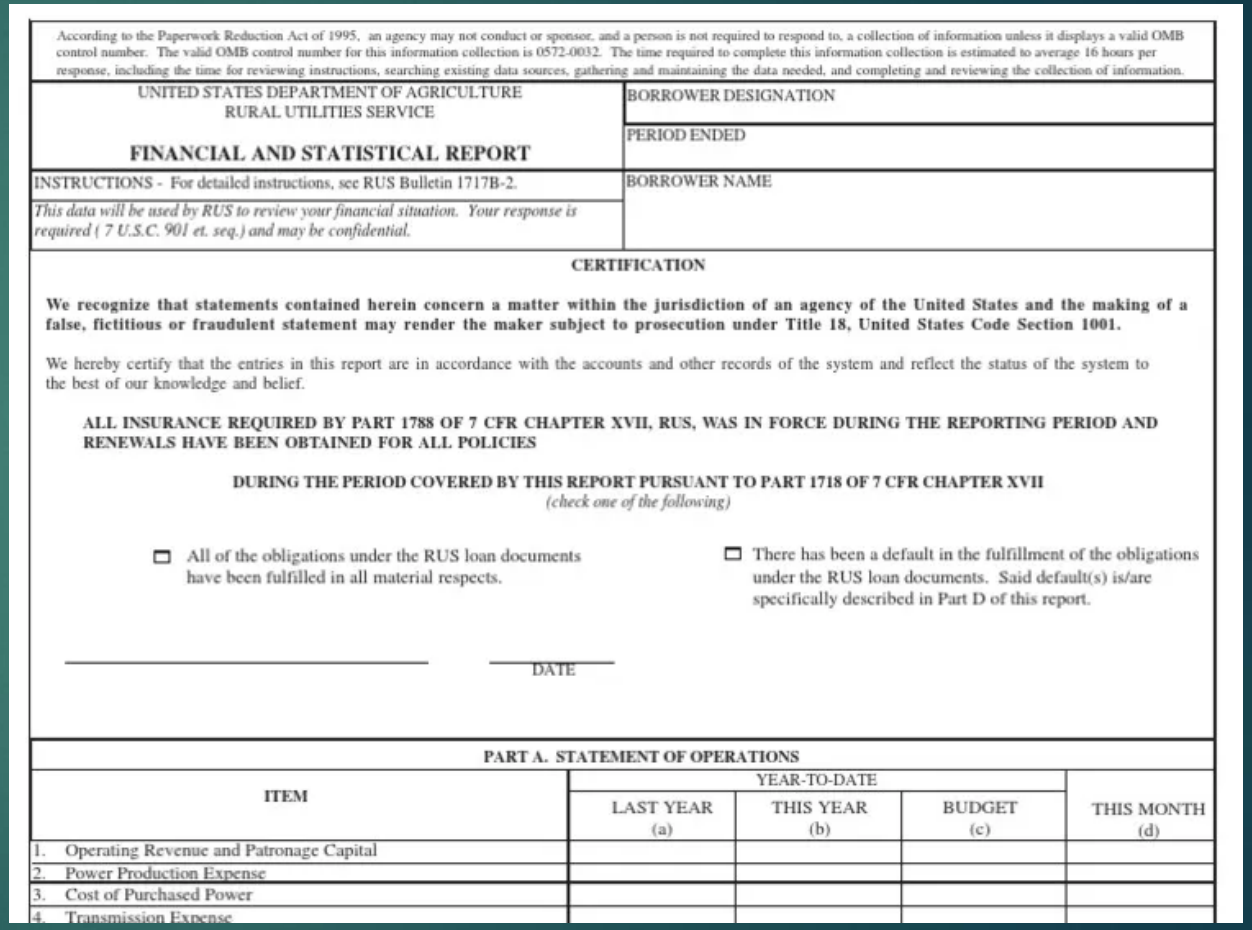
4 Number of independent voting members of the governing body (Part VI, line 1b) 4

5 Total number of individuals employed in calendar year 2020 (Part V, line 2a) 5

Financial Reporting

- Cooperatives maintain their books according to the RUS Uniform System of Accounts (Bulletin 1767B-1) and prepare financial statements using RUS Form 7.

- Form 7 is provided to Utility Accounting and Finance at the Commission annually.



According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0572-0032. The time required to complete this information collection is estimated to average 16 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

UNITED STATES DEPARTMENT OF AGRICULTURE
RURAL UTILITIES SERVICE

FINANCIAL AND STATISTICAL REPORT

BORROWER DESIGNATION

PERIOD ENDED

INSTRUCTIONS - For detailed instructions, see RUS Bulletin 1717B-2.

This data will be used by RUS to review your financial situation. Your response is required (7 U.S.C. 901 et. seq.) and may be confidential.

BORROWER NAME

CERTIFICATION

We recognize that statements contained herein concern a matter within the jurisdiction of an agency of the United States and the making of a false, fictitious or fraudulent statement may render the maker subject to prosecution under Title 18, United States Code Section 1001.

We hereby certify that the entries in this report are in accordance with the accounts and other records of the system and reflect the status of the system to the best of our knowledge and belief.

ALL INSURANCE REQUIRED BY PART 1788 OF 7 CFR CHAPTER XVII, RUS, WAS IN FORCE DURING THE REPORTING PERIOD AND RENEWALS HAVE BEEN OBTAINED FOR ALL POLICIES

DURING THE PERIOD COVERED BY THIS REPORT PURSUANT TO PART 1718 OF 7 CFR CHAPTER XVII
(check one of the following)

☐ All of the obligations under the RUS loan documents have been fulfilled in all material respects.

☐ There has been a default in the fulfillment of the obligations under the RUS loan documents. Said default(s) is/are specifically described in Part D of this report.

_____ _____
DATE

PART A. STATEMENT OF OPERATIONS

ITEM	YEAR-TO-DATE			THIS MONTH
	LAST YEAR (a)	THIS YEAR (b)	BUDGET (c)	(d)
1. Operating Revenue and Patronage Capital				
2. Power Production Expense				
3. Cost of Purchased Power				
4. Transmission Expense				

Local Governance & Special Authorities

- Cooperatives are governed by locally elected boards of directors made up of member-consumers.
- Traditionally, the Commission has declined to exercise jurisdiction over corporate matters including elections, capital credits, and line extension investment amounts.
- In addition, Co-op Boards have the authority to:
  - Ratemaking/Rate Rebalancing—increase or decrease distribution rates across-the-board up to 5% three years after last rate change (rate case or board action). Va. Code § 56-585.3(A)(2). Rebalance revenue between the fixed and volumetric load components. Va. Code § 56-585.3(A)(4).
  - Terms and Conditions—make any revenue-neutral change to T&Cs or amend fees. Va. Code § 56-585.3(A)(3).
  - NEM Cap Raises—increase NEM caps. Va. Code § 56-594.01(G).
  - NEM PPAs—open PPAs for residential/nonresidential classes. Va. Code § 56-594.01(M).
  - NEM Transitions—enter the NEM transition process. Va. Code § 56-585.4.
- Approvals: Boards approve the 4-year RUS Construction Work Plan and pass resolutions authorizing loans to support the development of infrastructure.

Capital Credits

- Represent members' equity in the Co-op.
- Board-approved and lender-required financial metrics may require a certain level of equity to be maintained.
- Allocated each year, dependent on consumption.
- Retired from time to time, by board resolution, using an equitable methodology, generating a cash refund or bill credit to members. (General Retirement)
- Often retired early when…
  - A member dies (Estate Retirement);
  - Sometimes, when third-party purchases capital credits out of bankruptcy; or
  - A business dissolves itself.
  - Any early retirement is discounted.
- Unclaimed Capital Credits are not subject to ordinary escheatment.

Prior Actions in Solar Space

- Community Solar/2017 Community Solar Act
  - 5 Programs under the Act
  - 1 Additional--BARC
  - First in Virginia
- 2019 "Visionary" NEM Reform
  - Increased Caps 5x
  - Legalized PPAs for Nonprofit/Governmental Members
- More Recently
  - Increased Caps ∞
  - Cost Recovery for Utility-Scale Solar to Protect Ratepayers
  - Board Authority for PPAs for Other Classes

ODEC Distributed Solar Program

- Active pursuit of Renewables for over a decade…
  - 263 MW of wind, 6 MW landfill gas to energy;
  - 40 MW of utility scale solar in VA;
  - Approximately 60 MW of distributed solar, mostly VA;
  - Goals for 300 MW of additional solar (Distributed and utility scale.
- Strategic goal to reduce greenhouse gas emissions with a 50% reduction in carbon intensity by 2030 and net zero greenhouse gas emissions by 2050.
- Initiated Distributed Solar program in 2019:
  - ODEC-Member driven;
  - Goal is to have more *local* solar.

ODEC Old Dominion Electric Cooperative®

ODEC Distributed Solar Program

- After competitive solicitation, EDF Distributed Solutions chosen as "partner."
  - PPAs for a dozen projects across ODEC Member territories.
  - 5 projects now under construction, others in development.
- Non-exclusive arrangement, have entered into agreements with others recently.
  - Will continue to pursue additional distributed projects as a focus.
- ODEC Members have choice to utilize some or all of output as basis for long-term fixed price shared solar offering.

ODEC Old Dominion Electric Cooperative®

Questions

Attachment D

CCSA and Shared Solar 101

The Coalition for Community Solar Access (CCSA) is a national, business-led trade organization, composed of over 100 member companies, that works to expand access to clean, local, affordable energy nationwide through the development of robust community solar programs. CCSA's mission is to empower energy consumers, including renters, homeowners, businesses and households of all socio-economic levels, by increasing their access to reliable clean energy. CCSA has been the leading national voice in the creation and expansion of community solar (referred to as "shared solar" in Virginia) programs throughout the country.

Shared solar typically refers to solar facilities on the distribution system whereby multiple electricity customers within that utility service territory (of all types, residential, commercial, government, etc.) can "subscribe" to the project and in return receive credits on their electricity bills for their share of the power produced. It's important to note that these subscribers are not changing their electricity provider or source of energy when participating in a shared solar project. Instead, the subscriber is simply participating in the costs and monetary benefits associated with the shared solar facility and its generation, which is sent directly to the electricity grid. In turn, the utility is compensating the subscribing customers for the value of the generation.

This model for solar is being rapidly adopted nationwide because of its ability to achieve several policy and grid objectives. For one, only a small minority of American households and businesses don't have access to solar because they rent, live in multi-tenant buildings, have roofs that are unable to host a solar system, are shaded by trees, or experience some other mitigating factor. Shared solar ensures there is an equitable opportunity to directly participate in the costs and benefits of distributed solar rather than it only being limited to those that can host their own solar system. This flexibility in participation has made it a particularly unique tool for enabling access and benefits – through reduced electricity bills – for lower income customers.

In addition to the economic benefits that go to participating customers, shared solar is a cost-effective way to expand clean energy deployment while creating jobs and fueling competition and economic development. These projects provide local benefits to the regions they serve by giving landowners an alternative and stable revenue source (via leased land agreements) and tax revenues for local jurisdictions. Being on the distribution system, shared solar is more flexible with regards to siting and permitting than larger utility-scale projects and is an important component of an "all-of-the-above" energy strategy. Further, as a distributed energy resource, shared solar supports a more resilient grid that helps alleviate the energy and capacity needs of the transmission and distribution systems. This grid value will become increasingly salient as energy demand increases through the electrification of transportation and other energy sectors.

Shared solar is expanding rapidly across the country, with enabling legislation in at least 19 states (plus Washington, DC) and at least one project in 41 states (plus DC). As mentioned previously, shared solar is more commonly referred to as "community solar" outside Virginia, though it's also referred to as community distributed generation, solar gardens, shared renewables, and other terms. In addition, it has been deployed in different shapes and program configurations, often tied to the ownership type, such as utility-led, third-party led, community/nonprofit led, and other hybrid models. The third-party model, whereby third parties (other than the utility) can compete for both

developing, building, and owning projects while also competing on customer acquisition and associated value propositions, has become the most proliferate form of shared solar in recent years. Notably, CCSA is focused primarily on markets that enable third-party competition.

Virginia passed enabling legislation to create a shared solar program in Dominion territory in 2020. The program was officially open to applications starting in late 2021, however projects are unlikely to start operating until as late as July 2023 to allow Dominion to setup its Customer Information Platform. There are dozens of CCSA member companies, ranging from customer-facing subscriber organizations to project developers and everything in between, that are already invested or are currently pursuing business opportunities in Virginia. A multi-family shared solar program (where project must be located onsite of a multi-family property and serving only its local residents) was also established through legislation passed in 2020. Note that these should not be confused with Virginia's 2017 Community Solar Pilot Program, which legislation established as a utility-led program in Dominion and APCo territories, or with programs established by electric cooperatives. In addition, electric cooperatives in Virginia have the ability to establish various forms of shared solar programs in their territory and several have been established.

The shared solar program in Dominion territory is the most prominent in the state. It has a program size of 150 megawatts (MW), which can be expanded by additional 50 MW (200 MW total) upon satisfying the initial low-income participation requirement (30% of capacity). The solar facilities in this program cannot exceed 5 MW, and at least 40% of project capacity subscribed by customers must be allocated to subscriptions of 25 kW or less; and at least 30% comprised of low-income customers. The credit rate for the program is based on a $/kWh rate calculated annually by dividing revenues (to the class) by sales (measured in kilowatt-hours), (i.e., retail rate), however there is also a minimum bill requirement (of which low-income are exempt) that prevents the ability to offset the entire portion of a subscribers electricity bill. A recent and contentious Order by the State Corporation Commission established a very high minimum bill which is expected to prevent participation by any customer that is not low-income (and therefore exempt).

COALITION FOR COMMUNITY SOLAR ACCESS

SB 660 - Shared Solar Stakeholder Meeting

September 23, 2022

Who is CCSA?

The Coalition for Community Solar Access is the business voice for community solar in the United States.

- Our mission is to expand customer choice & access to solar for all households & businesses through local, clean, and affordable community solar.
- We work with customers, utilities, local stakeholders, and policymakers to develop and implement policies and best practices that ensure community solar programs provide a win, win, win for all, starting with the customer.

www.communitysolaraccess.org

COALITION FOR COMMUNITY SOLAR ACCESS

Shared Solar (Community Solar) Overview

What is Shared Solar (AKA - Community Solar)?

COALITION FOR COMMUNITY SOLAR ACCESS

- Projects are typically 2-5 MW and connected to the distribution system
- Locally sited projects in and around your community
- Multiple subscribers associated with a single solar array
- Participants receive a credit on their electric utility bill for portion of power produced

How does it work?

COALITION FOR COMMUNITY SOLAR ACCESS

Shared Solar Project

Project Development/ Maintenance

Electricity

Shared Solar Developer

Electric Utility

Upfront or Ongoing Participation Payment

Shared Solar Bill Credits

Shared Solar Subscribers

Benefits of Shared Solar?

COALITION FOR COMMUNITY SOLAR ACCESS

LOWER ENERGY BILLS.
Locally produced solar provides homeowners, renters and businesses equal access to the cost-saving benefits of solar energy.

LOCAL JOB CREATION & ECONOMIC IMPACT.
Local energy creates good-paying jobs in communities across the United States. Local solar also provides economic opportunities for farmers through land leases and provides significant tax revenue to local municipalities, which in turn can fund local public services and infrastructure improvement projects.

REDUCED GRID COSTS.
By generating energy closer to the consumer, local solar reduces demand for costly, large-scale utility and distribution infrastructure.

A MORE RESILIENT GRID.
Local solar energy, especially when paired with battery storage, will make the electric grid more resilient to weather, climate, and large-scale disruptions. Instead of relying on giant power plants and the poles and wires to transmit power hundreds of miles, a distributed grid of local solar facilities can even out the electric load and reduce outages.

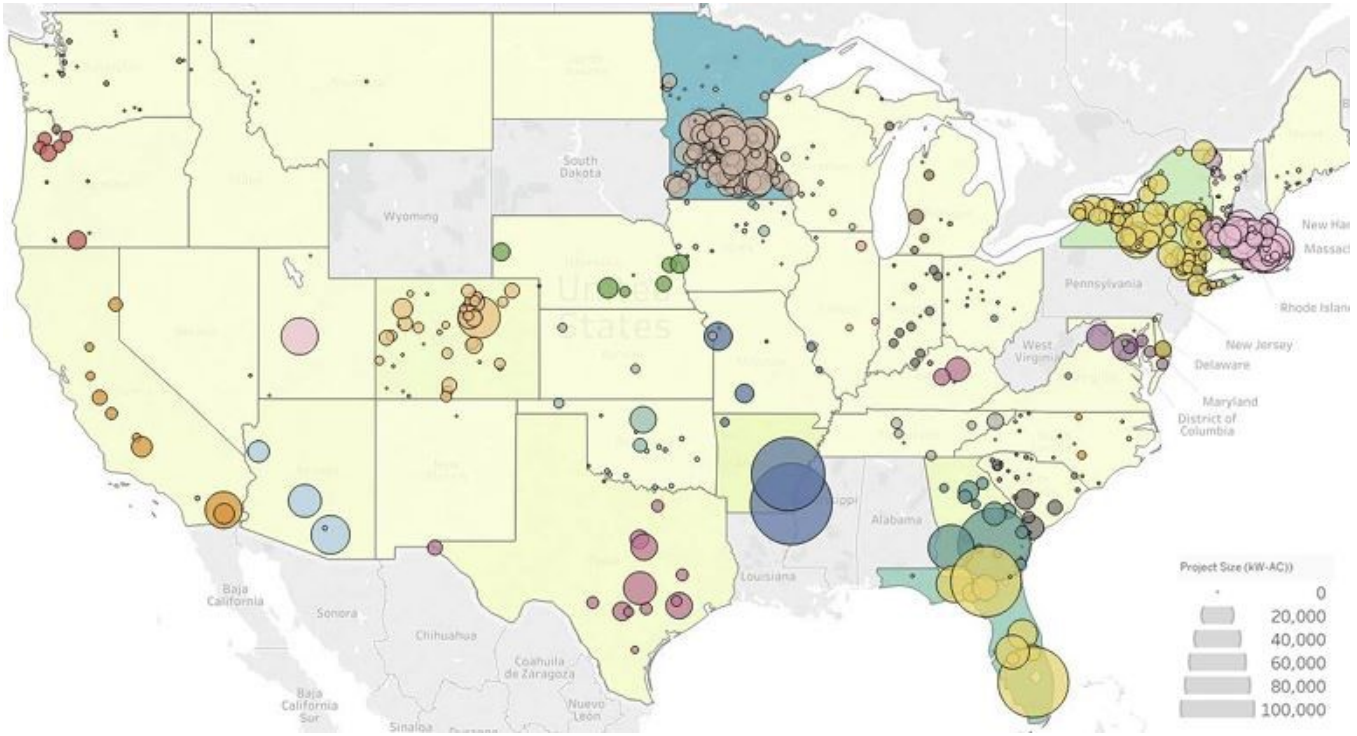
CONTINUED INNOVATION.
Expanding the market creates opportunities for competition, innovation and equitable access to the benefits of renewable energy. This will lead to more efficient products, faster deployment of renewables, increased savings for customers and greater economic benefits, especially for low- and moderate-income communities.

MORE EQUITABLE PARTICIPATION.
Everyone with an electric bill can directly participate in and benefit from rooftop and community solar. With intentional action including policy and programming support, local energy includes low-wealth communities who have been most impacted by pollution from traditional power plants.

National Experience with Shared Solar

- **By the Numbers**
  - NREL/SEIA estimate there was over 5 GW installed at the end of 2021
  - At least 41 states (plus DC) with at least one project online
  - At least 19 states (and DC) with state-enabling policies

- **Shapes & Sizes**
  - Shared Solar is also referred to as Community Solar, Community Distributed Generation, Solar Gardens, Shared Renewables, other?
  - Programs (and projects) can be utility-led, third-party led, community/nonprofit led, hybrids, other?

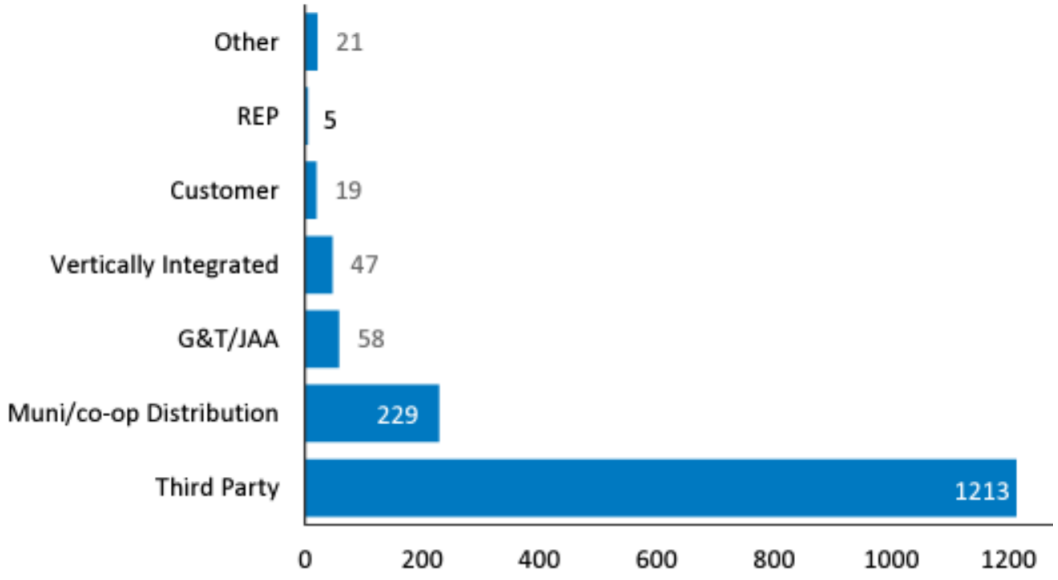


Source: NREL

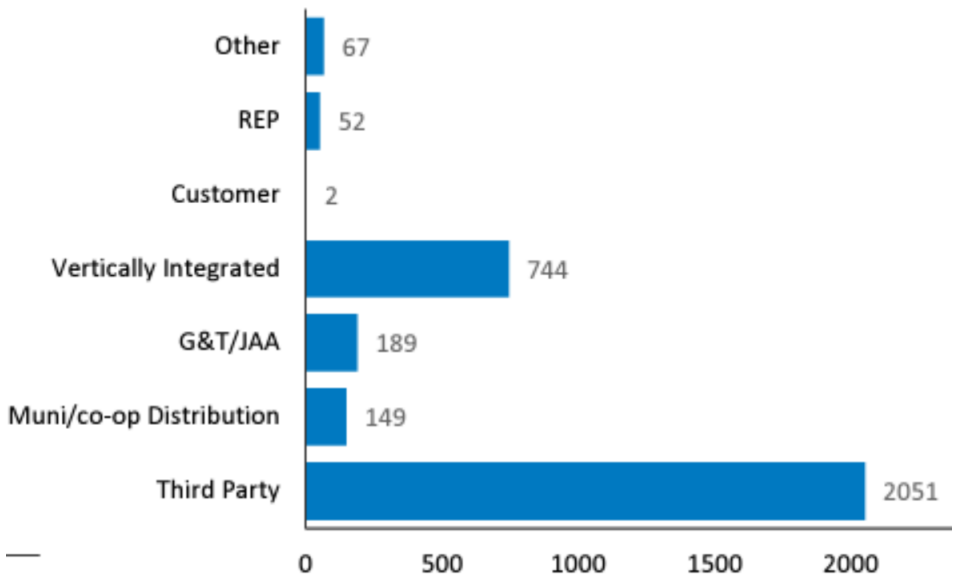
Number of Projects and Total Capacity, by Program Type at the end of 2020

COALITION FOR COMMUNITY SOLAR ACCESS

Number of Projects



Capacity



- At the end of 2020, 64% of capacity (64%) and 76% of projects were developed and operated by third parties – these percentages are higher today

Source: NREL

COALITION FOR COMMUNITY SOLAR ACCESS

Shared Solar in Virginia

Shared Solar Programs in Virginia

COALITION FOR COMMUNITY SOLAR ACCESS

- In Virginia, there are two programs associated with Shared Solar:
  - Shared Solar Program; and
  - Multi-Family Shared Solar Program
- These programs were enabled through legislation and regulations established in 2020 and are now being refined in implementation processes before launching.
  - Shared Solar Program – Project registration opened October 2021, but actual customer enrollment cannot begin until Dominion develops a customer information platform, or by July 1, 2023
  - Multi-Family Shared Solar Program - Subscriber Organization/Project Registration open on July 1, 2020.
- Note that these should not be confused with Virginia's Community Solar Pilot program, which legislation established as a utility-led program in Dominion and APCo territories, or with programs established by electric cooperatives.
  - Electric cooperatives have the ability to establish community solar programs in their territory, and some already have, such as Central Virginia, Harrisonburg, and BARC Electric Coop

Shared Solar - Virginia Program Basics

COALITION FOR COMMUNITY SOLAR ACCESS

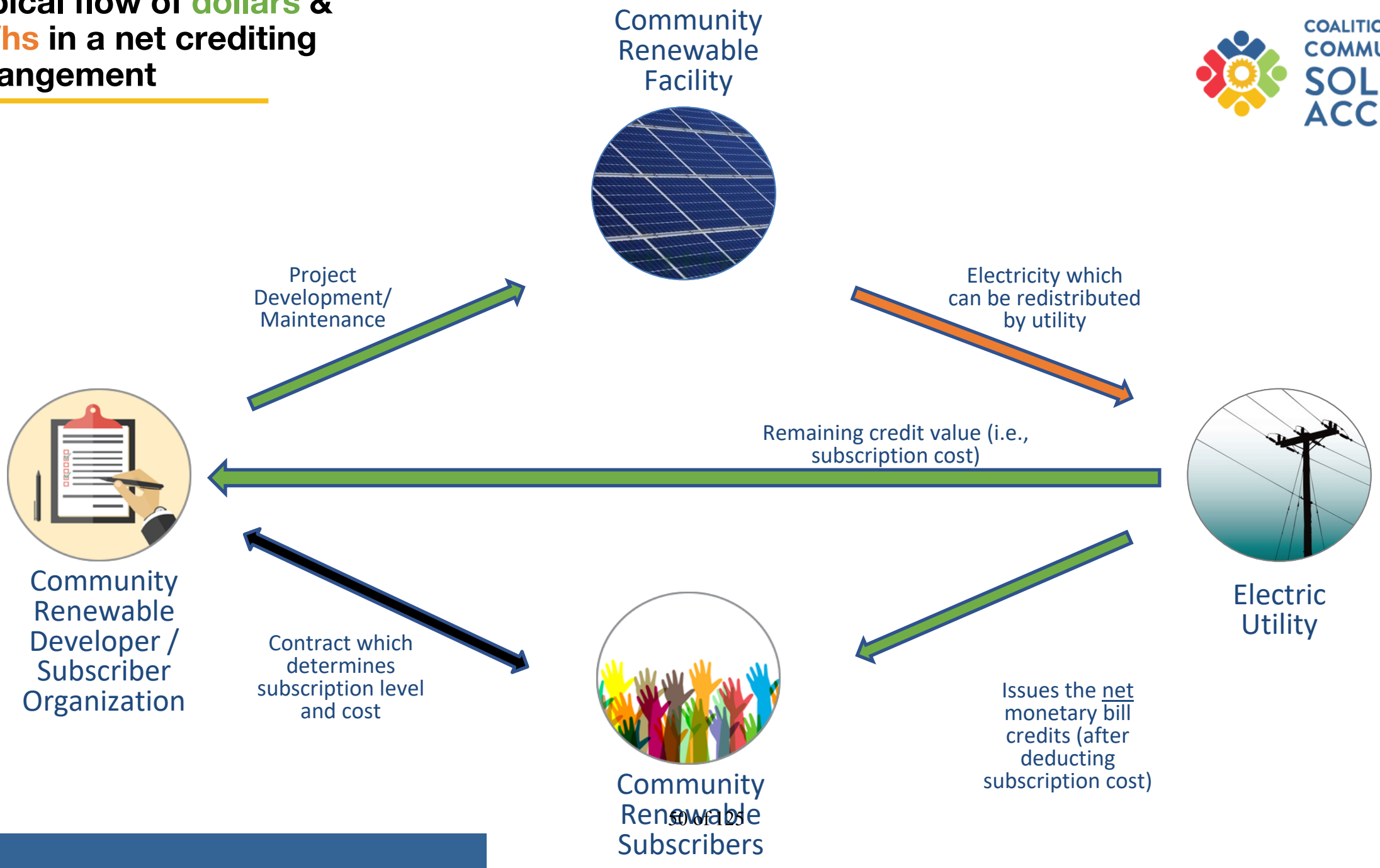
- **Territory** – Dominion Energy (Virginia)
- **Program size** – 150 MW, which is expanded by additional 50 MW (200 MW total) upon satisfying the initial low-income participation requirement (30% of capacity).
- **Project requirements** – A solar facility (or co-located facilities) up to 5,000 kW, on any single parcel of land, and connected to the distribution system.
- **Participant requirements** – At least 40% of project capacity subscribed by customers with subscriptions of 25 kW or less; and at least 30% comprised of low-income customers
- **Economics** –
  - Minimum bill determined by the Commission (low-income are exempt)
  - Applicable bill credit rate is a $/kWh rate calculated annually by dividing revenues (to the class) by sales (measured in kilowatt-hours), i.e., retail rate


COALITION FOR
COMMUNITY
SOLAR
ACCESS
For more info, visit:
www.communitysolaraccess.org

COALITION FOR COMMUNITY SOLAR ACCESS

Appendix

Typical flow of dollars & kWhs in a net crediting arrangement



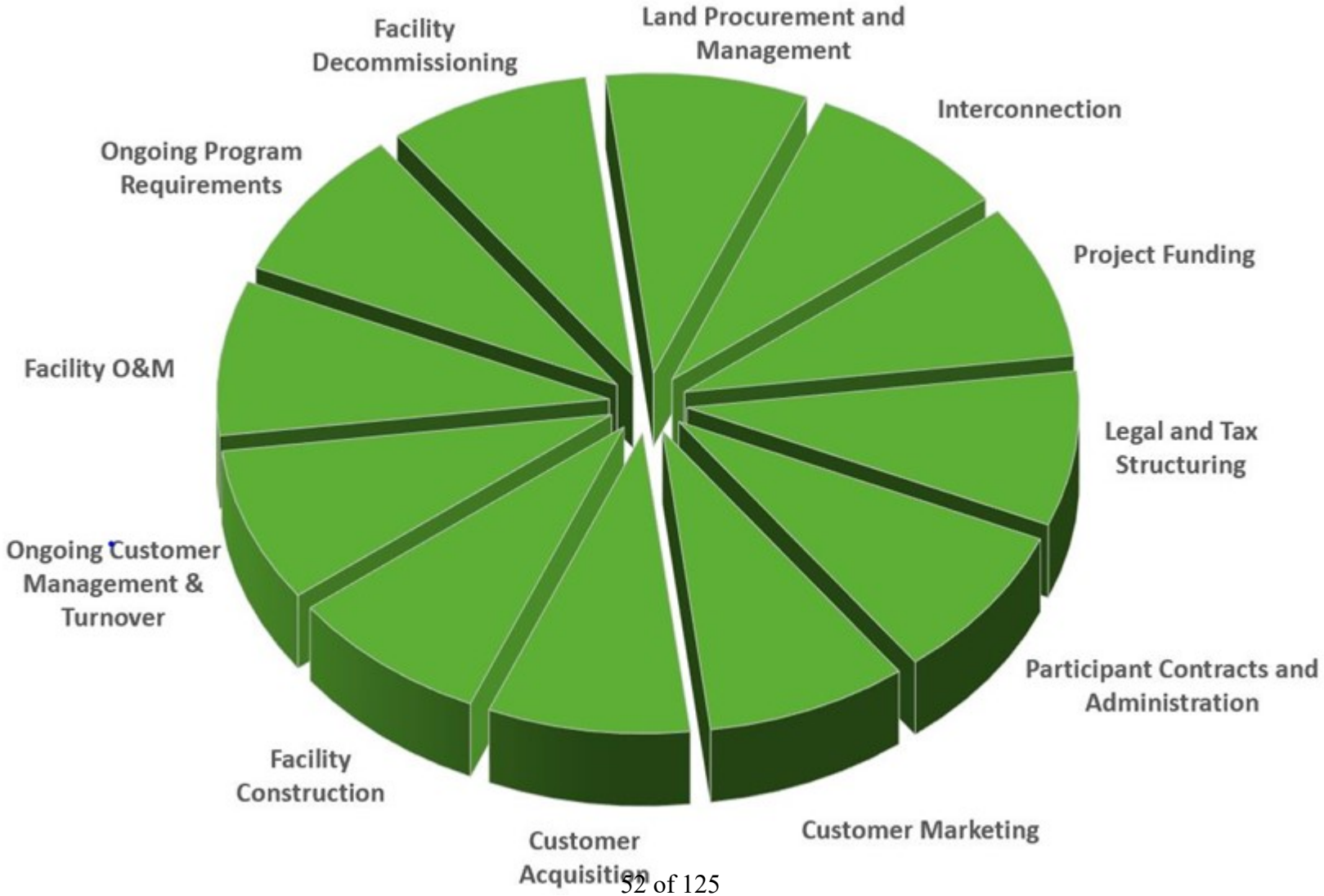
Typical Lifecycle of a Community Solar Facility

COALITION FOR COMMUNITY SOLAR ACCESS

Pre-development (1 - 3 months)	• Initial contact with the developer • Negotiation of lease option or letter of intent
Development (6 months - 3 years)	• Payment(s) for site control rights • Initial project diligence (survey, title, soils, etc.)
Construction (3 – 12 months)	• Solar plant is built by the developer • Utility builds out electric infrastructure to the site
Operations (20 – 30 years)	• Consistent and ongoing payments per lease agreement • Periodic site maintenance by the system owner
Decommissioning (3 – 12 months)	• Removal of all above and below ground equipment • Land is effectively returned to its prior condition

Community Solar – Key Components

COALITION FOR COMMUNITY SOLAR ACCESS



Attachment E

Economics of Shared Solar

Shared solar is a model under which customers can participate in a solar project located remotely from their premises and receive credit on their utility bill for the energy produced by the project. As the solar project is built, subscribers are assigned a portion of the project (in kilowatts or a percentage) based on their typical electricity usage. The solar project generates electricity each month and the subscriber's share is their proportion of that total production (measured in kilowatt-hours). The kilowatt-hours due to the subscriber are multiplied by the shared solar credit rate, resulting in a bill credit (in dollars) on the subscriber's next regular utility bill. Subscribers then pay the shared solar project a subscription fee (in dollars) per the contract terms between the subscriber and the project.

Shared solar projects do not provide electricity directly to their subscribers, but directly to the local electric grid and subscribers continue to receive their electric service as usual. Shared solar projects create benefit to subscribers by producing bill credits, which is the product marketed to potential customers. In exchange for the bill credits, subscribers pay subscription fees to the project owner.

Most commonly, the subscription fee is charged as fixed discount rate off of the bill credit. That discount generally ranges anywhere from 10%-20%. This is commonly referred to as a "pay-as-you-go" model and ensures the customer is guaranteed to save while the project is producing electricity. Many developers' standard contract terms also include no upfront costs, no cancellation fees and no credit checks.

Renewable Energy Credits ("RECs") may be retired on behalf of the subscriber, monetized, or delivered directly to the utility depending on the circumstances of subscriber demand and program design.

In the most typical model, shared solar projects earn revenue through subscription fees, monetization of RECs (if applicable) and monetization of the solar Investment Tax Credit (ITC). Shared solar projects incur costs through project development, construction, facility operation and maintenance, customer acquisition and ongoing customer management.

The shared solar business model is a needed innovation in solar development. Solar projects have high upfront costs which are recovered over the life of the project through payments for the energy produced. The risk inherent in that structure is the reliability of an entity to pay for that energy over the twenty-plus years of the life of the project. Traditionally, that limits customers to credit-worthy entities such as utilities, large corporations, or residential customers with high credit scores. This model fails to deliver solar to low-income customers and those with little or no credit.

The shared solar model mitigates the above risk, by offering favorable contract terms that incentivize customers to stay subscribed to the project, and in the event they do cancel their participation, by expanding the number of potential customers that could take their place.

Central to the creation of any shared solar program is the determination of the bill credit rate. Generally, the bill credit rate is a blend of factors designed to approximate the value of shared

solar. Those factors can be customer-centric, such as offsetting what a customer typically pays for electricity (similar to net metering), or system-centric, focusing on the value of what is provided to the grid. Most programs focus on the customer-centric factors, and provide a bill credit rate at the same or a similar rate to net metering. This is the case for the shared solar program in Dominion's service territory. Other programs, most notably New York's Value of Distributed Energy Resources ("VDER"), analyze certain energy, capacity and location values and convert those into a credit rate, often called a "value stack."

Regardless of the method, in order for shared solar projects to be viable the credit rate must be sufficient to cover costs, offer savings and provide a return in order to be financeable.

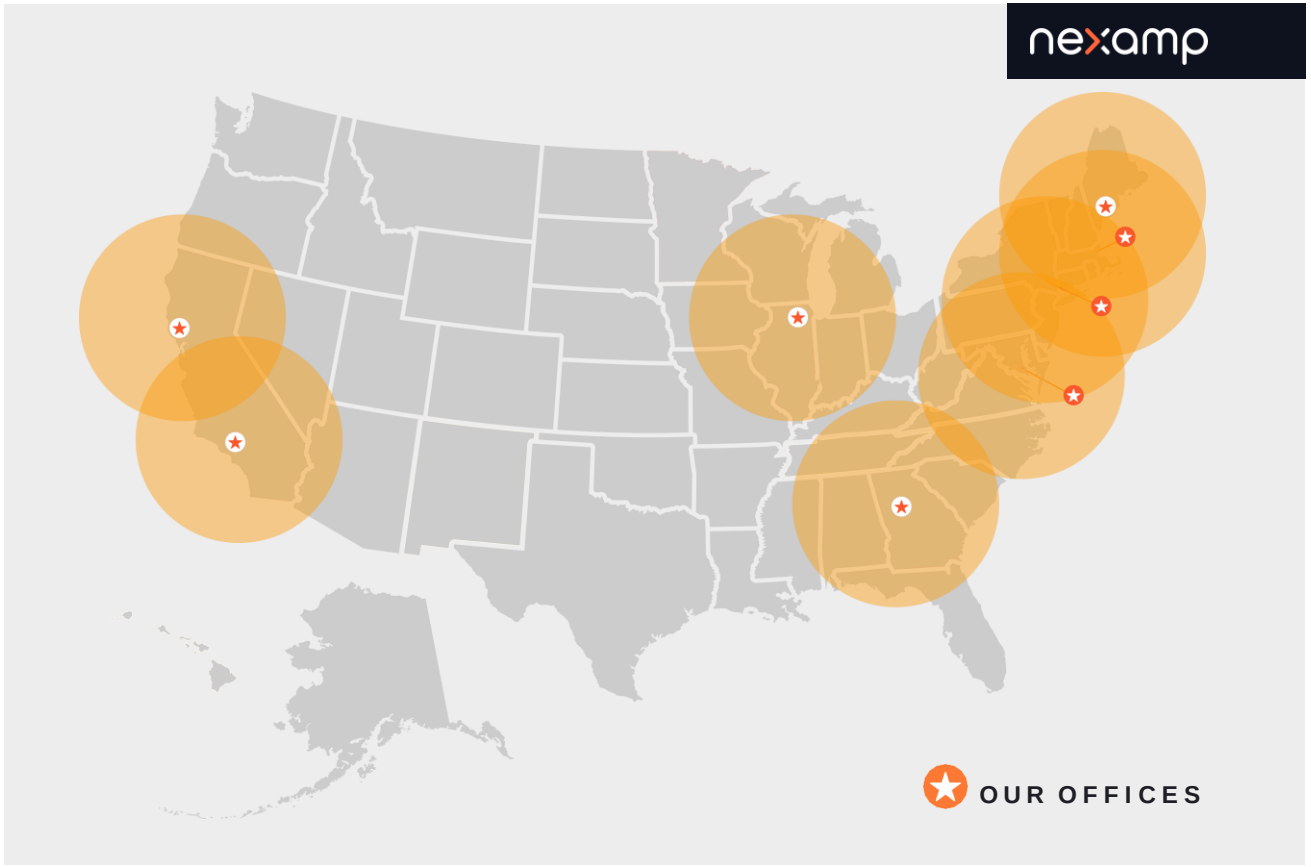
Shared solar projects create significant value for customers and can achieve a number of public policy goals while providing a range of system and societal benefits. Shared solar projects reduce demand strain on the distribution system and the need for transmission, and can readily integrate battery storage and operate as a non-wires alternative. Shared solar projects can also be sited with great flexibility—they can be ground-mounted, on rooftops or sited on landfills and brownfields, or even designed to complement agriculture by creating pollinator-friendly habitat, allowing animal grazing or even agrivoltaics. In addition, shared solar projects are generally less challenging to permit, and interconnect than utility-scale projects.

Shared solar projects drive local investment, creating jobs and revenue for local communities while closing an important equity gap, ensuring solar can produce savings for the low-income residents and communities that need it most.

SB 660 Shared Solar Working Group

September 23rd 2022

OUR
LOCATIONS



Get To Know Us

Nexamp is harnessing positive power and funneling it back into communities across the country. As one of the largest solar developers in the U.S., we're maximizing our social and environmental impact daily.

- We're a national, vertically integrated solar energy and storage company headquartered in Boston
- We develop, manage, and maintain community solar farms nationally
- We lead with inclusivity and equity, it is the foundation of our business model

OUR
PROCESS

The Nexamp Way

We're a vertically integrated organization that manages each phase of the project to ensure consistent and repeatable results.

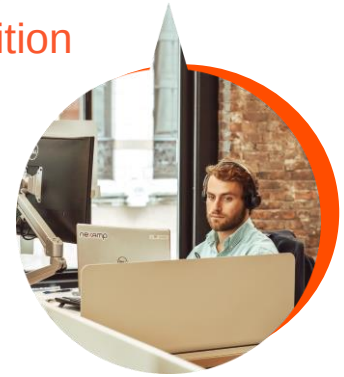
Development

Acquisition

Construction

Asset Management

Customer Acquisition



Customer Management

BY THE NUMBERS

We've Achieved Scale, While Delivering Results and Impact

a growing number of direct energy customers:

50,000+

12.5%

average annual savings per community solar customer

1.15+ million

solar modules deployed

420

gigawatt hours

being produced on all Nexamp farms

300,000 metric tons of CO2 averted

+282% growth since 2018

1GW

operational and construction projects

+372% growth since 2018

400MW

distributed generation

250+

completed projects

TOP SOLAR CONTRACTOR

9 years running

A+

rating on BBB

Agenda

01 What the Shared Solar Product Is

02 How the Shared Solar Model Works

03 Where Shared Solar Fits In Strategically

04 What the Benefits of Shared Solar Are

How Shared Solar Works

1. Solar project is built, subscribers are assigned a portion of the project (in kw or %) based on their usage

2. Project generates electricity each month; subscriber's share is their proportion of that total production (measured in kwh)

3. The kwh due to the subscriber are multiplied by the shared solar credit rate, resulting in a bill credit (in $) on the subscriber's next regular utility bill

4. Subscribers then pay the shared solar project a subscription fee (in $) per the contract terms between the subscriber and the project

What Do Shared Solar Subscribers Receive?

Utility Bill	
Monthly Usage	1500 kwh
Supply Charges	$60
Delivery Charges	$80
Miscellaneous	$10
Subtotal	**$150**
Community Solar Bill Credit *1000 kwh @ $0.10/kwh*	$100
Total Bill	**$50**

Shared Solar Bill	
Bill credits received	$100
Subscription Fee *10% discount to bill credit*	$90
Total due	**$90**

Savings Calculator	
Amount paid to utility	$50
Subscription Fees	$90
Subtotal	**$140**
Original Utility Bill *Before shared solar credit*	$150
Total Savings	**$10**

What Do Shared Solar Projects Offer?

Product Offering

- Shared solar projects do not provide electricity directly to their subscribers but to the local grid; subscribers continue to receive electric service as usual
- Shared solar project create benefit to subscribers by producing *bill credits*
  - The shared solar "product" that is marketed to subscribers is a bill credit, NOT electricity
- In exchange for bill credits, subscribers pay *subscription fees*
- RECs **may** be retired on behalf of subscriber, or monetized, delivered to utility, etc. Circumstances, subscriber demand and program design dictate

Contract Terms

- Most common model is a fixed discount rate off of the bill credit
  - Ranges anywhere from 10-20%
  - Ensures customer is guaranteed to save while project is producing (i.e., they will receive more in credits than they pay in fees)
- Commonly a "pay-as-you-go" model
  - No upfront costs, easy to cancel
  - Sometimes called "Netflix" approach
- Nexamp's standard terms are no upfront costs, no cancellation fees; just ask for notice to cancel; no credit checks

Shared Solar Model

Revenue

- Monetize RECs
- Monetize Investment Tax Credit
- Subscription Fees
- Project generally does not receive direct compensation for electricity produced
  - Projects must have customers paying subscription fees in order to earn full revenue

Costs

- Development-related costs
- Construction/EPC
- Customer Acquisition
- Customer Management and Churn
- Facility O&M

Mitigating Risk

- Solar projects have high upfront capital costs which are recovered over project life through payments for energy produced
- Risk: who will pay over 20+ years?
  - Utility scale: long-term contracts with utility or investment grade offtaker
  - Rooftop/BTM: Credit-worthy offtaker
- Old model fails low-income, people without credit
- Nexamp led transition to a new model: savings, favorable contract terms to mitigate risk
  - Customers tend to stay; if they leave, new customers readily able to replace

Bill Credit Rate

What determines the bill credit rate?

- Credit rate is generally a blend of factors to approximate the value provided
- Customer-centric factors
  - What are certain customers paying? Rate designed to offset, similar to NEM
- System-centric factors
  - What is the value of what is provided?
  - NY VDER is the prime example
  - Energy value, capacity value, locational value, etc.
  - Plus societal benefits
  - All quantified and “stacked” into a credit rate

- Generally, credit rates align with customer retail rate
  - Consistent with NEM, will vary by customer
  - Easy for customer to understand, functions as an offset
- Dominion’s credit rate is a simplified version of a retail rate credit
  - Formula: total revenues from customer class (in $) divided by total sales (in kwh) yields $ per kwh rate
  - $0.11 (residential) $0.07 (commercial)
- For projects to be viable, credit rate must be sufficient to cover costs, offer savings and provide a return in order to be financeable

What is the objective?

Lowest cost? Carbon Reduction? Rapid deployment?
Customer demand? Environmental Justice?

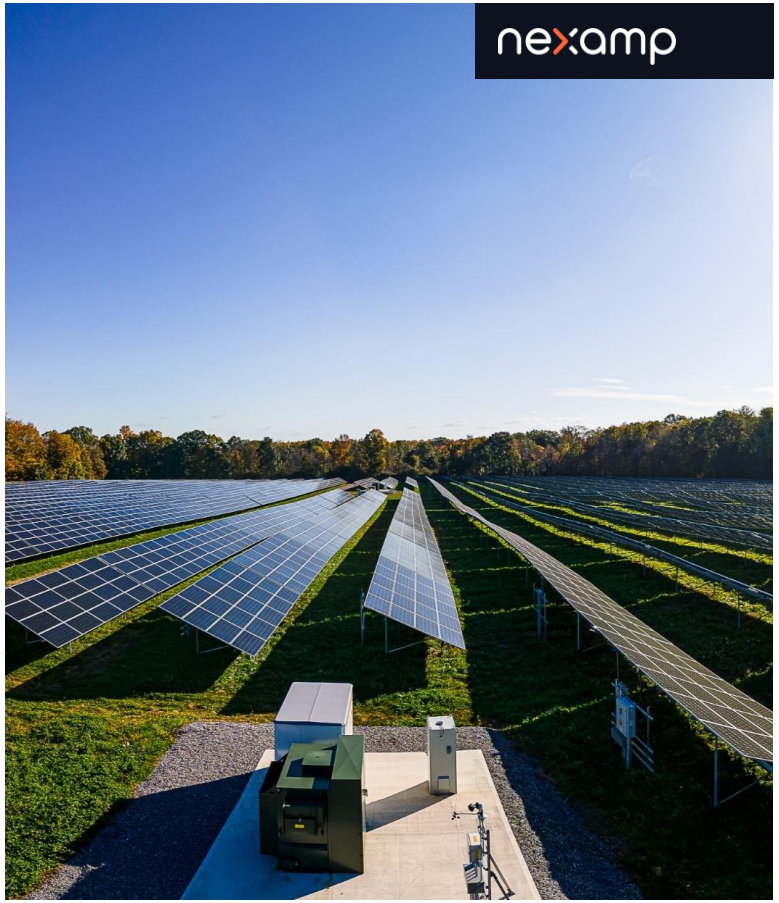
Why Shared Solar?

System Benefits

- Connected to distribution system
  - Reduced demand, need for transmission
  - Readily incorporate battery storage at scale
  - Function as non-wires alternative
- Flexible siting
  - Can be ground-mount, rooftop, sited on landfills/brownfields
  - Can be designed to complement agriculture, add pollinator-friendly habitat, animal grazing or even agrivoltaics
  - Less challenging to permit, interconnect than utility-scale – large projects, large risk
- Localized investment
  - Economic drivers: lease revenue, construction, jobs, tax revenue
  - Local solar, local benefits

Customer Benefits

- Who is benefiting from solar deployment?
- Increases equity
  - NEM limited to homeowners, generally wealthier
  - Low-income, renters, limited credit able to participate in shared solar
- Customers like shared solar
  - Under most common contract models, customers save money immediately without upfront costs
- New option for Coop members: direct participation
- Opportunity to leverage federal dollars
  - Shared solar best positioned to maximize locational and customer-based incentives under the ITC


nexamp

Watertown Renewables NWA

Non-Wires Alternative Solution for National Grid Substation in New York

Nexamp, together with National Grid, is addressing increased energy demand at the Coffeen substation in Watertown, New York with the construction of a new solar + storage facility that will eliminate the need for additional transmission lines or substation upgrades through a Non-Wires Alternative (NWA) approach..

The Watertown Renewables project features more than 20,000 solar panels generating 8.4 megawatts (MW) of renewable energy and 10 Tesla Megapack systems providing 31 megawatt hours (MWh) of energy storage. Together, the solar and storage components of Watertown Renewables are engineered to give National Grid the ability to call on the system for up to 5.7 MW / 29 MWh up to 25 times per year either from the panels or the batteries.

Thank You.

Jake Springer

jspringer@nexamp.com

207-751-3385

Attachment F

FEEDBACK DOCUMENT

What is feedback?

Feedback – Information about or reactions to a subject, which is used as a basis for improvement.

Principles of Collaboration

Programmatic	Cultural	Feedback
Access. Shared solar should be available to those who want it.	**Transparency.** The pricing, structures, and terms of a shared solar transaction should be made plain. Also, the groups participating in the collaboration will deal honestly and openly with one another.	**MEC** – As described today, the proposed programs pricing, structure, etc., are impenetrable, a/k/a a "shell game." **REC** - The starting point for transparency as it relates to both access and ratemaking is clearly defining the costs and benefits that should be incorporated into such an evaluation. This can be determined either by a stakeholder group or through a Commission proceeding. This topic has come up before in net metering cases. If a party believes that new costs/benefits need to be taken into consideration beyond those typically reviewed in Virginia cases, the responsibility to present the rationale and model for evaluation lies with the stakeholder making such an assertion. This step is imperative if cooperatives are confronted with the topic of explaining cost-shifting.
Ratemaking Issues. Subsidization from nonparticipating consumers should be minimized.	**Simplicity.** Shared solar should be easy to understand and implement; details left to local control; unnecessary elements eliminated.	**REC** – See above.
Benefits to Participants. Shared solar should result in reasonable expectation of economic benefit for subscribing customers.	**Investment.** The groups participating in the collaboration are invested. The project's risks should be on the Subscriber Organization. Goal is to encourage long-term community partnerships.	**REC** – See above.

Potential Policy Ideas

Ideas	Feedback
Existing Solutions. ODEC Distributed Solar Initiative Existing Voluntary Rate Authority	**REC** - Until the economics of traditional rate design are re-evaluated, the current existing solutions appear reasonable. There appear to be no barriers to solar developers participating in the current RFP process by the cooperative's generation providers.
Legal Authority. Is a new statute/legal authority needed? What are existing models of statutes that work? What would be beneficial to include in a new statute? Should a mandate be required? Is it necessary? Is the law governing the Dominion Energy shared solar program suitable for Co-ops/fit for purpose?	**REC** – See above. Encourage a review of the topics brought forward in Case No. PUR-2020-00125. These topics may offer up issues/concepts that need to be considered in developing a voluntary pilot program. More importantly, the status of the case at this time offers up a situation that can occur when a program is developed to meet a legislative timeframe without fully vetting through the issues/concerns of all stakeholders
Project Size. What size should a shared solar project be?	**REC** – Project size should align with what Co-ops do best: – Provides energy to its member-owners – Takes advantage of economies of scale – Engages members directly – Optimizes system for maximum value.

Should there be limitations, considering current Dominion program?	
Joint Projects. Should Co-ops be allowed to do these projects together?	**REC** – Yes, Co-ops should be allowed to do the projects together.
Subscription Limitations. What sorts of limitations should exist on subscriptions? Should there be a maximum? How do we maximize participation to encourage long-term community partnerships? What kind of flexibility should be maintained?	
Interconnection. Use existing SGI Rules? Distribution system/voltages.	
Sale. Who is offtaker?	**REC** - One avenue that should be explored is whether industrial customers that are interested in meeting environmental initiatives such as RE 100 may truly provide value to the community by playing a role in purchasing additional RECs which may aid in allowing participation by low-income customers.

Who is buyer? Is this different from offtaker?	
Consumer Transaction. What should the consumer-facing transaction look like? What consumer protections should be in place?	
Utility Transaction. How should any rate crediting work? Should this be a hard-number, subject to negotiation between the Subscriber Organization/Co-op? How set? Ceiling? Floor? How would administrative costs be recovered?	**REC** - Rate crediting should be developed to require little if any redevelopment of the customer information system. Additionally, the transaction billing information should provide the member with information that is easily understood from a billing perspective.
Electronic Data Interchange (EDI). How should/would monthly metering data be shared between the Co-op and the Subscriber Organization?	

Subscription Preconditions. When should a project be allowed to move forward?	
Renewable Energy Certificates. Who owns the RECs? How/when should they be retired?	
Unsubscribed Generation. What should happen if a portion of a project goes unsubscribed?	
Low-Income. How, if at all, should the interests of low-income member-consumers be addressed? How will existing distressed communities/economic conditions be taken into account?	

Attachment G

Full List of Attendees at September 23, 2022 Stakeholder Meeting

Patrick Cushing	CCSA
Jake Springer	NEXAMP
Laura Merten	Apex Clean Energy
Sam Brumberg	VMDAEC
Andrew Vehorn	VMDAEC
Sadie Gary	VMDAEC
Jacob Newton	VMDAEC
Leo Radkowski	ANEC
Kevin Yingling	DEC
Jeff Ahearn	CBEC
Kyle Allwine	NNEC
Lee Brock	REC
Jennifer Sebastian	REC
Jason Carter	SVEC
Cassandra Frysinger	SVEC
George Felts	SEC
Carol Myers	SEC
Stephanie Kane	ODEC
Howard Spinner	NOVEC
Chris Botulinski	BARC
Andrew Cotter	CVEC
Jim Guy	MEC
Scott Wallace	SEC
Pete Gallini	ODEC
Kirk Johnson	ODEC
Josephas Allmond	SELCVA
Will Cleveland	SELCVA
Justin Blitz	Cypress Creek Renewables
Arlen Bolstad	SCC
David Essah	SCC
Kelli Gravely	SCC
Carrie Hearne	Virginia Energy
Sarah Hollberg	Alliance for the Shenandoah Valley
Ben Hoyne	VA-SUN
Tyler Jones	Pivot Energy
Connor Kish	Sierra Club
Richard Michaux	SCC
Martha Moore	Farm Bureau
Frederick Ochsenhirt	SCC
Brandon Smithwood	Dimension Energy
Aaron Sutch	VA-SUN
Shepelle White	SCC
Missy Wesolowski	Summit Ridge Energy
Carmen Bingham	VPLC

Virginia, Maryland & Delaware Association of Electric Cooperatives

COALITION FOR COMMUNITY SOLAR ACCESS

Meeting of CCSA & Cooperative Representatives | September 30, 2022

11:30 AM – 1:00 PM

The meeting was convened by Sam Brumberg of the VMDAEC and Charlie Coggeshall of the CCSA at approximately 11:30 AM on September 30, 2022.

CCSA Representatives Present:
Charlie Coggeshall
Patrick Cushing
Jake Springer
Laura Merten

VMDAEC Staff Present:
Sam Brumberg
Andrew Vehorn
Sadie Gary
Jacob Newton

Cooperative Representatives Present:

Leo Radkowski	ANEC
Kevin Yingling	DEC
Kyle Allwine	NNEC
Lee Brock	REC
Jennifer Sebastian	REC
Linsey Watson	REC
Jason Carter	SVEC
Cassandra Frysinger	SVEC
George Felts	SEC
Carol Myers	SEC
Stephanie Kane	ODEC
Howard Spinner	NOVEC
Chris Botulinski	BARC
Andrew Cotter	CVEC
Jim Guy	MEC
Pete Gallini	ODEC
Kirk Johnson	ODEC

Mr. Brumberg summarized the takeaways and reactions from the September 27, 2022, external stakeholder meeting. The summarized stakeholder concerns specifically included: (1) the potential subsidization of shared solar programs by non-participating members, (2) the legality of advertising solar energy if the developer is monetizing the renewable energy credits (RECs), which would create a situation where non-solar energy or undifferentiated electrons would be the only product purchased by a cooperative, (3) a history of misleading marketing tactics employed

by some solar developers, including relatively recently,[3] (4) the implications for shared solar in light of any changes to Virginia's retail access laws, and (5) the nature of the shared solar product as an energy product versus an investment product.

Mr. Coggeshall acknowledged the aforementioned concerns. He stated CCSA members have never done projects in cooperative territory and the SB660 process has been educational on the cooperative model. As such, he recognized all the concerns put forth in the external stakeholder meeting. Mr. Coggeshall committed to continuing to work with VMDAEC and the Cooperatives to find a shared solar model that will work in the cooperative territory.

Ms. Merten also recognized all the concerns put forth in the external stakeholder meeting. She also emphasized the importance of local Cooperative board control of projects affecting its territory and the importance of ensuring the shared solar project developers do not get in between the Cooperative and its member-consumers.

Cooperative representatives expressed a willingness to continue working with CCSA and solar developers in an effort to bring a shared solar-style project that works within the cooperative business model to cooperative territories.

The meeting adjourned at 12:45 PM.

[3] *See, e.g.*, Solar Company Shuts Down Suddenly, Leaving Virginia Residents Searching for Answers, WRIC News, *available at* https://www.wric.com/news/taking-action/solar-company-shuts-down-suddenly-leaving-virginia-residents-searching-for-answers/ (last accessed Nov. 16, 2022).

Virginia, Maryland & Delaware
Association of Electric Cooperatives

COALITION FOR COMMUNITY SOLAR ACCESS

Meeting of CCSA & Cooperative Representatives | November 7, 2022

1:00 PM – 3:00 PM

The meeting was convened by Sam Brumberg of the VMDAEC and Charlie Coggeshall of the CCSA at approximately 1:00 PM on November 7, 2022.

CCSA Representatives Present:	Charlie Coggeshall Jake Springer Laura Merten
VMDAEC Staff Present:	Sam Brumberg Andrew Vehorn Sadie Gary Jacob Newton

VMDAEC and CCSA discussed the drafting and timelines of the SB 660 report. Both parties agreed that the likely outcome of the SB660 report would not recommend legislation. However, both parties will continue to engage in discussions and work together. Internal working timelines and responsibilities were established for the drafting process.

The group planned out the agenda for the November 9, 2022, in-person stakeholder meeting. Additionally, the group decided to host two additional public input sessions on November 18, 2022, and November 21, 2022, for external parties to react to the current draft of the SB660 report.

The meeting was adjourned at 1:16 PM.

Meeting of CCSA, Cooperative Representatives, & Stakeholders | November 9, 2022

9:00 AM – 3:00 PM

The meeting was convened by Sam Brumberg of the VMDAEC and Charlie Coggeshall of the CCSA at approximately 10:00 AM on November 9, 2022.

CCSA Representatives Present:	Charlie Coggeshall	
	Jake Springer	
	Laura Merten	
VMDAEC Staff Present:	Sam Brumberg	
	Andrew Vehorn	
	Sadie Gary	
	Jacob Newton	
Cooperative Representatives Present:	Leo Radkowski	ANEC
	Lindsey Watson	REC
	Kevin Yingling	DEC
	Kyle Allwine	NNEC
	Lee Brock	REC
	Jennifer Sebastian	REC
	Jason Carter	SVEC
	Cassandra Frysinger	SVEC
	Stephanie Kane	ODEC
	Howard Spinner	NOVEC
	Chris Botulinski	BARC
	Andrew Cotter	CVEC
	Jim Guy	MEC
	Pete Gallini	ODEC
	Kirk Johnson	ODEC
	Jeff Ahearn	CBEC
External Stakeholders Present:	Richard Michaux	SCC
	Justin Blitz	CCR
	Kelli Gravely	SCC
	Sarah Hollberg	Alliance for the Shenandoah Valley
	Tyler Jones	Pivot Energy
	Eva Raczkowski	Cypress Creek Renewables
	Carmen Bingham	VPLC
	David Essah	SCC
	Arlen Bolstad	SCC
	Shepelle Watkins	SCC

Mr. Brumberg facilitated the introduction of meeting attendees and gave an overview of the anticipated agenda and timeline.

Laura Merten presented on the "Inflation Reduction Act." A discussion ensued on the Inflation Reduction Act as it pertains to shared solar projects in Cooperative service territories. A narrative of the presentation and slide deck is attached as Attachment H.

Mr. Brumberg facilitated a discussion on the existing comments and feedback. The group was encouraged to submit additional written comments and feedback.

Mr. Brumberg opened the floor for discussion on the preferred outcome of the report of the stakeholder group. The discussion ensued as follows:

- Mr. Brumberg highlighted the previously-discussed factors of the localized nature of the Cooperative model, the size differences among Cooperatives, and cultural differences from service territory to service territory as factors to consider when evaluating a statewide mandate approach. He also highlighted that the Association and CCSA need more time to discuss these issues but need to produce a report in the interim. Cooperatives in Virginia are relatively unique in the fact they are both governed by a locally-elected Board and fully-regulated by the Commonwealth.
- Mr. Coggeshall stated that CCSA is not necessarily disappointed that CCSA would not be advocating for legislation for Cooperatives in the 2023 General Assembly session and acknowledged that legislation is not needed for shared solar projects in the Cooperative territories. He also stated that the Cooperatives are already providing localized off-site solar projects in their territories. He also noted that he looks forward to continuing the discussion and the potential for returning in the 2024 legislative session if it makes sense for both organizations. He has enjoyed working with and learning from the Cooperatives throughout this process. Mr. Coggeshall stated that CCSA has not historically worked directly with Cooperatives in other markets, and this is an exciting and important frontier for the industry.
- Ms. Bingham stated that shared solar programs in Cooperative territories will have to be sized to each unique Cooperative's circumstances. She stated she does not want to see a one-size-fits-all approach to shared solar in Cooperative territory. However, she stated there should be minimum standard consumer protections and a guidance outline of program standards. The Cooperatives should be allowed to think outside the box when approaching shared solar.
- Ms. Hollberg stated her organization is interested in allowing the Cooperatives to maintain flexibility in approaching shared solar projects to tailor projects to the needs of specific localities.
- Mr. Cotter expressed there may be a concern from localities in locating these projects in or around residential communities.
- Ms. Sebastian and Mr. Allwine asked a question regarding the location of the projects, and Mr. Coggeshall responded the project is more like an investment than a localized project right next door. Ms. Bingham clarified she hopes that even though these projects are being

described as investments, they are still in close proximity to the communities the project is serving. Mr. Coggeshall clarified the intended projects would be in Cooperative territories.

- Ms. Sebastian brought up the topic of RECs coming off the shared solar projects. She stated there would be greater value in more localized RECs.
- Mr. Cotter asked for clarification between shared solar and the existing community solar programs. A discussion ensued on the differences and similarities.

Mr. Brumberg presented the remaining timeline for the stakeholder group and the production of the mandated report. Finally, additional discussion was had regarding a recent article on shared solar appearing in the *Cardinal News*. It is attached hereto as Attachment I. The group briefly reiterated the opinion of all that the autonomy of locally elected Co-op boards of directors was important, as this was mentioned in the article.

Full attendee list is attached as Attachment J. The meeting was adjourned at 12:00 PM.

Attachment H

Narrative of Inflation Reduction Act Presentation

The Inflation Reduction Act (IRA) was signed into law on August 16th, 2022, creating unprecedented runway for renewable energy projects across market segments. The legislation includes $369 billion earmarked for energy security and climate change, including several provisions for wind and solar. The IRA contains the highest level and longest duration of energy incentives ever passed by Congress, including incentives for the solar industry at large, as well as several incentives that specifically support distributed and community solar. Much will be worked out through implementation via the Treasury Department. Community solar checks a lot of the boxes aligned with IRA intent – local investment, resiliency, increased equity, carbon offset.

This legislation includes:

- 10 (plus) years of full-value credits for onshore/offshore wind, solar, storage, and hydrogen.
- Production Tax Credit (PTC) / Investment Tax Credit (ITC) (with solar PTC) through the end of 2024; tech-neutral credits from 2025-2032 (or later).
- Full value credits tied to prevailing wage and apprenticeship requirements.
- Adders/bonuses available for complying with domestic content requirements and investing in projects in certain energy and low-income communities.
- Direct pay available for hydrogen and advanced manufacturing PTC for the first 5 years; otherwise mostly limited to tax-exempt entities.
- New transferability program is available for entities unable to elect direct pay—allowing the selling of credits to unrelated parties.
- Accelerated depreciation restored for clean energy projects (clean energy tax credits already protected) in corporate minimum tax.
- No transmission ITC, but transmission eligible for nearly $10 billion through various programs.
- Offshore: Trump Administration's offshore wind moratorium lifted; offshore wind leases tied to oil and gas leasing on federal waters/lands.
- Funding for permitting resources at DOE, FERC, DOI, NOAA and the Federal Permitting Improvement Steering Council.

Specifically for solar, the IRA includes tax credits covering 30% of the costs of community solar projects with additional bonus credits of 20% for projects at affordable housing properties and 10% for projects in low-income communities. Distributed Generation (including Community Solar) is eligible for an ITC expanded to include interconnection costs for transmission/distribution of electricity produced/stored, due to disproportionately high interconnect costs for projects five megawatts and below.

In addition to tax credits, the bill allocates $7 billion to states for distributed generation programs, which will be administered by the EPA. These funds are available to states, municipalities, and non-profits. Funds are available through September 2024 on a competitive basis to create of expand zero-emission programs, including distributed solar programs.

Stackable Bonus Credits

Additional tax credits (above the full value) are available to projects that satisfy certain criteria, such as:

- Low-to-Moderate Income bonus credits;
- Allocated credits capped at 1.8 GW through 2032;
- 10% bonus for facilities in low-income communities;
- 20% bonus for projects that provide at least 50% of financial benefits of the electricity for low-income consumers;
- Energy community bonus credits;
- Brownfield site;
- Substantial tax revenue or employment from fossil fuels;
- Census tract adjacent to a historical coal mine;
- Unemployment rate above the national average; and
- Domestic manufacturing and prevailing wage bonus credits.

Summary of the Inflation Reduction Act

APEX CLEAN ENERGY

September 2022

Apex is leading the renewable energy transition across the United States

clean energy development portfolio, the largest in the United States

of commercialized production capacity across more than 30 financed projects

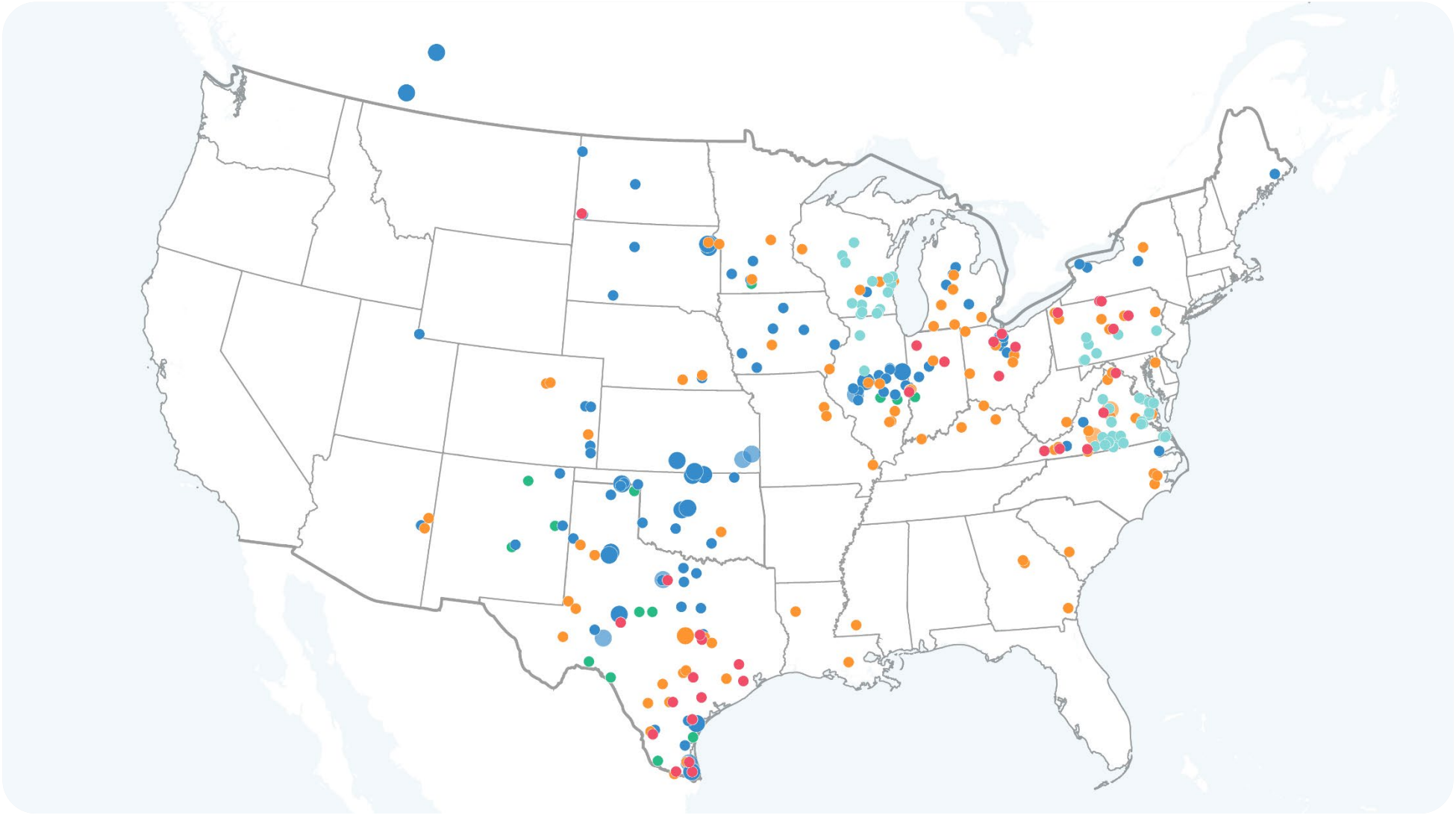
tons of CO_2 displaced over the lifetime of built projects

of utility-scale projects completed, in construction, or financed

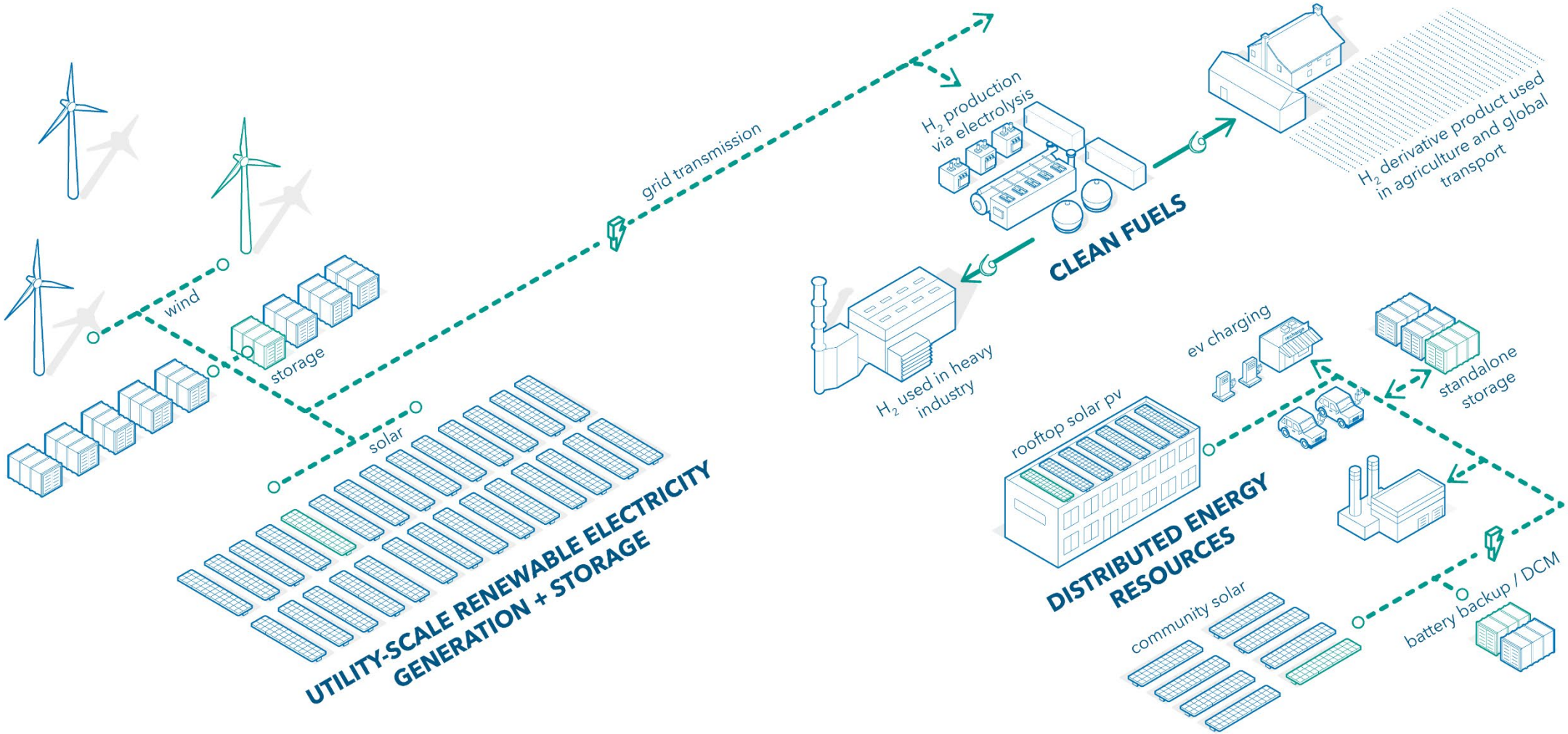
of assets that we operate and manage

acres under lease, an area larger than of the state of Rhode Island

Apex provides renewable energy solutions across power markets



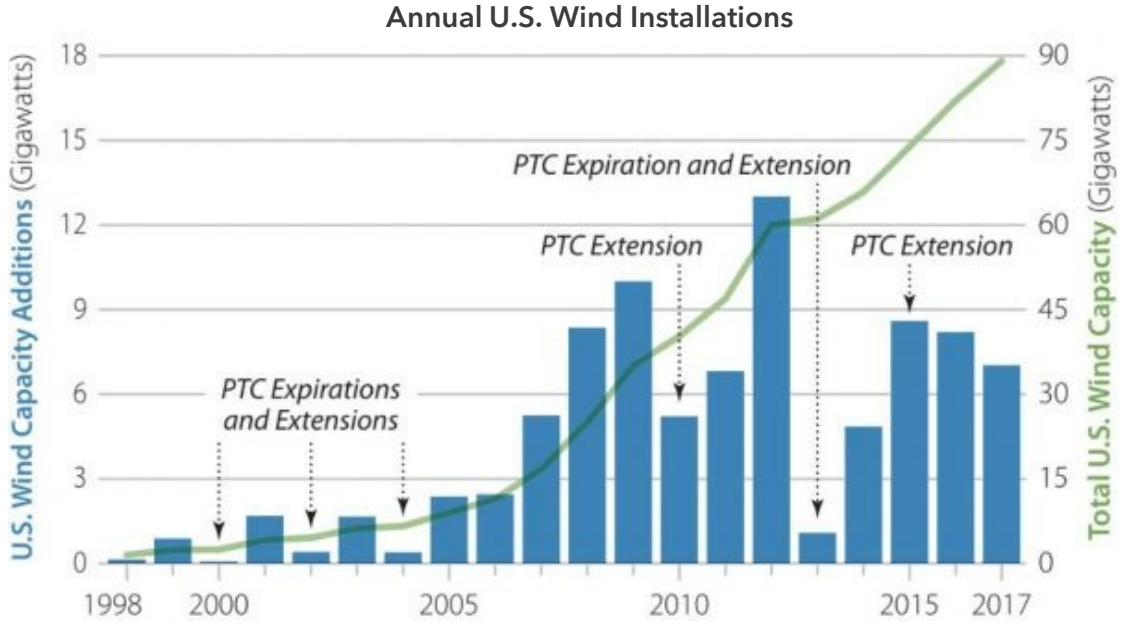
Apex is expanding the renewable frontier across North America at multiple scales

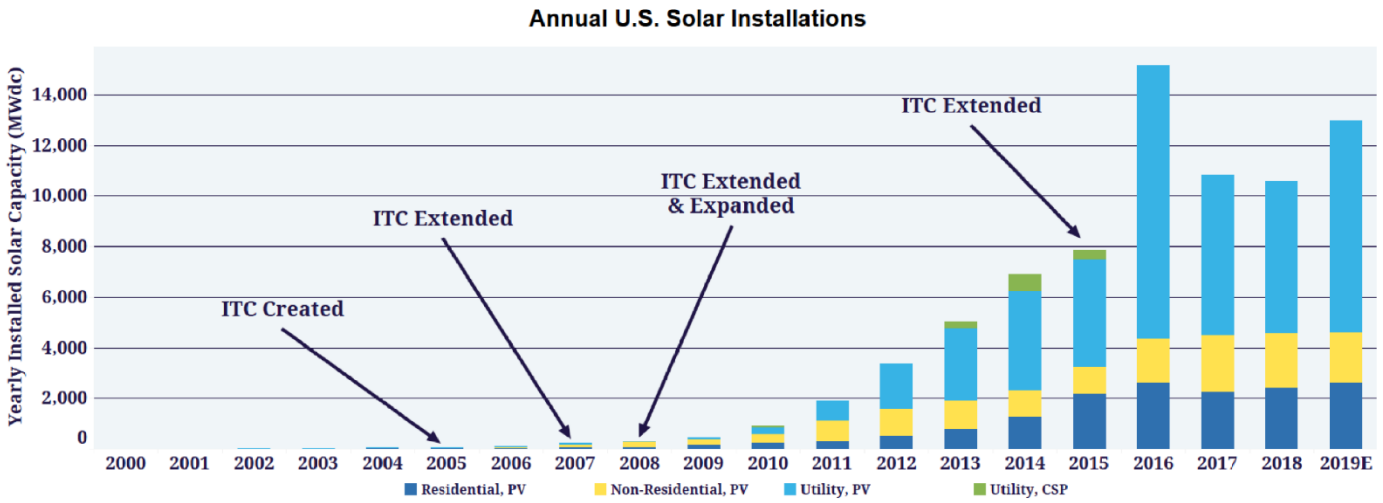


APEX CLEAN ENERGY

Without tax credits:

- Inefficiency of build cycle
- Artificial requirements of financial partners
- Limited construction capacity





Unprecedented runway for renewable energy projects

- The Inflation Reduction Act was signed into law on August 16th, 2022.
- The legislation includes $369 billion earmarked for energy security and climate change, including several provisions for wind and solar.
- The IRA contains the highest level and longest duration of energy incentives ever passed by Congress- including incentives for the solar industry at large, as well as several incentives that specifically support distributed and community solar.
- Much will be worked out through implementation via the Treasury Department.
- Community solar checks a lot of the boxes aligned with IRA intent – local investment, resiliency, increased equity, carbon offset.

10 (plus) years of full-value credits for onshore/offshore wind, solar, storage, and hydrogen.

- PTC/ITC (with solar PTC) through the end of 2024; tech-neutral credits from 2025-2032 (or later).

Full value credits tied to prevailing wage and apprenticeship requirements.

Adders/bonuses available for complying with domestic content requirements and investing in projects in certain energy and low-income communities.

Direct pay available for hydrogen and advanced manufacturing PTC for the first 5 years; otherwise mostly limited to tax-exempt entities.

New transferability program is available for entities unable to elect direct pay—allowing the selling of credits to unrelated parties.

Accelerated depreciation restored for clean energy projects (clean energy tax credits already protected) in corporate minimum tax.

No transmission ITC, but transmission eligible for nearly $10 billion through various programs.

Offshore: Trump offshore wind moratorium lifted; offshore wind leases tied to oil and gas leasing on federal waters/lands.

Funding for permitting resources at DOE, FERC, DOI, NOAA and the Federal Permitting Improvement Steering Council.

Source: American Clean Power, Summary of the Inflation Reduction Act

Tax credits covering 30% of the costs of community solar projects with additional bonus credits of 20% for projects at affordable housing properties and 10% for projects in low-income communities.

Distributed Generation/ Community Solar

- ITC is expanded to include interconnection costs for transmission/distribution of electricity produced/stored
  - Due to disproportionately high interconnect costs for community solar
  - Inclusion of costs for projects 5mw and under

- $7 Billion to states for distributed generation programs, run by EPA
  - States, municipalities and non-profits are eligible
  - Funds are available through September 2024 on a competitive basis to create of expand zero-emission programs, including distributed solar programs.

  - Many additional incentives and grants available through DOE

Stackable Bonus Credits

- Additional tax credits (above the full value) are available to projects that satisfy certain criteria
- Low-to-Moderate Income bonus credits
  - Allocated credits capped at 1.8GW through 2032
  - 10% bonus for facilities in low-income communities
  - 20% bonus for projects that provide at least 50% of financial benefits of the electricity for low-income consumers
- Energy community bonus credits
  - Brownfield site
  - Substantial tax revenue or employment from fossil fuels
  - Census tract adjacent to a historical coal mine
  - Unemployment rate above the national average
- Domestic manufacturing and prevailing wage bonus credits

Source: American Clean Power, Summary of the Inflation Reduction Act

All about implementation

- Lots will be worked out through implementation:
  - Queuing process to claim credits
  - Timing of credits
  - Income verification
- Treasury and IRS will need to ramp up staffing to write all the guidance
- Many new technologies included; they will need to lean on various federal agencies
- New credits are slated to start at the beginning of 2023, so there will need to be something (if not permanent) in place by then.
- Low-Income Customers needs to be defined– want to lower barriers to participate, rather than add burden
- Industry is asking for clarity from Treasury on a number of issues.

Stackable credits can provide major value to cooperatives.

- The Inflation Reduction Act allows tax-exempt entities, states and political subdivisions, the Tennessee Valley Authority, Alaska Native Corporations, and Indian tribal governments, to take direct pay equal to the amount of certain specified credits.

- Additional $1 billion earmarked for rural renewable energy electrification loans and expansion of the program to include storage

- Creates a voluntary $9.7 billion grant and loan program designed specifically for electric co-ops that buy or build new clean energy systems to boost resiliency, reliability, and affordability, including through clean energy and energy
- efficiency upgrades

- Co-ops will be able to receive a grant for as much as 25% of their project cost, with a maximum award of $970 million for any single co-op.

Community Solar Meets the Moment

The Inflation Reduction Act calls for:

- Clean energy tax credits
- Clean manufacturing
- Domestic clean energy job creation
- Healthy ports
- Energy efficiency and electrification
- Land conservation
- Environmental justice investments

First Solar announces new U.S. panel factory following the Inflation Reduction Act

Inflation Reduction Act prompts Turkish company to increase US gigafactory output to 3GWh

Toyota adds $2.5 billion to its investment in a North Carolina battery plant.

Honda, LG Energy Plan $4.4 Billion EV Battery Factory in U.S.

Appendix Slides

Status quo statute includes a "sunsetting" ITC, without a solar PTC or standalone storage ITC.

- Prior to the Act, tax credits for renewable energy were renewed by Congress on an almost annual basis, which created uncertainty in the market.
- Having the tax credits established for a minimum of 10 years can provide clarity for planning future deals, greenfield activity, and investments.

Current Law (pre-IRA)

	2022	2023	2024	2025	2026	2027	2028	2029	2030
ITC for Solar*	26%	22%	10%	10%	10%	10%	10%	10%	10%
ITC for Stand-Alone Storage	0%	0%	0%	0%	0%	0%	0%	0%	0%
PTC for Solar ($/kWh)	$0	$0	$0	$0	$0	$0	$0	$0	$0

Source: SEIA Summary of Inflation Reduction Act (H.R. 5376)

* Projects that begin construction in 2022 and are online before the end of 2025 are eligible for 26%. Projects that begin construction in 2023 and are online before the end of 2025 are eligible for 22%. Projects that begin construction after 2023 are eligible for 10%. Additional transition guidance will have important implications.

** The PTC is adjusted for inflation each year by the IRS. The levels reported for years 2023-2035 assume annual inflation of 2% for illustrative purposes.

Source: SEIA Summary of Inflation Reduction Act

- ITC extension followed by tech-neutral program
  - 30% credit rate renewable before guidance is issued for ITC eligible facilities through 2024.
  - In 2025, tech neutral credit
  - Standalone storage credit

	2022†	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	100% 2033*	75% 2034*	50% 2035*	0% 2036*
Projects Under 1 MWac															
Base ITC*	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	22.5%	15%	0%
Bonus for Meeting Domestic Content Minimums**		10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
Bonus for Siting in "Energy Community"		10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
Allocated Low-Income Bonus***															
Low-Income Community as Defined by the New Markets Tax Credit or on Indian Land		10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	7.5%	5%	0%
Qualified Low-Income Residential Building Project or Qualified Low-Income Economic Benefit Project		20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	15%	10%	0%
Projects Over 1 MWac that Begin Construction Less than 60 Days After Dept. of Treasury Issues Guidance															
Base ITC*	30%	30%	30%												
Bonus for Meeting Domestic Content Minimums**		10%	10%												
Bonus for Siting in "Energy Community"		10%	10%												
Allocated Low-Income Bonus for Projects Under 5 MWac***															
Low-Income Community as Defined by the New Markets Tax Credit or on Indian Land		10%	10%												
Qualified Low-Income Residential Building Project or Qualified Low-Income Economic Benefit Project		20%	20%												
Projects Over 1 MWac that Begin Construction 60 Days After Dept. of Treasury Issues Guidance															
Base for All Projects															
Base ITC*	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	4.5%	3%	0%
Bonus for Meeting Domestic Content Minimums**		2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	1.5%	1%	0%
Bonus for Siting in "Energy Community"		2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	1.5%	1%	0%
Adders for Projects that Meet Labor Requirements															
Base ITC*	24%	24%	24%	24%	24%	24%	24%	24%	24%	24%	24%	24%	18%	12%	0%
Bonus for Meeting Domestic Content Minimums**		8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	6%	4%	0%
Bonus for Siting in "Energy Community"		8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	6%	4%	0%
Allocated Low-Income Bonus for Projects Under 5 MWac***															
Low-Income Community as Defined by the New Markets Tax Credit or on Indian Land		10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	7.5%	5%	0%
Qualified Low-Income Residential Building Project or Qualified Low-Income Economic Benefit Project		20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	15%	10%	0%

Source: SEIA Summary of Inflation Reduction Act (H.R. 5376)

* Actual phased down is based on the later of the dates shown or the year after electric sector CO2 emissions drop 75% below 2022 levels.

** Must include 100% domestic iron/steel and an increasing percent of manufactured goods over time.

*** Allocated credits will be based on an application and award process that will have to be developed by the Secretary. Maximum of 1.8 GWac/year.

†Bonus credits available for projects placed in service after December 31, 2022.

Source: SEIA Summary of Inflation Reduction Act

Tax-exempt entities may qualify for direct pay

- Allows a limited set of organizations to treat certain tax credit amounts as payments of tax. Payments in excess of tax liability can be refunded to these organizations, allowing the credits to be received as "direct pay."
- Direct pay is only available for an "applicable entity," which generally only includes a tax-exempt entity, a State or local government, the Tennessee Valley Authority, an Indian Tribal Government, or any Alaska Native Corporation.
- Direct pay election is made on a facility-by-facility basis and generally must be made in the year the facility is placed in service and applies for the entire credit period relating to the facility.
- Ability to elect direct pay for certain credits is tied to achievement of the domestic content requirements.
- Beginning in fiscal year 2023 and each fiscal year thereafter, the portion of any payment made to a taxpayer pursuant to an election under direct pay shall be increased by 6.0445 percent.

Source: American Clean Power, Summary of the Inflation Reduction Act


APEX
CLEAN ENERGY

Attachment I

ECONOMY

Shared solar is coming to Virginia. Just not all of Virginia.

Here's why some parts of the state are being left out of a new program to enable residents to take advantage of less expensive energy – and what the General Assembly might do about it.

by **Megan Schnabel**
November 9, 2022

A Dominion Energy solar farm in Powhatan County. Courtesy of Dominion Energy.

Residents of Community Housing Partners' 3,300-plus apartments and townhouses that are served by Dominion Energy soon will get the opportunity to buy their electricity from a solar developer.

Residents of the nonprofit's nearly 1,200 units in Appalachian Power Co.'s service area will not.

Households that switch to solar could see an annual savings of $150 to $200, said Michael Sutphin, spokesman for the Christiansburg-based housing nonprofit.

"That's especially important for low-income residents like the ones that are living at CHP properties," he said. "Any amount can help."

Legislation passed in 2020 by the General Assembly required the creation of a so-called shared solar program in Virginia – but only for Dominion customers.

(Disclosure: Dominion is one of our donors but donors have no say in news decisions; see our policy.)

Calling it a matter of equity, and citing the state's broader move toward carbon-neutral energy, solar developers and consumer advocates are pushing to get that changed, perhaps as soon as the upcoming legislative session. At the direction of the General Assembly, the State Corporation Commission this fall convened a work group to study what an expansion of shared solar into Southwest Virginia might look like; a report is due to the legislature by the end of the month.

"We should have something available for everybody," said Carmen Bingham of the Virginia Poverty Law Center, who is part of the work group. "Wherever they are in the commonwealth, people should be able to access some way to mitigate their utility bills, in a way that other people have. And if that means a shared solar subscription, then they should have access to a shared solar subscription. We should make sure that there are no barriers for them to be able to do that."

The new partnership between Community Housing Partners and Dimension Renewable Energy, which plans to build and operate eight

Community solar sign-ups

Community Housing Partners and Dimension Renewable Energy will hold a kickoff event for their shared solar project Wednesday afternoon in Dumfries, in Prince William County.

Residents of Community Housing Partners properties that are served by Dominion Energy can begin to sign up now, although the solar projects won't go online until sometime next year.

solar arrays, is focused on low-income Virginians. But shared solar – a small but growing component of the nation's renewables arsenal that in many other states is called community solar – is touted as a way to expand access to solar energy to anyone who can't put panels on their own roof, whether it's because they rent an apartment or their house is surrounded by shade trees or they can't afford a $20,000 solar installation.

Community Housing Partners has put together a fact sheet for residents who want to know more about the shared solar option. The site also includes a link to sign up.

Under the shared solar model, customers pay to subscribe to an off-site solar array, which feeds power into the electric grid. Each subscriber gets a monthly credit on their utility bill for their share of that power.

Electric utilities have largely resisted the expansion of shared solar. They, too, say it's a matter of equity, arguing that customers who don't want to be part of a solar project shouldn't be forced to subsidize those who do.

As more customers turn to solar, they say, the cost to maintain the electric grid will shift unfairly to the remaining ratepayers. Solar subscribers still rely on the grid to deliver their electricity, the utilities say, so they should continue to pay for it.

"One of the things that we hold as a primary tenet … is that customers who benefit from a program should pay for a program," said Larry Jackson, Appalachian's director of government affairs for Virginia and Tennessee.

Virginia's 2020 legislation required the SCC to establish a minimum bill to ensure that shared solar subscribers cover their "fair share" of the costs of Dominion's infrastructure and administrative costs. But what has been less clear to stakeholders is just how to define that "fair share."

Low- and moderate-income residents are exempt from the minimum bill. But the rate set this summer by the SCC for all other Dominion customers drew pushback from consumer advocates and solar developers, who said it's so high that it negates any cost savings and will discourage solar developers from launching shared solar projects for anyone other than low-income customers.

As part of their push to expand shared solar to Southwest Virginia, advocates are again focusing on the minimum bill question. They've suggested commissioning a study to quantify the actual costs and

benefits of shared solar to determine the extent of any cost-shifting; such an analysis wasn't done before the Dominion rate was set.

They point to Gov. Glenn Youngkin's recently released **energy plan**, which says the state should make it easier for consumers to benefit from alternative sources of electricity, such as shared solar.

"What I'm getting from this SCC group is a signal from the General Assembly that your time is up," said Robert Kell of Appalachian Voices, a nonprofit that participated in the work group and has supported other efforts to expand solar energy into Virginia's coalfields. "This program is about equity. It should be available to all Virginia customers, not just a few.

"We're at a moment where we don't want state policy, we don't want effective utility lobbying, to hold back our ability to drive the clean industry economy and hold back our region's ability to tap into the jobs and economic benefits that shared solar would provide for our neck of the woods."

* * *

Areas in white are served by electric cooperatives and municipal providers. Source: Virginia State Corporation Commission.

Why the legislation doesn't cover the whole state

Shared solar proponents said they were caught by surprise when the 2020 legislation left out both Appalachian Power and Old Dominion Power, a unit of Kentucky Utilities that serves a small piece of far Southwest Virginia.

All three of the state's investor-owned utilities had been part of the original bill to create shared solar programs in Virginia. But by the time the legislation made it through committees and came to a vote, it had been pared back to Dominion only.

"We're all still kind of scratching our heads about what happened," said Mark Moormans, director of affordable housing management at People Inc., an Abingdon-based nonprofit. "We've been pursuing that as a working group ever since, to kind of even the playing field and make it a fair landscape across the commonwealth."

Kell, who said he believes that Appalachian and Old Dominion had effective lobbyists working for them in Richmond, said some legislators have told him that they didn't understand that the program they were voting on wasn't universal.

State Sen. Scott Surovell, D-Fairfax County, who sponsored the legislation, said Appalachian Power made the case that its customer base is sufficiently different from Dominion's that a shared solar program would need to be structured differently for its territory. The issue was complex enough to warrant taking more time, he said; with legislators facing a short session and already dealing with the pandemic and the much larger Virginia Clean Economy Act, they decided to focus on Dominion.

"I think there was just a concern whether we had time to really fine-tune it all for both territories, given the time pressures we were under during

Electric cooperatives also studying shared solar

Nonprofit co-ops account for about 16% of Virginia's electric customers

A separate work group is evaluating shared solar programs for the regions served by Virginia's member-owned electric cooperatives.

Co-ops account for about 16% of the state's electric customers, according to the Virginia State Corporation Commission. They're nonprofits that are owned by ratepayers and run by local boards, although they're also regulated by the SCC.

Virginia's 13 co-ops range in size from the 7,000-member Craig-Botetourt Electric Cooperative to co-ops on the outskirts of Washington that are more than 25 times that large, said Andrew Vehorn, vice president of member and public affairs for the Virginia, Maryland and Delaware Association of Electric Cooperatives.

session," said Surovell, who had been trying for years to win passage of a shared solar bill.

Dominion is by far the largest producer of electricity in the state and accounts for almost 70% of Virginia's electric customers, according to the SCC. Appalachian and Old Dominion together represent about 15% of the state's electric market, including most of Southwest Virginia. The remainder of the state is served by member-owned electric cooperatives or municipal systems.

According to the work group's draft report, which was circulated to members last week, both Appalachian and Old Dominion emphasized the differences between their service territories and Dominion's, particularly their smaller size and lower-income customer base.

Appalachian is dealing with a population that continues to decline, Jackson said in an interview, and can't afford to lose customers.

"Here in Southwest Virginia, where we have low to no load growth, every customer is valuable to us," he said. "And we need every customer to help us keep the system reliable. If we lost 1% of our customers, that just spreads that 1% of the grid maintenance cost to the other customers. So we cherish every customer and want to keep every customer."

The Dominion program both waives the minimum bill for low-income customers and mandates that 30% of capacity be set aside for those residents.

Those disparities in size and demographics make mandates complicated, he said.

"How programs look to a 7,000-customer utility vs. a 200,000-customer utility is very different," he said. "So we always try to preserve that flexibility to let the local boards design the programs that work best for them."

Vehorn's association partnered with the Coalition for Community Solar Access to convene the work group, whose report is due to the General Assembly by the end of the month.

This is new territory for the CCSA, which typically has focused on investor-owned utility markets, said Charlie Coggeshall, its director of policy and regulatory affairs.

With co-ops, it's important to not undermine the autonomy of local boards, he said. The work group should enable opportunities, not force them; he said the result of the meetings could be a consensus to ensure that there are no legal barriers for co-ops that want to develop shared solar, rather than a set of hard-and-fast mandates.

Pricing also is a "balancing act," Vehorn said. "Co-ops are very sensitive to any type of subsidy or transfer of cost amongst folks," he said. "We don't have shareholders, we only have ratepayers.

Old Dominion spokesman Daniel Lowry said there would be no need for such a carve-out in his utility's territory, as most residents would already qualify.

"The economic challenges within this area of Virginia are important to consider," he wrote in an email. "To be workable, any program should strongly consider the economics to ensure there is no cost shifting."

Appalachian made a similar argument: "APCo argued that given its low-income demographics, a shared solar program should avoid a low/moderate income component," the report summarized.

There are "already literally dozens" of programs that help these customers, Jackson said. As an example, he cited the Percentage of Income Payment Program, a part of the Clean Economy Act that caps utility bills for low-income customers and is funded through a universal service fee assessed to Dominion and Appalachian Power customers.

If low-income customers were to be exempt from minimum shared solar bills in Appalachian territory, those subsidies should be borne by other participants in the shared solar program, Jackson said.

"I know that would not be a particularly popular premise, but it is what we believe it should be," he said.

In effect, this approach would turn green energy into a "premium product," said Carrie Hearne,

So if there's a cost to be shifted, there's nowhere else for it to go. … We want to make the service available to all of the members that want it without creating a subsidy for the other members that don't want to participate in the program."

State legislation in recent years has given local co-op boards the ability to raise net metering caps, allow third-party power purchase agreements and eliminate standby charges – a whole host of solar-related reforms that the association had been working on with the renewables community, Vehorn said.

Some of the association's Virginia co-ops already allow members to subscribe to community solar programs. Most start out offering those subscriptions at a premium, but subscribers are likely seeing savings now that energy prices have increased, Vehorn said.

For instance, members of BARC Electric Cooperative, which serves customers in Bath, Alleghany, Augusta, Highland and Rockbridge counties, can buy blocks of solar energy for up to 25% of their average monthly usage, said Chris Botulinski, the co-op's chief operations officer.

When they subscribe, they're locked into their rate for 20 years and don't have to pay either the electricity supply services charge or any fuel factor adjustments, he said. Under current market conditions, he said, participants

associate director of renewable energy and energy efficiency for the Virginia Department of Energy, also known as Virginia Energy.

"The question for me comes down to, should we be paying a premium cost – should I be paying extra dollars – to get access to this program?" said Hearne, who has been part of the SCC work group. "Or should everybody benefit and have some type of cost savings that makes it so that more customers want to subscribe and we're able to fund more shared solar systems, and have the grid benefit from distributed energy that's placed across the commonwealth?"

She believes that a shared solar program would be most successful if everyone saw some savings – maybe a little more for low-income customers, maybe a little less for market-rate customers, but perhaps a reduction of 10% overall.

are seeing a savings from the blocks of energy purchased from the project.

Brandon Smithwood, senior director of policy at Dimension Renewable Energy, a solar developer that's working on several projects in Virginia, said co-ops have been "very progressive" on net metering and other issues surrounding solar energy – more so than most investor-owned utilities, or IOUs.

"The co-ops have had that record of getting ahead of things and saying, We're going to commit to doing something above and beyond what that IOUs need to do," he said.

– *Megan Schnabel*

Research by the National Renewable Energy Laboratory research has shown that only 2% of customers would pay more for a premium product, she said.

As much as people might talk about wanting to support green energy, the choice of whether to shift to a renewable energy source often comes down to money, Surovell said. "Most consumers aren't willing to pay more for electricity just for bragging rights that they've got a shared solar house," he said.

He's been a vocal critic of the Dominion minimum bill, which will run to about $55 a month for an average residential customer, in addition to a monthly administrative fee. Those charges would stack on top of whatever the customer pays for solar-generated electricity.

Recommendations for the minimum monthly bill had ranged from less than $8 – suggested by the Coalition for Community Solar Access – to the roughly $75 requested by Dominion, which said it was necessary to avoid shifting costs to customers who didn't want to participate. The SCC staff itself offered two very different recommendations, based on different methodologies: $10.95 or $55.10. The hearing

examiner opted for the latter and the commission agreed; advocates of shared solar appealed but were unsuccessful.

Charlie Coggeshall, who represents the Coalition for Community Solar Access on the SCC work group, said the $55 minimum bill likely rules out projects that would focus on anything other than low- to moderate-income, or LMI, customers. Two solar developers that are active in Virginia – Atlanta-based Dimension and Apex Clean Energy of Charlottesville, which wants to build a shared-solar facility in the town of Halifax – both intend to focus solely on that segment, their representatives said.

"It's not necessarily a bad outcome to have a project be 100% focused on LMI participation," Coggeshall said. "But the legislative intent … was to enable broad access. We are definitely interested in correcting that issue."

Bingham isn't sure that low-income-only programs are sustainable without grants or other investment.

"If you want to do just a strict low-income program, great. Have the state invest some money, get some grant programs," she said. "But it's just like affordable housing. If you really want to make affordable housing affordable, you've got to have mixed communities. It's the only way to really make these things survive, unless it's a not-for-profit."

Other members of the work group do appreciate the utilities' concerns about the financial impact of shared solar, said Josephus Allmond, an attorney with the Southern Environmental Law Center. But they need data to understand the true extent of it, he said.

"We really would like to have good estimates of what that cost shift might be, if any," he said. "I think a good estimate there will help us come up with what's reasonable in terms of a minimum bill and figuring out that utility compensation."

Hearne said she'd like to see the group's report lead to just that kind of analysis. Virginia Energy could lead a study that could get to the root of the cost-shifting question, she said, and analyze the true value – both the costs and the benefits – of distributed energy resources like shared solar.

Perhaps shared solar could be opened up in Appalachian and Old Dominion territories at a small scale, and those projects could be studied, she said.

According to the work group's draft report, most of the nearly three dozen participants supported commissioning such a study.

The report said that neither of the utilities was in that category. But Lowry said Tuesday that Old Dominion supports the concept of a study "as long as any group of customers who choose to participate within such a program be responsible for all costs of the program."

Appalachian Power believes that the SCC should determine the rate impacts that shared solar projects have, just as it did with Dominion, spokeswoman Teresa Hamilton Hall said Tuesday.

"Appalachian Power views the shared solar issue as an energy-for-energy transaction; therefore, the value of shared solar should be based on the value of energy," she wrote in an email.

"Under these circumstances, we believe that having other studies ongoing is not beneficial or productive," she said.

* * *

Gov. Glenn Youngkin speaks at the rollout of his energy plan in Lynchburg in October. Photo by Dwayne Yancey.

Youngkin's energy plan pushes shared solar

On page 24 of Youngkin's energy plan, in a list of recommendations about how to give customers more choice in where they buy their electricity, is a line that has encouraged proponents of shared solar:

"Remove barriers to distributed generation, including shared solar, and increase the ability of Virginians to install power resources on their property."

It's tucked into a section labeled "competition," which discusses Virginia's regulated monopoly model – and makes the case that current policy "unnecessarily restricts" some kinds of projects from the energy marketplace.

"Both businesses and residential customers enthusiastic about installing their own solar and wind generation units and purchasing electricity from competitive service providers are overly burdened by regulations that prevent them from exercising energy choice," the plan says.

The plan, which was released last month, has drawn negative reviews from many in the environmental arena for its push to revise some aspects of the Virginia Clean Economy Act, which was driven by a Democratic majority in the General Assembly and requires the state to move away from fossil fuels.

But some see a reason for optimism in this signal of support for shared solar by the Republican administration.

"I wouldn't say that the renewable energy industry is applauding the Virginia energy plan, but there is at least an acknowledgement in that plan for shared solar," Coggeshall said.

"We're not endorsing or celebrating the entire plan, but we definitely appreciated that recognition from the administration," he said. "My sense is that this administration values competition, jobs, customer options, consumer options. And I think because of that, it's also ruffled feathers with the utilities."

Indeed, Appalachian Power's Jackson was dismissive when asked about the significance of shared solar's mention in the governor's plan.

The section on competition reads like "soundbites," he said. "So somebody asked him [Youngkin] to put it in, right?" he said. "Of course, I don't really know. But for us, the barrier to shared solar has always

been the cost shifting. If there is a minimum bill, and if all the administrative costs are included, then we would not object."

His colleague Jon Amores, the utility's state government affairs manager, acknowledged that customers might be interested in alternative forms of energy if they could save money. But he discounted the idea that choice in and of itself automatically results in lower costs.

"We agree with the governor, and we understand that people want to shop," he said. "But I presume the governor's saying, just as we are, shared solar has a place, but not at all costs, and not to the detriment of the customer."

Hearne cautioned against downplaying the inclusion of shared solar in the energy plan. The administration sees it as part of what the governor has called an "all-of-the-above" approach to energy, she said, and its mention should be taken "very seriously."

"I think that is a really big signal," she said. "There's a lot of things that people may not necessarily see in the energy plan. When there's mention of shared solar in the energy plan, it's very intentional."

Abigail Thompson, a government affairs specialist at Gentry Locke Consulting who works with Dimension, agreed.

"We're really encouraged that he's come out in favor of this, and with that kind of directive we hope this will really become a truly bipartisan issue," she said.

⋆ ⋆ ⋆

The Appalachian Power Co. building in downtown Roanoke. Photo by Megan Schnabel.

Advocates see shared solar as a way to capture renewables

Beyond the potential cost savings and the environmental benefits, advocates of expanding shared solar into Southwest Virginia see it as an opportunity to capture part of the renewable energy industry for the state's coalfield counties, a yearslong effort that could be helped by newly available federal programs.

Through a series of tax incentives, this year's Inflation Reduction Act is expected to give a significant boost to clean energy projects; the Solar Energy Industries Association predicts that over the next decade, the act will lead to 69% more solar deployment than would otherwise have been expected.

Key to Southwest Virginia could be a $4 billion set-aside for clean energy projects in so-called "energy communities," places that have long relied on coal mining, oil and gas drilling or fossil fuel-driven power plants.

Such projects would build on existing work in the southwest corner of the state. A project kicked off this year to **put solar panels on a dozen schools** in Wise and Lee counties and create a pipeline to train installers and technicians. Efforts to determine whether the region's coal-focused manufacturers could pivot to supplying the **energy storage** and **offshore wind** sectors are underway.

Last year, Dominion and The Nature Conservancy announced plans to develop a utility-scale solar project on 1,200 acres of former surface mines in Wise and Dickenson counties. That project is still in the early development phase, with construction expected to start in 2024 or 2025 at the earliest, Dominion spokesman Aaron Ruby said.

Southwest Virginia doesn't have a lot of sites that could host a project of that size, Kell said. But he counted 252 abandoned coal mines, 12 landfills and 11 other polluted lands from Lee County to Roanoke that could have potential as shared solar sites.

"Shared solar isn't simply about the customers," Kell said. "It's also about the opportunity to develop brownfield sites. Those sites are often too small for utility-scale solar but are better suited for shared solar programs. Especially in Southwest Virginia, where we have a lot of abandoned mineland, we could put that mineland into productive use with shared solar."

Siting solar projects on brownfields can be more expensive, and thus less attractive to developers, Coggeshall cautioned. But that doesn't mean they can't work, especially with state and federal incentives.

"If you enable incentives – sometimes it's dollar incentives, sometimes it's maybe more expedient development or processing timelines or whatever – that works," he said. He pointed to Maryland's community solar program, which includes tax and other incentives for brownfields projects.

Surovell believes that the current **backlash** in some parts of Virginia against thousand-acre utility-scale solar farms could drive support for shared solar projects, which tend to take 20 to 30 acres.

"I see shared solar as a possible solution that might be more palatable to people that are worried about the visual footprint of utility-scale solar," he said.

But Appalachian has maintained that the utility-scale solar it has been developing is far more efficient than shared solar, and that despite the recent pushback, large-scale solar developments aren't dead – they just might need adjustments.

“If we’re focused on the cheapest way to provide renewables, and to make sure the folks that don’t want to engage in that directly don’t want to pay for it, we’re almost driven to the positions we’re taking,” Amores said.

Hearne noted that shared solar should be seen as just one tool in the state’s push toward clean energy, referring again to Youngkin’s “all-of-the-above” approach, which includes utility-scale solar, offshore wind, hydrogen technologies and small nuclear reactors. The Virginia Clean Economy Act mandates that Dominion and Appalachian generate 100% carbon-free electricity by 2045 and 2050, respectively, and it set a target of 16,100 megawatts of solar and onshore wind power for the state.

“I don’t think we’re going to meet our clean energy goals in the timeframe that we need to and at the cost to keep things affordable if we only look at rooftop solar or shared community solar projects,” Hearne said. “I don’t think that shared solar alone, even within the solar sphere, is the catchall.”

People Inc. has already been exploring the use of solar on its multifamily projects, including a 12-unit apartment building in Dante, a community that straddles the Russell-Dickenson county line. Each unit has its own panels, which provide 40% to 60% of their electricity. The rest comes from Appalachian Power.

“They have realized significant savings, enough that they notice,” Moormans said of the building’s tenants. “It makes it a desirable place for people to live.”

It also illustrates the need for a more robust solar industry in the region, he said: If the array goes down, it takes hours for a technician to drive in from somewhere else.

“There’s a huge opportunity for people to start local businesses providing that service,” Moormans said.

Not far away, in Old Dominion Power territory, owners of multifamily buildings can install solar arrays and create shared solar programs that tenants can subscribe to, rather than having to designate individual solar panels for each unit. A 2020 law that passed alongside the broader shared solar legislation created this option for Old Dominion and Dominion Energy customers, but not for those in Appalachian Power’s service area.

So far, Lowry said, Old Dominion has had one inquiry about the multifamily program.

* * *

The State Capitol. Photo by Markus Schmidt.

Next up: the General Assembly

The SCC work group, which was created by legislation sponsored by state Sens. Emmett Hanger, R-Augusta County, and John Edwards, D-Roanoke, will send its report to the General Assembly by the end of the month.

It doesn't reach any conclusions, nor was it designed to. The report was intended to capture participants' opinions and will leave it up to legislators to decide whether, and how, to expand shared solar into Southwest Virginia.

"What I'd like to see is basically a decision that's grounded in economic reality," Appalachian's Amores said. "There are a lot – on both sides – a lot of laudable things that utility-scale solar provides, that shared solar provides. But for the limited purpose of creating public policy and ultimately paying for that public

policy, if you're not focused on what the ratepayer has to pay, the further you get away from that, the more you open yourself I think to legitimate debate, legitimate disagreement, and imposing your worldview on other people.

"Sometimes that happens. That's a policy debate. But for our purposes, we'd like to keep our policy … focused on economic reality."

Brandon Smithwood, senior director of policy at Dimension, believes the political timing is right for expansion.

"We'll test the overall interest, but in the meetings I've had I think there's genuine bipartisan interest within the General Assembly," he said.

"I think the fact that there's basically all parties except the utilities saying we should expand this, and you have the administration – hopefully the utilities come to the table and say, let's work something out and have a bill we can all feel good about."

Attachment J

Full List of Attendees at November 9, 2022 Stakeholder Meeting

Charlie Coggeshall	CCSA
Patrick Cushing	CCSA
Jake Springer	NEXAMP
Laura Merten	Apex Clean Energy
Sam Brumberg	VMDAEC
Andrew Vehorn	VMDAEC
Sadie Gary	VMDAEC
Jacob Newton	VMDAEC
Leo Radkowski	ANEC
Lindsey Watson	REC
Kevin Yingling	DEC
Kyle Allwine	NNEC
Lee Brock	REC
Jennifer Sebastian	REC
Jason Carter	SVEC
Cassandra Frysinger	SVEC
Stephanie Kane	ODEC
Howard Spinner	NOVEC
Chris Botulinski	BARC
Andrew Cotter	CVEC
Jim Guy	MEC
Pete Gallini	ODEC
Kirk Johnson	ODEC
Jeff Ahearn	CBEC
Richard Michaux	SCC
Justin Blitz	CCR
Kelli Gravely	SCC
Sarah Hollberg	Alliance for the Shenandoah Valley
Tyler Jones	Pivot Energy
Eva Raczkowski	Cypress Creek Renewables
Carmen Bingham	VPLC
David Essah	SCC
Arlen Bolstad	SCC
Shepelle Watkins	SCC
Fred Ochsenhirt	SCC

Virginia, Maryland & Delaware
Association of Electric Cooperatives

COALITION FOR COMMUNITY SOLAR ACCESS

Public Input Listening Session | November 18, 2022

1:00 PM – 3:00 PM

The public input listening session was convened by Sam Brumberg of the VMDAEC and Charlie Coggeshall of the CCSA at approximately 1:00 PM on November 18, 2022. A working draft of the SB660 legislative report was circulated to external stakeholders on November 17, 2022, to review before the public input listening session. The public input listening session was hosted on the Zoom platform.

CCSA Representatives Present:	Charlie Coggeshall	CCSA
VMDAEC Staff Present:	Sam Brumberg	VMDAEC
Other Representatives Present:	Austin Counts	VA Energy
	Richard Michaux	SCC
	Carmen Bingham	VPLC
	Carrie Hearne	VA Energy

Mr. Brumberg and Mr. Coggeshall introduced the purpose of the public input listening session, then opened the floor for comments. The floor remained live and open for the duration of the scheduled time slot. Ms. Bingham put forth two clerical corrections. No substantive public input was received.

The session was adjourned at 3:00 PM.

Public Input Listening Session | November 21, 2022

8:00 AM – 10:00 PM

The public input listening session was convened by Sam Brumberg of the VMDAEC and Charlie Coggeshall of the CCSA at approximately 8:00 AM on November 21, 2022. A working draft of the SB660 legislative report was circulated to external stakeholders on November 17, 2022, to review before the public input listening session. The public input listening session was hosted on the Zoom platform.

CCSA Representatives Present:	Charlie Coggeshall	CCSA
	Jake Springer	NEXAMP
	Laura Merten	
VMDAEC Staff Present:	Sam Brumberg	VMDAEC
	Jacob Newton	VMDAEC
	Sadie Gary	VMDAEC
Other Representatives Present:	Austin Counts	VA Energy
	Richard Michaux	SCC
	Carmen Bingham	VPLC
	Zach Jacobs	Farm Bureau
	Sarah Hollberg	Alliance for the Shenandoah Valley

Mr. Brumberg and Mr. Coggeshall introduced the purpose of the public input listening session, then opened the floor for comments. The floor remained live and open for the duration of the scheduled time slot. No public input was received.

The session was adjourned at 10:00 AM.