Virginia Solar Energy Development and Energy Storage Authority

2021 Annual Report

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2021 Annual Report of the Solar Energy Development and Energy Storage Authority

A. OVERVIEW OF THE AUTHORITY

1. HISTORY OF THE AUTHORITY

In 2015, the Virginia General Assembly created the Virginia Solar Energy Development Authority (the Authority) for the purposes of facilitating, coordinating, and supporting the development, either by the Authority or by other qualified entities, of the solar energy industry and solar energy projects. The Authority seeks to accomplish this by developing programs that increase the availability of financing for solar energy projects; facilitating the increase of solar energy generation systems on public and private sector facilities in the Commonwealth; promoting the growth of the Virginia solar industry; and providing a hub for collaboration between entities, both public and private, to partner on solar energy projects. The enabling legislation for the Authority is included in **Appendix G**.

The Authority, as originally created, was composed of 11 non-legislative citizen members: six members appointed by the Governor, three members by the Speaker of the House of Delegates, and two members by the Senate Committee on Rules.

In the 2017 legislative session, Code § 45.2-1901 was amended to include energy storage as a key activity for the Authority to study, and the Authority was renamed the Virginia *Solar Energy Development and Energy Storage Authority*. The legislation expanded the purposes of the authority to include positioning the Commonwealth as a leader in research, development, commercialization, manufacturing, and deployment of energy storage technology. The powers of the Authority were expanded to include (i) promoting collaborative efforts among Virginia's public and private institutions of higher education in research, development, and commercialization efforts related to energy storage; (ii) monitoring relevant developments nationally and globally; and (iii) identifying and working with the Commonwealth's industries and nonprofit partners. Four additional members were added: 2 appointed by the Governor and 1 each from the House and Senate. A listing of the appointed Authority members is included in **Appendix H.**

The Authority is scheduled to expire on July 1, 2025.

2. UPDATE ON AUTHORITY ACTIVITIES

The Authority held three meetings since the 2020 Annual Report, continuing to explore actual and perceived barriers to increased solar energy deployment and energy storage in Virginia. These meetings took place on October 29, 2020, June 2, 2021 and October 29, 2021.

The October 29, 2020 and June 2, 2021 were held virtually via Webex while Governor Northam's declaration of a State of Emergency due to the COVID-19 pandemic and restrictions on public gatherings were in place.

On July 1, 2021, the State of Emergency was allowed to expire and all Executive Orders imposing COVID-19 restrictions also either expired or were terminated. As such, Authority meetings after July 1, 2021 needed to again be held in-person to comply with Virginia's Freedom of Information Act provisions. This was the case for the October 29, 2021 meeting.

The approved Minutes from the October 29, 2001 and June 2, 2021, and the draft Minutes from the October 29, 2001 meetings are available at on the Virginia Energy website at https://energy.virginia.gov/public/publicmeetings.shtml

Synopsis of Authority Meetings for this Report Period

The October 29, 2020 meeting included a brief update on the DEQ's Permit by Rule process (PBR) from Mary Beth Major, PBR Program Manager at the Department of Environmental Quality. Ms. Major provided an overview and status update of the solar and one wind power permits approved, under review, or having submitted Notices of Intent to apply for a permit.

She indicated that the proposed regulatory changes to the program requirements were undergoing executive review, and that when this review was complete the rules would be released for a mandatory 60-day public comment period before becoming official.

Authority staff provided an update on several SCC Dockets, including

- Renewable Portfolio Standard – PUR-2020-00134 (Dominion) and PUR-2020-00135 (APCo)
- Energy Storage Rules - PUR-2020-00120
- Shared Solar - PUR-2020-00125 and Multifamily Shared Solar - PUR-2020-00124

Staff then presented the Authority's new website that was, and is still, in development but complete enough to get feedback on from members as to the types of information the site should contain. At a minimum the site will include details on past and future meetings and associates minutes and meeting presentations, as well as Virginia solar and storage news, and legislative information. The website is available at https://www.vasolarandstorage.org.

The June 2, 2021 meeting included a presentation by Daniel Zambory with Appalachian Power on Increased Transparency in Locating Interconnection Points on the Transmission System. His presentation included a discussion on:

- What distribution hosting capacity is and why it is of value to utility customers

- How integrated utilities worked in the past locating generation assets and related transmission
- What has changed in recent years to impact how generation and transmission may work together, and
- What mechanisms are available or being developed to share some limited transmission information and insights with generation resources (such as solar facility developers), pointing out that utilities need to be careful what and how much information they make public for grid security concerns (keeping detailed information out of the hands of those who might use it for ill intent).

Mr. Zambory and Authority member Paul Duncan with MPR Associates then presented both the utility and energy storage industry perspectives on metering of energy storage systems.

Mr. Duncan began by addressing the issue accuracy of external metering a for revenue purposes and the need for, but increased costs and infrastructure related to multiple meter configurations versus single meters, and the long term implications on storage project profitability. He also offered possible solutions and recommendations going forward such as developing accuracy requirements for self-contained inverter metering, standardizing metering configurations for storage and configurations, and others.

Mr. Zambory then gave a high-level utility overview on why metering is vital for utility planning, and the challenges utilities face with the rapid growth in distributed generation (DG) resources like rooftop solar and energy storage resources.

He pointed out the importance of strategically deploying meters that can give them the information they need to plan for worst case scenarios in distribution planning by knowing how much and when DG and energy storage resources are on their system at a given time.

Finally, Ms. Robb then opened a discussion on what the Authority's role could or should be in the current environment.

Ms. Robb provided the following possible roles for consideration:

- The Authority can serve as an authoritative clearing house for information on solar energy development and energy storage in Virginia via its website and annual report, such as;
    - SCC dockets
    - Utility RPS compliance
    - VCEA implementation
    - Virginia solar and storage studies
    - Generally serve as a curator of Virginia solar and energy storage information

- Serve as a forum to encourage various stakeholders to express their varied perspectives on solar and energy storage development in Virginia, e.g. a utility's perspective may differ from the DG and storage industry perspective, in turn may vary from that of land use planners.

While there was much discussion, no decisions were made and the subject would be continued at future meetings.

During the October 29, 2021 meeting of the Authority Will Gathright, Vice Chair, presented on a concept involving working with Bitcoin "mining" operations as a way to advance solar energy.

Mr. Gathright explained how large server farms "mining" for bitcoins is an energy intensive process, however, while energy intensive, the electrical load of Bitcoin mining facilities is steady, predictable, price sensitive, easy to site, and easy to curtail. These features makes it a prime industry to pair with co-located solar and energy storage development to serve an offtaker for the solar power. His presentation concluded by proposing that the Authority could help to educate stakeholders on this industry and collaborate on a future regulatory framework as the industry grows.

After some discussion on the topic, the Authority concluded the following:

- The Authority should be cautious of advocating for or against specific industries outside of solar and energy storage directly.
- That there are potentially many new emerging technologies and social trends that represent large shifts in the way that electricity is consumed (e.g. electric vehicles, indoor cultivation of cannabis, etc.).
- The Authority should investigate this larger question of how large electric loads can be better integrated into a comprehensive solar and renewable energy policy for the state.

During discussion on the topic, the point was made that many emerging technologies and social trends will have a large impact on electric loads in the state. The Authority will look into how these developments can help advance solar in the state, consistent with the group's mission.

During the October 29, 2021 meeting, there was also discussion of the draft 2021 Annual Report of the Authority and preparation for the 2022 Annual Report of the Authority. In order to assist with getting timely input for the 2022 Report, various members of the Authority were assigned certain sections for the 2022 Report and asked to provide an update on such sections in the June 2022 meeting of the Authority. In addition, the Authority will endeavor to provide an Executive Summary for the 2022 Annual Report including, if appropriate, recommendations of the Authority based on issues identified by the Authority.

The remainder of this Update on Activities of the Authority provides a summary of the material Mr. Gathright presented on his assessment of how Bitcoin mining can advance solar in Virginia.

Summary: How Bitcoin Mining Can Advance Solar in Virginia

Keeping accurate records is essential to commerce. Today, records about financial transactions are kept in trusted databases. For example, your bank maintains a database that shows what you have purchased, from whom, when, and how much money you have remaining. It would be entirely possible for someone at the bank to change these records, or to falsify them completely. Despite this, most people trust the bank to keep accurate records. They are a trusted third party. There are many social safeguards in place that keep banks from becoming bad actors: threat of lawsuit, poor reputation in the marketplace that would lead to a decline in business and legal action from government regulators.

Blockchain technology is an alternate way to keep records. Blockchain is often referred to as a digital ledger. Instead of relying on a trusted third party and social safeguards, a digital ledger takes advantage of the underlying mathematics and engineering to produce a system that is guaranteed to be

- Complete. All the information ever recorded onto the blockchain is guaranteed to be present.
- Accurate. All the information is guaranteed to be the same as when it was recorded.
- Tamperproof. It is not possible for a bad actor to tamper with or otherwise falsify records on the blockchain.

This is a powerful set of guarantees. One way that a blockchain achieves this is by allowing anyone in the world with an internet connection to participate in running the blockchain by operating a "node". A node is a combination of computer hardware and software that does the following:

- Keeps a copy of all the information on the entire blockchain
- Vote on whether the records that other nodes are adding to the blockchain are correct. This is called a "consensus mechanism."

Many consensus mechanisms have been designed. It is outside the scope of this summary to explain how they work, but Bitcoin's consensus mechanism will be important when discussing the energy usage of the Bitcoin network.

What is Bitcoin?

The Bitcoin network is one particular blockchain. If a blockchain was the idea of an engine, then the Bitcoin network would be one particular make and model of car. Just like when

designing a car, trade-offs must be made. If a designer makes a car larger, it might not be as fuel-efficient or it might be more expensive.

In the same way, when designing a blockchain there are certain trade-offs. One trade-off that Bitcoin made was to choose a consensus mechanism called "proof of work (PoW)." How PoW functions is also outside the scope of this document, but it is important to know that PoW requires a lot of computing power. Computing power, in turn, requires a lot of electrical power. Remember that anyone can run a node on the Bitcoin network. However, running a Bitcoin node is expensive. The computer hardware is expensive to purchase, and the electricity it takes to power the node is expensive. To pay for these expenses, people who operate Bitcoin nodes are paid by the people who wish to transact on the network. This is similar to how Visa is paid whenever someone wants to transact on the Visa network (i.e. by using his or her credit card)

Instead of being paid directly in dollars, node operators are compensated with the native currency of the Bitcoin network called bitcoins (lowercase). The process of operating a node on the Bitcoin network and being paid in bitcoins is called "mining" and the node operators are often called "miners". We will use "operating a Bitcoin node" and "mining bitcoin" synonymously here.

Because this currency is secured with cryptography, bitcoin is a type of cryptocurrency. There are many other cryptocurrencies, but Bitcoin is the largest. At time of writing, Bitcoin has a market capitalization of over $1 trillion dollars. If it were a stock, it would be the fifth largest stock in America (by market cap) and worth more than Facebook, Tesla, or Berkshire Hathaway.

Aside from the economic benefits, blockchain technologies are advancing a number of other social goods including: streamlining remittance payments to economically depressed countries, promoting art and artists, forging new participatory business models, and advancing democracy under totalitarian regimes to just name a few.

Bitcoin mining consumes large amounts of electrical energy. As such, the environmental impacts of running a Bitcoin node should not be ignored. That said, when viewed strictly as an electrical load, a Bitcoin node has several desirable properties.

- The load is steady. Mining bitcoin requires large but constant electrical power. This is easier to plan for than intermittent loads.
- The benefit from the load is also steady. Running a bitcoin node for a half an hour yields approximately 50% of the benefits of running it for a full hour. Contrast this to a batch manufacturing process in which the entire batch could be wasted.
- The economic benefit from the load is easily calculated. This makes it easy to decide whether to participate in curtailment programs such as demand response.

- The load is very price sensitive. Once the value of the electricity exceeds the value of the bitcoins earned, it is not profitable to operate the node.
- The load is easily curtailed. By turning off some or all of the nodes, the total electrical load of a mining operation can be controlled precisely and quickly.
- There is considerable flexibility when siting a node. Strictly speaking, all that is required is an internet connection. It is easier to transport data than electrical power.

Operating under the proper regulatory context, these properties could transform a bitcoin miner into an energy asset that unlocks solar or other potentially stranded renewable energy resources.

B. LOCAL REGULATION

1. U.S. DOE *SOLSMART* TECHNICAL ASSISTANCE PROGRAM

The U.S. DOE *SolSmart* technical assistance program provides no-cost technical guidance to communities to help them implement utility scale and distributed solar and reduces costs for solar.

Many local governments have been working to improve their local planning, policies and practices relating to the development of solar and storage. The SolSmart program recognizes these communities for the implementation of best practices. In 2020, Virginia Energy began working strategically with the SolSmart, alongside the UVA Virginia Solar Initiative to support the development of best practices in localities across the Commonwealth. Virginia Energy, UVA, and the National League of Cities, have together engaged in dozens of consultations, webinars and designation-oriented discussions with localities using the framework provided through the SolSmart program.

To date, 26 Virginia localities have achieved the SolSmart designation, including several which achieved the highest “Gold” level in 2021. The City of Richmond and Wise County were among these who recently achieved a Gold designation, which notably comes with a commitment of a 3-day turnaround for permitting of rooftop solar. SolSmart communities in Virginia include:

SolSmart Designated Communities in Virginia	
Albemarle County, VA, Bronze	New River Valley Regional Commission, VA, Bronze
Alexandria, VA, Gold	Newport News, VA, VA, Bronze
Altavista, VA, Bronze	Northern Virginia Regional Commission, VA, Gold
Arlington County, VA, Bronze	Norton, VA, Bronze
Blacksburg, VA, Silver	Pulaski County, VA, Gold, Special Recognition in Permitting and Inspection
Charlottesville, VA, Silver	Richmond, VA, Gold, Special Recognition in Permitting and Inspection
City of Fairfax, VA, Bronze	Roanoke, VA, Bronze
Dickenson County, VA, Bronze	Russell County, VA, Bronze
Fairfax County, VA, Gold	Scott County, VA, Bronze
Falls Church, VA, Silver	St. Paul, VA, Bronze
James City County, VA, Bronze	Tazewell County, VA, Bronze
Lee County, VA, Bronze	Williamsburg, VA, Silver
Loudoun County, VA, Silver	Wise County, VA, Gold

Through SolSmart, localities are eligible for no-cost technical assistance through SolSmart and local staff or elected officials within localities may request a consultation with the Virginia team at https://www.energy.virginia.gov/renewable-energy/SolSmart.shtml.

In addition to working on the SolSmart program, staff from Virginia Energy contributed to another guide, created in particular for communities and developers in Southwest Virginia. The resource, called "Large-Scale Solar Development: A Playbook for Southwest Virginia" was created through a partnership led by the Southwest Virginia Solar Workgroup, in partnership with SolSmart and The Solar Foundation. The playbook is directed to municipal and county governments that have an essential role to play in encouraging large-scale solar projects.

C. STATE REGULATION

Attached as **Appendix J** to this Report is a chart listing recent Virginia State Corporation Commission ("SCC") activity that address Renewable Energy, Energy Storage, Environmental issues, Retail Access proceedings, and Integrated Resource Plan proceedings. Some of this SCC activity is discussed in greater detail below in addition to relevant activity by the Virginia Department of Environmental Quality ("DEQ"). A comprehensive description of SCC activity in these areas can be found in the September 1, 2021 Virginia SCC's *Status Report on the Implementation of the Virginia Electric Utility Regulation Act pursuant to § 56-596 B of the Code of Virginia*, which was submitted to the Governor, the Chair of the Senate Committee on Commerce and Labor, the Chair of the House Committee on Labor and Commerce, and the Members of the Commission on Electric Utility Regulation.

1. Construction Authorization For Utility Scale Solar (PBR)

During 2020, activity concerning state regulation for utility scale solar has focused on developments regarding the DEQ's Permit by Rule and necessary updates to these rules.

In order to address the increased permitting workload for DEQ and other agencies, and to account for the larger footprint and the types of land being incorporated into such projects, it was determined that amendments to the regulations were required. DEQ's stated purpose of the regulatory action was to "clarify specific definitions, establish clear timeframes for data submittals and recordkeeping activities, provide clarity for natural and cultural resource studies, clarify the public participation procedures, and address the fee structure to adequately fund the program."

In May 2020, DEQ published a draft of the proposed regulations. These proposed regulations were reviewed by the Secretary of Natural Resources, and then published in the Virginia Register to undergo a 60-day public comment period before being reviewed and approved by the Governor's office on January 30, 2021.

In 2021, HB 2148 added battery storage to the eligible technologies for the DEQ's permit-by-rule, described as "an energy storage facility that uses electrochemical cells to convert chemical energy." The legislation requires DEQ to promulgate regulations to implement the addition of battery storage no later than January 1, 2022. It is up to DEQ's discretion whether to extend the regulations to energy storage projects that currently apply to solar projects, including minimal standards for projects of less than 5 MW size, or to create a new set of regulations.

Any project that is not eligible for permit-by-rule, either because it is too large or because it does not meet the technological definition in the legislation, will be required to apply for a permit with the SCC according to the requirements defined in the energy storage regulations adopted in December 2020.

DEQ released their Draft Small Energy Storage Facilities Permit by Rule on November 1, 2021 triggering the 30 day public comment period. After all comments have been considered, the DEQ will make the final decision.

2. SCC Energy Storage Rules and Task Force Report

SCC Final Energy Storage Rules

The SCC adopted its final rules for deployment of energy storage in Case No. PUR-2020-00120 , which became effective on January 1, 2021. They are summarized below:

Interim Targets for Energy Storage Deployment for Appalachian Power Company (APCo)

December 31, 2025: 25 MW

December 31, 2030: 150 MW

December 31, 2035: 400 MW

Interim Targets for Energy Storage Deployment for Dominion Energy Virginia (Dominion)

December 31, 2025: 250 MW

December 31, 2030: 1,200 MW

December 31, 2035: 2,700 MW

Key Points

- Broad, technology neutral definition of energy storage resources and no restrictions on what technologies will count towards the capacity goals.
- No specification of minimum or maximum duration of energy storage capacity
- Does not indicate maximum project size, therefore it would default to the legislative limit of 500 MW generally and 800 MW for Dominion
- Utilities must account for 35% non-utility procurement requirements with each interim energy storage deployment target
- No clarification of timeframe for installation of 10% behind-the-meter storage applications – must be completed by 2035 per VCEA requirements
- Utilities must issue at least one competitive solicitation for storage resources each calendar year
- SCC has agreed with staff suggestion that non-utility facilities with an energy storage power rating of one megawatt or greater must obtain a permit or a CPCN from the SCC
    - Projects should also be found to not adversely impact any goal established by the Virginia Environmental Justice Act (EJA)
    - Projects with less than one megawatt rating are required to submit a letter stating location, size, and technology of facility to the Commission.
- Licensing requirement for energy storage aggregators
    - Includes list of disclosure requirements for customer service contracts and prohibition against misleading material in advertisements, solicitations, marketing materials, or customer service contracts

Due to the short time frame the SCC had to adopt its energy storage regulations governing how Dominion and APCo will satisfy the VCEA's requirements for energy storage, the SCC left a number of questions to be posed to a bulk energy storage task force that was also contemplated by legislation passed at the same time the VCEA was passed.

To help the Virginia legislature guide the future of energy storage that will be driven by the VCEA's targets, the Virginia General Assembly instructed the Virginia State Commission Corporation (SCC) to create the Virginia Energy Storage Task Force through House Bill 1183. The Virginia Energy Storage Task Force was charged with assessing costs and benefits of energy storage installations; assessing energy storage deployments in the bulk market, utility system, and behind-the-meter; and investigating barriers, incentives, and targets. This charge demanded input from across public and private sectors, and throughout the interconnected organizations and infrastructure that comprise the grid. The Task Force's purpose was three-fold: 1) assess the potential costs and benefits of energy storage installations, 2) assess how different stakeholders deploy energy storage resources in the bulk market, the utility system, and behind-the-meter and 3) address many diverse topics around incentives and targets. Additionally, in HB 1183, the General Assembly directs the Task Force to:

"Evaluate and analyze regulatory, market, and local barriers to deployment of distribution and transmission connected bulk energy storage resources to help integrate renewable energy into the electrical grid, reduce costs for the electricity system, allow customer to deploy storage technologies to reduce their energy costs, and allow customer to participate in electricity markets for energy, capacity, and ancillary services."

The formation of the Task Force reflects Virginia's recognition of the important role energy storage will play in reaching the renewable portfolio standard targets set out in the Virginia Clean Economy Act (VCEA). The Task Force included a group of diverse stakeholders that met for thirteen separate meetings from February 2021 to September 2021 to discuss items specified by the General Assembly and the SCC. Throughout these meetings, recommendations related to energy storage and its deployment and operation in Virginia were encouraged and discussed, resulting in a final report provided to the General Assembly of the Commonwealth of Virginia on October 1, 2021 in the *Virginia Energy Storage Task Force Final Report* ("Task Force Report") that is published on both the General Assembly's report website, https://rga.lis.virginia.gov/Published/2021/HD13, and on the SCC's website, https://scc.virginia.gov/getattachment/7414bf55-7570-4b3a-bd55-cddc9812e976/Va-Energy-Storage-Task-Force-Rept.pdf.

The Task Force Report is a consensus document, meaning the SCC saw its role to be documenting the will of the group rather than weighing in on any particular outcome for issues on which there was not a full consensus.

The Task Force consisted of more than 100 members from many different organizations. These organizations include regulated electric service providers, competitive electric service providers, rural electric cooperatives, PJM (Virginia's regional transmission organization (RTO)), commercial and industrial customers and related associations, energy storage companies and their associations, the Virginia Solar Energy Development and Energy Storage Authority, the Virginia Department of Energy (formerly the Virginia Department of Mines, Minerals and Energy), and the Office of the Attorney General.

The Task Force discussed requested topics through thirteen facilitated meetings. Five Task Force meetings addressed wide-ranging, higher-level topics. The first meeting explored general benefits and concerns tied to energy storage installations and what ideal deployments would look like in Virginia. The next three meetings tackled each of the different market segments requested in the Task Force legislation (e.g., bulk market, utility system, behind-the-meter), focusing on the specific barriers, opportunities, and costs and benefits tied to these energy storage deployments. The last meeting afforded Task Force members an opportunity to provide additional feedback on the recommendations outlined in this report.

To encourage open and honest communications between participants, the source of comments was kept anonymous in notetaking and reporting of meeting results. As such, there is little attribution in this report given to the stakeholder groups who were supporters or detractors of any ideas. In addition to five large Task Force meetings, eight targeted discussion meetings addressed more specific topics. While all Task Force members were encouraged to join these meetings, the topics lent themselves to a more specific group of participants. These groups covered the following areas: technology, permitting and regulations, hosting capacity and integrated resource plans (IRPs), goals and metrics, customer engagement and equity, and markets. The technology subgroup met twice while all others had one session. All participants were given the chance to review and comment on the first draft of this Final Report and their comments were tracked and addressed where possible.

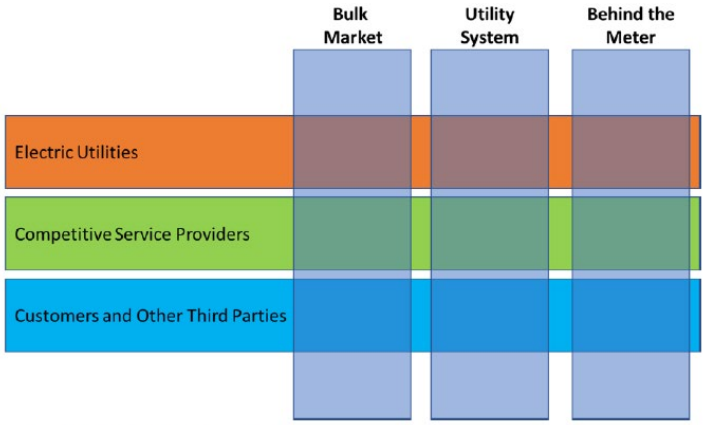


Figure 1: The Virginia Energy Storage Task Force and its Steering Committee identified this framework to shape discussions over the course of its meetings. Each electricity system segment (bulk market, utility, and BTM) was covered during a separate meeting.

These are the **Consensus Recommendations** from the Task Force Report:

1) **Permitting and Regulation**
    a. Improve energy storage permitting to be more supportive of faster development
    b. Develop a guidebook to help local jurisdictions, developers, and installers standardize and navigate both the interconnection process and local zoning and land use processes for energy storage
2) **Behind the Meter (BTM) Incentives**: Provide a BTM incentive to customers to increase energy storage developments (potentially through bringing your own device)
3) **Additional Reports, Studies, and Materials:**
    a. Learn lessons from other states on RD&D, pilot programs, permitting, interconnection, DERs, bring your own device programs, etc.
    b. Bring in a third party consultant to analyze existing and future grid needs in Virginia tied to implementation of the VCEA
    c. Develop a roadmap to help Virginia stakeholders understand how to reach VCEA goals
4) **Education Programs**
    a. Train local first responders on fire safety related to energy storage devices
    b. Stand up consumer energy storage education programs
    c. Continue to convene stakeholder groups such as the Energy Storage Task Force
5) **Other Funding and Incentives**
    a. Additional funding or support for SCC or similar entities
    b. Increase state funding for RD&D and pilot projects for energy storage technologies
    c. Use money from the regional greenhouse gas initiative (RGGI) to push energy storage forward in the state
    d. Leverage federal funding for internet access
6) **Integrated Resource Planning (IRP) Process:** ensure the IRP process includes energy storage issues mentioned in HB 1183
7) **Technology/Infrastructure**
    a. Cast a wide technology net
    b. Support advanced metering infrastructure (AMI)
8) **Other:** Create resilience centers that utilize energy storage to provide power to distressed communities in times of power loss.

These are the **Recommendations Lacking Consensus** from the Task Force Report:

1) **Permitting and Regulation**

    a. Improve and/or standardize the distribution system interconnection study process to make it easier for energy storage resources to connect to the grid.

b. Lower soft costs by accelerating deployments in the near-term
c. Reconsider permitting and RFP requirements for third-party systems, specifically the siting and spacing restrictions.
d. Set up tariff rates to deal with and recognize the bi-directional nature of storage
e. Conduct a preapplication process that looks at the ability to both inject and withdraw power at the same location to eliminate more interconnection studies

2) **Behind the Meter (BTM) Incentives**
    a. Utilize energy storage when deploying charging infrastructure for electric vehicles (EVs)
    b. Enable time of use (TOU) rates and other price signals to encourage new BTM installations
3) **Additional Reports, Studies, and Materials**
    a. Produce a full lifecycle assessment (LCA) of different technologies
    b. Develop a transparent, statewide hosting capacity platform
    c. Conduct a study on geographical storage in Virginia that can be used for hydrogen, air, or carbon dioxide storage
    d. Generate a committee report on what Virginia citizens need and want from energy storage in their communities
4) **Other Funding and Incentives: D**evelop an incentive program for non-wires alternatives
5) **Technology/Infrastructure:** Minimize stranded assets across the grid and repurpose existing assets
6) **Targets:**
    a. Provide clearer goals and targets that include duration and metrics for future requests for energy storage deployments
    b. Review targets on a set schedule so that targets can be potentially accelerated based on progress
7) **Markets**
    a. Clarify accounting for energy storage in the renewable energy certificates (RECs) market
    b. Ensure that energy storage can receive compensation for all values it provides
    c. Explore the potential for recycling markets to retired energy storage deployments and their infrastructure
8) **Request for Proposals (RFP) Processes**
    a. Allow for independent management of competitive procurement processes to ensure fairness
    b. Issue RFPs directly from the state requesting energy storage at state facilities
9) **Other:** Allow for ratebasing of advanced analytics and similar analysis.

Section F of this Report addresses certain significant issues related to both the **Consensus Recommendations** and the **Recommendations Lacking Consensus** in the Energy Storage Task Force report.

3. SHARED SOLAR DOCKETS

The General Assembly, in its 2020 session, approved legislation for two different types of shared solar programs permitting 1) third-party owned and operated 3MW to 5MW solar facilities that are located in a utility's service territory to sell their output to the grid, and 2) individuals or organizations, on a subscription basis, to obtain a bill credit related to a portion of those sales.

One was the "shared solar" program (applicable only to Dominion), which reserves at least 30% of the output for low-income customers. The other was the "multi-family" program (applicable to Dominion and to Kentucky Utilities serving Southwest Virginia), which allows residents of apartment buildings condominiums, and duplex complexes to share the output of a solar array located on the premises or next door. These programs are in addition to provisions that previously authorized utility community solar programs, which are discussed in "Utility Administrated Community Solar" in Section E 9 of this Report.

Features of the shared solar program, which is being addressed in SCC Case No. PUR-2020-00125, include the following:

- Only applies to Dominion territory
- Dominion will be the program administrator, overseeing items including the billing arrangements and the interconnection process.
- At least 30% of subscribers must be low-income customers
- Program initially capped at 150MW of generation but an additional 50MW can be approved by the SCC if the low-income target (which equates to 45MW of generation) is met.
- Utility administers a bill credit based on a subscriber's proportional share of the output from the shared solar facility to which they subscribe.
- As part of the proceeding, the SCC is to establish a minimum bill that will represent the utility's fixed infrastructure and administration costs
    - Low-income customers are to be exempt from minimum bill.
- Program will be fully operational when Dominion completes development of its new Customer Information Platform (CIP) on or before July 1, 2023. Projects can start development sooner than that, but subscribers will not start receiving generation from them until the CIP is in place.

Features of the multi-family solar program, which is being addressed in SCC Case No. PUR-2020-00124, include the following:

- Dominion and Old Dominion Power (ODP) territories.
- Utilities will be the program administrators and administer bill credits based on a subscriber's proportional share of the output from the shared solar facility.
- No low-income requirement
- No cap on the overall size of the program
- Provides for an administrative charge to allow the utility to recover reasonable costs to administer the program
- Minimum billing is not required but utilities have requested a mechanism like the minimum bill to account for fixed costs.
- The solar facility must be located on or adjacent to the multifamily premises
- Program will start six months after regulations are finalized (so probably July 1, 2021).

This legislation requires the SCC to establish final rules for the programs by January 1, 2021. On July 1, 2020 the SCC began rulemaking proceedings for the two programs. Proposed rules for both programs were released on September 21, 2020 with comments on such rules due by November 2, 2020.

After many parties submitted comments regarding the proposed shared solar rules, on December 23, 2020, the SCC adopted rules substantially similar to those proposed, and thereafter issued a minor correcting order on December 23, 2020. Following SCC's orders, on March 1, 2021, Dominion submitted its proposed minimum bill, and on April 1, 2021, providing supplemental information requested by SCC. Following various comments on Dominion's proposed minimum bill, on July 23, 2021, SCC issued an order for notice and a hearing on the shared solar minimum bill and bill credit rate. These issues are pending before SCC.

Like shared solar, after parties' comments on the proposed multi-family shared solar rules, on December 23, 2020, the SCC adopted rules substantially similar to those proposed. On June 29, 2021, the SCC issued an order finding that the calculation of the bill credit rate should utilize information on FERC Form 1 for the two utilities involved because FERC Form 1 is public and is more timely and provides data by jurisdiction. Using this information from current FERC Form 1s, the SCC set the initial bill credit rate for the multi-family shared solar program to 11.765 cents per kilowatt-hour for Dominion and 11.328 cents per kilowatt-hour for KU-ODP. On September 29, 2021, SCC issued an order for notice and a hearing regarding the establishment of the administrative charge to allow the utilities to recover reasonable costs to administer the program. This matter is pending before SCC.

Concerns regarding the proposed rules for the multi-family solar program include adopting Dominion's proposal to define the required administrative costs charge in a manner similar to the minimum bill in the shared solar program. Those representing customers argued that utilities are not authorized to impose a minimum bill amount and instead are only permitted to collect from the program provider "reasonable costs of administering the program": costs such as standby generation and balancing charges do not constitute program administration costs.

"Administrative fee" is not defined in the statute. In the rulemaking proceeding for the Multi-Family Shared Solar Program, **Case No. PUR-2020-00124**, those representing customers are concerned that the SCC opened the door to a huge barrier to the program when the SCC adopted Dominion's definition of an "administrative fee." The customer representatives understood that administrative fee meant the costs to Dominion of administrating the program. In contrast, Dominion said it meant the utility's transmission and distribution costs; standby generation; balancing costs; "nonbypassable charges"; even "banking, balancing and storing fees related to the utility's processing and handling of the excess bill credits."

Although the SCC adopted an expansive view of "administrative fee" when adopting regulations governing the Multi-Family Shared Solar Program, the SCC did not establish what those costs added up to. That crucial determination is being made in the context of the rulemaking for the Shared Solar Program**, PUR-2020-00125.**

The current status is that there is a wide range of options before the SCC as to what the administrative fee—which is essentially a minimum fee for those participating in a shared solar program—should be:

Shares Solar Proponents:.....$7.58
Dominion:.....$74.28
SCC Staff Option A:.....$10.95
SCC Staff Option B:.....$55.10.

Ultimately, the amount of the fee is a policy question for the SCC. The evidentiary hearing on this issue is scheduled for Thursday, November 18, 2021. In the meantime, there have been at least 22 Applications for a License as a Non-exempt Subscriber Organization in the Shared Solar Program filed between July 2, 2021 and September 24, 2021. **Appendix A** contains a listing of those applications.

4. DOMINION 2020 IRP

On May 1, 2020, Dominion filed its 2020 Integrated Resource Plan (IRP) in SCC Case No. PUR-2020-00035. Per Virginia law, the SCC must review the plan and determine whether it is

"reasonable" and "in the public interest." (APCo did not file an IRP in 2020 or 2021: in accordance with Va. Code § 56-599, APCo's next comprehensive IRP is due by May 1, 2022).

The 2020 IRP presented four alternative plans, all of which included the significant development of solar generation, and three of which included the significant development of storage resources. Copied below are the relevant lines from the executive summary table showing the capacity added in each of the alternative plans.

Executive Summary Table: 2020 Plan Results

	Plan A	Plan B	Plan C	Plan D
Solar (MW)	6,720 15-year 11,520 25-year	15,920 15-year 31,400 25-year	15,920 15-year 32,480 25-year	18,800 15-year 40,640 25-year
Storage (MW)	--- 15-year --- 25-year	2,714 15-year 5,114 25-year	2,714 15-year 9,914 25-year	2,714 15-year 9,914 25-year

Of the total new storage capacity, 300 MW represented pumped storage while the remainder represented four-hour lithium-ion battery energy storage systems.

As to solar, the 2020 IRP emphasized the Company's support for a clean energy future and the important role that solar generation will play. The 2020 IRP also included a section on the challenges related to significant volumes of solar generation (Section 5.6), including challenges related to capacity; energy; the solar production profile; black start and system restoration; and constructability.

As to storage, the 2020 IRP included a section on energy storage (Section 5.5.1) that discussed five different types of energy storage, concluding that lithium-ion batteries and pumped storage are the most commercially viable energy storage technologies for utility-scale projects. This section also mentioned the development target for 2.7 GW of energy storage in Va. Code § 56-585.5 and that the Company "will continue to study energy storage to determine the feasibility of constructing this quantity of energy storage capacity." A separate short section of the 2020 IRP (Section 5.4.3) provided a status update on the development of a pumped storage facility in Tazewell County, Virginia.

In the 2020 IRP proceeding, Commission Staff and certain respondents highlighted that Alternative Plans B through D included significant amounts of solar and storage (and offshore wind) resources because the Company forced its model to select those resources rather than allowing the model to choose resources based on economics. Commission Staff and others

took specific issue with the forced addition of a new 300 MW pumped storage hydroelectric facility and the second tranche of offshore wind. In addition, Appalachian Voices (represented by the Southern Environmental Law Center) took issue with the forced addition of solar and storage resources, arguing that the VCEA required the Company to *petition* for the addition of 16.1 GW and 2.7 GW of solar and storage resources, respectively, but that the VCEA does not require the Commission to approve such resources.

On February 1, 2021 the SCC issued a Final Order in which the SCC ruled that it "cannot conclude . . . that [Dominion's] 2020 IRP, as filed, is reasonable and in the public interest for purposes of a planning document." The SCC directed Dominion to include additional analyses in future IRPs to address deficiencies in the 2020 IRP.

2021 IRP Update

On September 1, 2021, the Company filed the 2021 Update to the Integrated Resource Plan in Case No. PUR-2021-00201 ("2021 IRP Update"). The 2021 Update presented three alternative plans, all of which included the development of solar generation, and two of which included the significant development of storage resources. Copied below are the relevant lines from the executive summary table showing the capacity added in each of the alternative plans.

Summary Table: 2021 Update Results

	Plan A	Plan B	Plan C
Solar (MW)	820 15-year 2,140 25-year	14,310 15-year 17,790 25-year	14,310 15-year 20,550 25-year
Storage (MW)	--- 15-year --- 25-year	2,713 15-year 2,773 25-year	3,793 15-year 12,043 25-year

None of the alternative plans in the 2021 IRP Update include new pumped storage.

The 2021 IRP Update did not include significant stand-alone discussion regarding solar resources, other than providing the assumptions incorporated into the modeling related to new solar resources.

As to storage, the 2021 IRP Update (at page 40) included a section that discussed energy storage, including a paragraph on pumped storage. This section concluded that lithium-ion technology would likely be the dominant form of energy storage for the foreseeable future, but

that “the Company will also seek opportunities to expand its understanding of energy storage technologies by evaluating additional forms of energy storage, including long duration storage technologies and establish projects to deploy those technologies where technically and economically feasible.”

On October 28, 2021, the SCC issued its Final Order in the 2021 IRP Update proceeding in which it declared Dominion’s 2021 Update is accepted.

5. RPS Dockets and RGGI Dockets

RPS in the VCEA

The VCEA takes a dual-pronged approach to a transition to non-carbon emitting energy in Virginia for the state’s two largest public utilities. First, it contains provisions related to both the retirement of carbon emitting resources, and provisions related to the construction of new, non-carbon emitting resources (namely, solar and wind-based resources). Second, it contains provisions establishing renewable portfolio standards (RPS) for each utility. Compliance with the RPS is evidenced by obtaining and retiring qualifying Renewable Energy Certificates (RECs) consistent with the PJM-EIS Generation Attribute Tracking System. Each year the utilities must submit a plan for procuring the mandated solar and wind generation, and complying with the RPS.

On July 10, 2020, the SCC entered its order establishing the 2020 RPS Proceedings for Dominion (PUR-2020-000134) and APCo (PUR-2020-000135) in order to implement the requirements of section 56-585.5 D 4 and the VCEA that the utilities submit plans and petitions for approval of new solar and onshore wind generation located in the Commonwealth by 2035 ("RPS Filing"). The utilities are required to make RPS Filings annually, commencing in 2020 and concluding in 2035. The RPS Filings may also contain utility requests for (i) approval to construct such renewable energy facilities, and (ii) for approval or update of a rate adjustment clause to recover the costs of such facilities. Additionally, the utilities' RPS Filings must include individual utility plans to meet the energy storage project targets established by the VCEA. The legislation further requires the SCC to determine whether an RPS Filing is reasonable and prudent, taking into consideration, *inter alia,* the RPS and carbon dioxide reduction requirements, fuel savings, and the promotion of new renewable generation and energy storage resources and associated economic development. The order requires each utility to file with the SCC its 2020 RPS Filing, either as a full petition or as a more abbreviated plan document, no later than November 2, 2020.

Dominion filed its 2020 RPS plan on October 30, 2020 while APCo filed its plan on November 2, 2020. Each filing includes proposals to add large amounts of new solar generation over the next

decade. Dominion's plan requests approval to add almost 500 MW of new solar generation, comprised of both utility-owned facilities and power purchase agreements with third-party-owned facilities. Dominion proposes larger additions of solar and offshore wind over the next 25 years. APCo plans to add approximately 210 MW of solar generation over the next 3 years. APCo's plan also proposes to add 2,200 MW of onshore wind and 400 MW of storage resources by 2050.

On April 30, 2021, the SCC issued a Final Order approving APCo's first annual RPS plan for the development of new solar, onshore wind, and energy storage resources under the RPS program established by the VCEA. APCo's plan did not include any specific resource proposals. The SCC directed that future filings include a least cost plan that meets applicable carbon regulations and the mandatory RPS Program requirements of the VCEA. The Final Order also directed APCO to identify in future RPS filings how requests for proposal assessed environmental justice considerations, including any non-price considerations that were included in APCo's RFP analysis.

Dominion's 2020 RPS Plan / Rider CE-1

- Dec 31, 2024, All oil and coal-fired plants to be retired (excluding Virginia City Hybrid Energy Center, because it co-fires with biomass, and Clover, because it is co-owned with a cooperative)
- Dec 31, 2028, All biomass retired (excluding VCHEC)
- Dec 31, 2045, All carbon-emitting facilities retired

RPS Compliance Requirements for Dominion

Dominion's 2020 RPS Plan reported on Dominion's progress toward meeting the VCEA development targets, and then provided figures showing the amount of Company-owned and PPA resources that Dominion intended to target annually through 2035, hitting the established interim targets and the required 65% / 35% split between Company-owned resources and PPAs. In the discussion of solar and storage, respectively, the Dominion reported on the RFPs that it had issued or planned to issue, as well as other relevant context, such as the proceeding to establish energy storage regulations that was ongoing at the time of filing. Dominion's 2020 RPS Plan also contained information the Commission directed the Company to include with this filing, including incremental bill projections associated with RPS Program-related costs and benefits.

With the 2020 RPS Plan, Dominion submitted requests for CPCNs to construct and operate 3 solar generating facilities totaling approximately 82 MW (*i.e.*, the CE-1 Solar Projects); to recover the costs of those projects through a rate adjustment clause designated Rider CE; and for a prudence determination to enter into 6 solar PPAs totaling approximately 416 MW.

During the proceeding, neither Staff nor respondents took significant issue with the requests for CPCNs, Rider CE approval, and PPA prudence determinations. As to the RPS Development Plan, many of the issues focused on solar rather than storage, as the Company did not propose any specific new storage resources as part of the filing. Staff and many respondents took issue with the fact that the Company only put forth one development plan for solar, onshore wind, and storage that may not represent least-cost planning. Many respondents also raised concerns regarding the Company's plans for compliance with the RPS Program itself—rather than the development targets within the VCEA—and issues related to the RPS Program, such as methods to comply with the one percent carveout for distributed energy resources. Appalachian Voices (represented by the Southern Environmental Law Center) argued that the VCEA required the Company to *petition* for the addition of 16.1 GW and 2.7 GW of solar and storage resources, respectively, but that the VCEA does not require the Commission to approve such resources.

On April 30, 2021, the Commission approved all components of the Company's petition, including the 2020 RPS Plan. The Commission also imposed many additional requirements for future annual filings, including presentation of a least-cost plan that meets applicable carbon regulations and is consistent with what the Company must provide in its integrated resource plan proceedings; evaluation of RECs for RPS Program compliance from a variety of sources; and evaluation and ranking the potential environmental justice impacts of different renewable options.

Dominion's 2021 RPS Plan / Rider CE-2, Case No. PUR-2021-00146

In September 2021, Dominion presented its second annual filing under the VCEA. Dominion's 2021 RPS Plan reported on the Company's progress toward meeting the VCEA development targets to date, and then provided revised figures showing the amount of Company-owned and PPA resources that the Company intended to target annually through 2035, hitting the established interim targets and the required 65% / 35% split between Company-owned resources and PPAs. Like with Dominion's 2020 RPS Plan, in the discussion of solar and storage, respectively, Dominion reported on the RFPs that it had issued or planned to issue, as well as other relevant context. As to storage specifically, Dominion's 2021 RPS Plan addressed plans for behind-the-meter incentives, non-wires alternative programs, and peak demand reduction programs related to energy storage as required by the Commission's Storage Regulations. The Company stated that it expects that the development of energy storage will span its generation, transmission, and distribution functions, and provided a status update on the status of storage-related development within each function.

Dominion's 2021 RPS Development Plan also contained information the Commission directed the Company to include with this filing, including modeling results and sensitivities. To meet the modeling-related requirements, the Company incorporated the results of two of the three alternative plans from the 2021 IRP Update—Alternative Plans A and B. Dominion also presented the results of required sensitivities related to RECs for RPS Program compliance.

With Dominion's 2021 RPS Development Plan, the Company submitted requests for CPCNs to construct and operate 13 utility-scale projects totaling approximately 661 MW of solar and 70 MW of storage (*i.e.*, the CE-2 Projects); to recover the costs of those projects plus an additional two distributed solar projects totaling approximately 4 MW through Rider CE; to update Rider CE for the recovery of costs associated with the approved CE-1 Solar Projects; and for a prudence determination to enter into 24 PPAs for 32 separate solar and energy storage resources totaling approximately 253 MW of solar and 33 MW of storage.

This proceeding is currently in the discovery phase, and a hearing is scheduled for December 14, 2021.

Regional Greenhouse Gas Initiative (RGGI)

RGGI is a regional market-based trading program for carbon dioxide emissions that currently is being implemented by a number of states on and near the east coast. In the 2020, the General Assembly passed the Clean Energy and Community Flood and Preparedness Act, Senate Bill No. 1027 and House Bill No. 981, which authorized Virginia to become a full participant of RGGI, and authorized DEQ to implement its previously finalized CO_2 Budget Trading rule, which was designed to provide for Virginia's entrance into and participation in RGGI. Following passage of this statute, DEQ revised its rule finalizing it on June 25, 2020, and it became effective on July 10, 2020. To comply with RGGI through Virginia's CO_2 Budget Trading rule, regulated sources of carbon emissions need to purchase emission allowances through the RGGI auctions. Docket PUR-2020-00169 at the SCC was established for a proceeding regarding the recovery of costs related to Dominion's compliance with Virginia's CO_2 Budget Trading rule. The SCC is currently considering the environmental advocates request to mandate least cost compliance.

Dominion sought recovery of costs resulting in a total revenue requirement of $168,260,000 for the rate year of August 1, 2021, to July 31, 2022. On August 4, 2021, SCC issued an order approving Dominion's application, subject to actual cost true-up in future cases. On August 24, 2021, a respondent sought reconsideration regarding a portion of the order related to how Dominion shows that its RGGI compliance plan corresponds to Dominion's RPS plan filings. Environmental advocates expressed concern that Dominion had failed to conduct least-cost long-term compliance by simply running its carbon-emitting units on a "business as usual" approach then purchasing however many allowances were necessary to cover the associated emissions. The environmental advocates argued that Dominion's approach failed for two reasons: (1) it increased costs unnecessarily and (2) failed to actually reduce emissions, which is the whole point of the RGGI program. That petition for reconsideration is pending before SCC.

RECs Obtained for Compliance with the VCEA's RPS

As discussed above, public utilities must comply with the VCEA's RPS by obtaining and retiring qualifying RECs. While each public utility will formulate its own plan as to how to obtain the necessary, qualifying RECs, among other things, it is likely that RECs will be generated from public utility owned renewable resources and will also be obtained from third-party owned renewable resources through purchase agreements and market purchases. Docket PUR-2020-00170 at the SCC was established for a proceeding regarding the recovery of costs related to Dominion's obtaining qualifying RECs necessary to comply with the VCEA's RPS. On July 1, 2021, SCC approved Dominion application to recover a total revenue requirement of $13,230,000 for the rate year of August 1, 2021, to July 31, 2022, for the recovery of costs related to REC purchases to comply with the VCEA's RPS requirements. In addition, in the September 23, 2021 Final Order in Dominion's RPS Cost Allocation Proceeding, PUR-2020-00164, the SCC determined that RECs associated with customers purchasing 100% renewable supply from competitive service providers ("CSPs") should be counted towards Dominion's VCEA RPS compliance if such RECs satisfy VCEA parameters.

6. 2021 LEGISLATIVE UPDATE

The following is a synopsis of solar and energy storage legislation from the 2021 General Assembly session.

HB2006 - Energy storage systems; definitions, taxexemption, revenue share for systems.

- Declares that energy storage systems are included in the definition ofcertified pollution control equipment and facilities, making energy storage systems exempt from state and local taxation. Applies to projects with alternating current (AC) storage capacity of more than five megawatts and less than 150 megawatts.
- Allows localities to assess a revenue share of up to $1,400 per megawatt on energy storage systems.
- The bill provides that on July 1, 2026, and every five years thereafter, the maximum amount of the revenue share that a locality may impose on energy storage and solar energy projects shall be increasedby 10 percent. (Also in HB 2269)

HB 2148 - Small renewable energy projects; energystorage

- Expands the definition of a "small renewable energy project" to include chemical energy storage and hybrid facilities (e.g. solar plusstorage)
- Allows qualifying storage projects to use DEQ's permit-by-rule (PBR)process for facilities under 150 MW

HB 2201/SB 1207 - Solar and energy storage projects; siting agreements

- Expands existing provisions related to siting agreements and zoning special exceptions for solar projects located in an opportunity zone toapply statewide
- Localities can negotiate for capital improvements, cash payments, orassistance with the deployment of broadband.
- Adds energy storage to eligible projects

HB 1925 - Virginia Brownfield and Coal Mine Renewable Energy GrantFund and Program

- Creates a fund for the purpose of awarding grants to renewable energyprojects that are located on brownfields or previously coal mined lands
- Intent is to pursue federal funding – no state funding is currently provided.

HB 1994 - Small agricultural generators; expands definition.

- Expands the definition of small agricultural generator to include distilleries, breweries and wineries.
- Designation provides some opportunities that are unavailable to regular net metering customer generators. For example, small agricultural generators can aggregate multiple meters in separate but contiguous locations.

HB 2034/SB 1420 - Electric utilities; non-jurisdictional customers,third party power purchase agreements.

- Clarifies that the PPA cap applied to both jurisdictional and non-jurisdictional customers in APCo and ODP territories.

D. FEDERAL REGULATION IMPACTING STORAGE AND DISTRIBUTED SOLAR RESOURCES

1. FERC ORDER 841

In addition to being impacted by state regulations, the deployment of energy storage and deployment of energy storage and distributed solar generation is impacted by federal regulation that governs PJM Interconnection (PJM), the regional transmission organization (RTO) operating the regional and grid and wholesale market that includes Virginia.

Opening the wholesale markets to emerging technologies so that they can compete on an equal basis with all other resources fosters competition in those markets, thereby helping to ensure efficient market outcomes and cost-effective rates for consumers. On this premise, and after evaluating the existing Regional Transmission Organization (RTO) and Independent System Operation (ISO) market rules for energy storage, the Federal Energy Regulatory Commission (FERC) issued Order 841 in February 2018 to require the RTOs/ISOs to remove barriers to the participation of energy storage resources in their capacity, energy and ancillary service markets.

Order 841 required the RTOs/ISOs to create a participation model (i.e. a set of market rules) for all energy storage technologies that recognizes their physical and operational characteristics and facilitates their participation in the RTO/ISO markets. The final rule included five primary requirements related to the participation of storage resources. First, it requires the RTOs/ISOs to ensure that a resource using the participation model for storage resources is eligible to provide all capacity, energy, and ancillary services. While storage resources will still need to meet the minimum technical requirements of providing these services, this reform makes sure the storage resources have access to the markets and are not unnecessarily prohibited from selling certain services as was the case in multiple markets.

Second, the RTOs/ISOs are required to ensure that a resource using the participation model for storage resources can be dispatched and can set the wholesale market clearing price as both a wholesale seller and wholesale buyer. This reform acknowledges the bidirectional characteristics of energy storage (i.e. its ability to charge from the grid, and discharge back to the grid). Consistent with the economic theory upon which they are built, the RTO/ISO markets generally put resources either on the supply side of the market (generators of electricity), or on the demand side of the market (consumers of electricity), but since energy storage can to do both, Order 841 ensured that it is able to participate as both supply and demand.

Third, Order 841 required the RTOs/ISOs to account for the physical and operational characteristics of electric storage resources in their participation models. The energy limitations and bidirectional capabilities of storage resources make operating them unlike other energy assets. Making sure the resources are able to submit information about their physical constraints or operational limitations either as a dynamic part of their market offers or as a static characteristic of the resource ensures that it is being modeled and dispatched consistent with its capabilities. Order 841 established a list of 13 physical and operational characteristics that the RTOs/ISOs must account for and also provided them flexibility to propose other characteristics they think are necessary to operate storage resources. This list included characteristics like state of charge, maximum charge and discharge rates, minimum charge and discharge rates, maximum state of charge, and minimum state of charge. The list of characteristics was intended to be broad enough to acknowledge the potential constraints of all

energy storage technologies, but submission of the information was not mandatory as some of the characteristics may not be relevant for a particular technology.

Fourth, because several RTOs/ISOs had size requirements that were creating a barrier to entry for small storage resources, Order 841 required that the RTOs/ISOs allow energy storage resources at least as small as 100 kilowatts to use their participation models for storage resources. This was also consistent with the requirement that transmission-connected, distribution-connected and behind-the-meter storage resources be able to participate in the RTO/ISO markets, and the fact that many smaller storage resources are being developed today.

Lastly, Order 841 required each RTO/ISO to ensure that storage resources are able to pay the wholesale price for their charging energy. This requirement extends to all resources that fall under the definition of electric storage resources in the Final Rule , and not just those that are using the participation model for storage resources. Because charging an electric storage resource to sell electricity back into the wholesale markets is not an end use of electricity, this qualifies as a wholesale transaction, and therefore the relevant wholesale rate is applicable. However, while wholesale rates are generally lower than retail rates thus potentially improving the competitiveness of storage resources in the markets, storage resources were not precluded from paying the retail rate for their charging energy, buying it bilaterally, or charging off a co-located generator.

PJM Compliance

PJM's Energy Storage Resource (ESR) participation model became effective in December 2019 and further enhanced the ability of storage resources to participate in PJM's capacity, energy and ancillary service markets. Key components of the ESR model included the three modes under which energy storage may elected to participate: charge, discharge and continuous. The continuous mode allows storage resources that can move seamlessly across their full charging to discharging range to submit offers to buy and sell energy in the market across that entire range. The ESA model also added mechanics for managing state of charge and numerous new physical and operational parameters for modeling and dispatching ESRs.

In a separate proceeding, which FERC opened in response to PJM's 841 compliance filing, FERC conducted an investigation of PJM's then-current 10-hour minimum run-time requirement for energy storage resource in the capacity market and ultimately made PJM submit tariff revisions for new minimum run-time rules for all capacity resources. PJM consequently developed an effective load carrying capability (ELCC) methodology for accrediting capacity value to energy storage and other capacity resources. The ELCC methodology looks at the amount of additional load that the PJM system can supply with a particular type of resource, such as energy storage, with no net change in reliability and determines the percentage of capacity credit that different

types of resources should receive as a result. Since energy storage resources have different durations, and longer duration storage resources have greater ability to carry more load, those longer duration energy storage resources therefore receive higher valuation under ELCC. FERC accepted PJM's ELCC proposal in July 2021 and following is a summary of the ELCC class rating for the capacity auction with a 2023-2024 delivery year. These class ratings will be updated on an ongoing basis using updated system models for transmission, generation and load.

ELCC Class	ELCC Class Rating for 2023/2024 BRA
Onshore Wind	15%
Offshore Wind	40%
Solar Fixed Panel	38%
Solar Tracking Panel	54%
4-hr Storage	83%
6-hr Storage	98%
8-hr Storage	100%
10-hr Storage	100%
Solar Hybrid Open Loop - Storage Component	82%
Solar Hybrid Closed Loop - Storage Component	82%
Hydro Intermittent	42%
Landfill Gas Intermittent	59%
Hydro with Non-Pumped Storage*	96%

* PJM performs an ELCC analysis for each individual unit in this class. The value shown in the table is a representative value provided for informational purposes

2. FERC ORDER 845

After numerous disputes regarding the uncertainty on cost and schedule in the interconnection process, particularly as significantly more clean energy resources were trying to connect to the transmission grid, on April 19, 2018, FERC issued Order No. 845, a final rule revising the pro forma Large Generator Interconnection Procedures and pro forma Large Generator Interconnection Agreement. FERC issued ten specific reforms and explained the revisions sought to improve certainty for interconnection customers, promote more informed decisions, and enhance the interconnection process. To improve certainty for interconnection customers, FERC adopted reforms that:

- enable an interconnection customer to exercise its option to build, regardless of whether the transmission provider can meet the customers' proposed construction dates; and
- impose a revised dispute resolution requirement on all transmission providers.

To promote more informed interconnection decisions, FERC adopted reforms that:

- require all transmission providers to publish a method for identifying contingent facilities;
- require transmission providers to offer access the study processes and assumptions for maintaining network models used for interconnection studies;
- alter the definition of "Generating Facility" in the LGIP and LGIA to include electric storage resources; and
- require transmission providers to post interconnection study reporting requirements on a quarterly basis.

To enhance the efficiency of the interconnection process, FERC adopted reforms that:

- enable interconnection customers to request interconnection service at a level lower than their generating facility capacity;
- require transmission providers to allow interconnection agreements for limited operation of a generating facility before completion of the full interconnection process;
- require transmission providers to develop an expedited process for interconnection customers wanting to use or transfer surplus interconnection service; and
- require transmission providers to establish a procedure to assess whether a change to an interconnection customer's proposed technology occurring during the interconnection process would constitute a material modification.

Several of these reforms had specific implications for energy storage resources and even more so for energy storage paired with renewable generation (or hybrid facilities). In addition to explicitly including electric storage resources in the definition of Generating Facility, the reforms for provisional interconnection service, surplus interconnection service, and requesting interconnection service at a level lower than generating facility capacity offered greater pairing of storage with renewables. The idea was that the intermittency of renewable generation created opportunities for storage to effectively fill in the gaps when the renewable resources were not generating, and that if this smoothing/firming of renewable output was the intended use of the energy storage, then such resources should not have to pay for additional interconnection capacity above what is needed for the renewable generation. Additionally, by allowing technology changes during the interconnection process (which can take multiple years) storage and renewable developers are able to utilize the latest and most cost-effective technology when they begin construction of their facility instead of having to commit to a specific technology that may become obsolete by the time they finish the interconnection process.

PJM has complied with the requirements of Order 845 and these reforms are now available for interconnection customers requesting FERC-jurisdictional interconnection service in Virginia.

3. CAPACITY MARKET REFORMS

As states around the country have implemented clean energy legislation and/or provided incentives to the development of clean energy resources, there has been an impassioned debate about how the wholesale capacity markets should accommodate such resources. One side of the debate believe that clean energy policies and any related incentives are simply accounting for externalities that the wholesale markets do not otherwise address and therefore new market equilibriums should result without additional intervention. The opposing perspective is that state clean energy policies can result in suppression of otherwise competitive prices and that it is necessary for the wholesale markets to encourage market entry by ensuring adequate revenues to the marginal resources in those markets, which is viewed by many as combined cycle natural gas generation. An administrative mechanism intended to protect against buyer-side market power and manipulation and that has also been intended by some to prevent any price suppression associated with state-sponsored resources is the minimum offer price rule (or MOPR). The MOPR has been central to the capacity market reform debate in PJM which establishes minimum prices at which "subsidized" resources must offer into the capacity market.

There has been a long and somewhat political debate over the use of the MOPR in PJM and its application in state-sponsored resources. This has been particularly relevant in Virginia since the passage of the Clean Economy Act and the ongoing implementation of its clean energy targets. In June 2018, FERC found that PJM's MOPR rules needed to change because they only applied to natural gas resources and failed to consider the impact of state subsidies on PJM's wholesale markets, and while there have been numerous interim filings and orders since that initial finding.

In 2021, MOPR reform changed course with the new administration appointing FERC Commissioner Glick as chairman. Taking guidance from Chairman Glick that the latest MOPR reforms should once again change to accommodate state policies promoting clean energy resources, PJM initiated an expedited stakeholder process in April 2021 to consider a new MOPR design. On July 30, 2021, PJM submitted a new MOPR proposal to the FERC. The new "Focused MOPR" is narrowed to only apply to resources that have the incentive and ability to suppress market prices (i.e. large load-serving entities that also own generation and have the ability to offer that generation at artificially low prices to suppress their cost of electricity) and those resources that are already being paid by a state or government entity for a FERC-jurisdictional product (i.e. energy, capacity or ancillary services). The new rules also provide self-supply entities exemptions from application of the MOPR. On September 28, 2021, the

FERC failed to act on PJM's Focused MOPR filing within the 60-day deadline allowing the changes to go into effect by operation of law

In PJM, self-supply entities and states can also elect the Fixed Resource Requirement (FRR) Alternative as an option to participating in the PJM capacity auctions. The FRR Alternative allows a self-supply entity to develop a plan to remove its generation resources and respective load from the capacity auctions. Under this alternative, the generators are not paid capacity revenues, nor does the respective load pay capacity charges. However, generation resources are still required to perform in the PJM energy and ancillary service markets. In May 2021, Dominion elected the FRR Alternative beginning with the 2022-2023 Delivery Year. According to PJM rules, Dominion must remain in the FRR Alternative for a minimum of five years.

4. FERC ORDER 2222

Issued on September 17, 2020, FERC Order 2222 is intended to remove barriers that have been preventing distributed energy resources (DERs) from competing on a level playing field in the organized capacity, energy and ancillary services markets run by regional grid operators such as PJM. According to FERC, DERs are small-scale power generation or storage technologies (typically from 1 kW to 10,000 kW) that can provide an alternative to or an enhancement of the traditional electric power system. DERs can be located on an electric utility's distribution system, a subsystem of the utility's distribution system or behind a customer meter. They may include electric storage, intermittent generation, distributed generation, demand response, energy efficiency, thermal storage or electric vehicles and their charging equipment. In a similar vein as Order 841 governing energy storage, removing barriers to these resources will help to not only promote competition in the wholesale markets, but also help DERs provide all of the services they are capable of providing, creating new business models and helping to enable a transition to a modern and distributed energy system.

Order 2222 enables DERs to participate alongside traditional resources in the wholesale markets through aggregations, and will help provide a variety of benefits including: lower costs for consumers through enhanced competition, more grid flexibility and resilience, and more innovation within the electric power industry. Specifically, PJM will have to minimum size limit for DER aggregations that does not exceed 100 kW as well as address technical considerations such as:

- locational requirements for DER aggregations (i.e. how closely together the DERs in a DER aggregation must be located);
- distribution factors and bidding parameters (i.e. how the DER aggregation is needs to represent its geographic location and other physical characteristics in its offers to the PJM market);

- information and data requirements (i.e. what information is specifically required of the aggregation as a whole and its constituent DERs);
- metering and telemetry requirements (i.e. for the DER and its member resources); and
- coordination of dispatch and operations among the regional grid operator, the DER aggregator, the distribution utility and the relevant retail regulatory authority.

The rule also directs the grid operators to allow DERs that participate in one or more retail programs to participate in its wholesale markets and to provide multiple wholesale services, but to include any appropriate, narrowly designed restrictions necessary to avoid double counting. PJM is required to make its compliance filing on February 1, 2022 after receiving an extension from the FERC. As part of its order granting extension, FERC required PJM to submit a detailed stakeholder process schedule and status reports every 90 days until submission of their final compliance filing. While much stands to be determined in this landmark rulemaking, it will certainly play out over the coming years of VCEA implementation and create new business models for the growing number of clean distributed resources in the Commonwealth.

Operating Reserve Reforms

On May 21, 2021, FERC approved a PJM filing to revise its Operating Reserve Demand Curve (ORDC). The new approach utilizes a sloped demand curves (instead of step-changes) for operating reserves. The sloped curve will indicate the price of reserves above the minimum requirement, and PJM will have differently shaped ORDCs for the different reserve products and for different seasons that will also include time-of-day related provisions. While some have argued that the sloped demand curve will more appropriately compensate reserve resources, such as energy storage, above the minimum requirement, others have suggested that the sloped curve does not accurately reflect reliability requirements established by the North American Electric Reliability Corporation (NERC) and that it therefore overcompensates reserve resources, potentially helping to keep older fossil fuel generators operating longer. This debate may have been cause for the ORDC changes being remanded back to FERC in August 2021, creating some uncertainty regarding if and when the ORDC changes will be implemented.

Interconnection Process Reforms

As evidenced by Appendix XX, the declining costs of clean energy and associated policies that have encouraged its development have caused interconnection requests, particularly for solar, wind and energy storage, around the country to increase to unprecedented levels. The volume of new interconnection requests has tested the limits of existing procedures, causing bandwidth constraints for transmission providers and revealing significant process inefficiencies. Interconnection studies for new requests in PJM have been delayed multiple times over the last year and PJM has initiated an Interconnection Process Reform Task Force to

discuss challenges related to the interconnection process and look for opportunities to improve the process via PJM's Consensus Based Issue Resolution (CBIR) process. The Task Force kicked off in April 2021 and is currently considering proposals for interconnection process reforms from various stakeholders in PJM.

E. FEDERAL LEGISLATION

On October 28, 2021, the White House released a detailed framework of the long-discussed Build Back Better (BBB) legislation, focused on climate and social policy. Although, as of this drafting, the bill has not passed the House and Senate, all indications are that the legislation will be put to a vote in the days and weeks ahead and should pass. The BBB framework proposes approximately $1.75 trillion in new federal spending, to be spread over approximately 10 years. Within that package $555 billion is focused on climate and energy measures. According to framework documents released by the White House, that $555 billion breaks out into four broad categories: $320 billion for clean energy and transportation tax credits and incentives; $110 billion to support domestic manufacturing of clean energy technologies (and underlying materials); $105 billion for resilience investments; and $20 billion for federal procurement of clean energy and transportation technologies.

The Authority takes note, in particular, of the largest single tranche – the $320 billion in tax credits and incentives – given how those financial measures are likely to further reduce the cost of solar and energy storage projects. Over the past decade-plus, federal tax policy, chiefly in the form of the ITC, PTC, and EV tax credit, has been an accelerator of wind and solar deployment, as well as EV procurement. Under this legislation, those tax incentives, and others like them, would be extended for another decade and strengthened (through measures such as "direct pay"), further improving the already robust economics of solar and energy storage. Per White House analysis, these credits should improve the economics of not only large-scale solar, but also distributed solar projects, reducing their upfront costs by approximately 30% and shortening the payback period for them by roughly 5 years.

All indications are that the BBB legislation will contain significant resources, appropriated directly to states, to help accelerate the deployment of clean energy and electrified transportation – much of that located within the $105 bucket of funds for resilience investments. Notably, the legislation should contain approximately $29 billion for a GHG Reduction Fund (known informally as a Clean Energy Accelerator). Dollars in that fund will be spread across a variety of zero-emissions technologies, including solar and battery storage, to help support the deployment of those technologies in communities across the country, particularly low- and moderate-income communities that have been historically underserved. In a similar vein, the legislation is also likely to contain $3 billion in environmental and climate

justice block grants, part of the President's Justice40 initiative. Early analysis suggests those dollars can be used to finance the construction of renewable energy projects in frontline communities.

The Authority will continue to carefully monitor this legislation, and the associated Bipartisan Infrastructure Framework (BIF), as these measures move towards final passage and implementation. We would recommend that Virginia policymakers and regulators do the same, as initial analysis suggest such measures will help the Commonwealth to meet its VCEA goals and address related issues of environmental justice and the just transition.

F. UPDATE ON SOLAR AND ENERGY STORAGE DEPLOYMENTS IN VIRGINIA

According to the Solar Energy Industries Association (SEIA), total installed solar capacity in Virginia is 2,629 MW through Q2 2021, ranking the Commonwealth 11th in the nation – down from 4th in 2020 – or enough to power 283,853 homes. SEIA projects a growth of 4,040 MW over the next 5 years (6th in the nation).[1] Other Virginia solar statistics of note:

- Virginia Solar Jobs: 4,312 (ranks #16)
- VA Solar Jobs Per Capita: 1:2,007 (ranks #26)
- Virginia is in the #4 slot in the country for solar employment, and top 10 nationally for growth, with a 120% increase since 2015.
- Increases from the utility scale solar sector has made up for slowdowns and declines in the residential and commercial sector. [2]

It should be noted that the COVID-10 pandemic has had negative impacts on the solar industry workforce in Virginia as it has elsewhere.

According to the 2020 Solar Jobs Census research published in May 2021 from the Solar Energy Industries Association and partners, there was a 6.7% drop (nationally) from 2019 due to pandemic restrictions and increased labor productivity.

"The residential and commercial segments were hit hardest by the pandemic in the spring as social distancing requirements limited installers' ability to access job sites and obtain new business. Despite increases in demand over the second half of the year, the segment has yet to ramp up to pre-pandemic levels. Total residential and commercial solar installation jobs declined by roughly 5,500 in 2020 or 4.3%".[3]

[1] https://www.seia.org/state-solar-policy/virginia-solar
[2] https://www.seia.org/research-resources/national-solar-jobs-census-2020
[3] https://www.seia.org/sites/default/files/2021-05/National-Solar-Jobs-Census-2020-FINAL.pdf

The following sections represent a status update of solar energy and energy storage deployment at the time of this report.

1. Dominion Battery Storage Pilot

On February 18, 2020 in Case No. PUR-2019-00124, the SCC issued its Final Order approving Dominion's three pilot projects proposed as part of its battery storage pilot program.

This first pilot project involves deploying a 2 MW/4MWh AC lithium-ion battery system at a substation in New Kent County to study the prevention of solar back-feeding onto the transmission grid.

The second pilot project involves deploying a 2MW/4MWh AC lithium-ion battery system at a substation in Hanover County to study batteries as a non-wires alternative to reduce transformer loading.

The Hanover and New Kent projects are expected to go into operation Q1 2022.
The third pilot project, a solar plus storage facility, involves deploying a lithium-ion battery system at the Scott Solar Facility in Powhatan County consisting of a 2 MW/8 MWh DC system with a 10 MW/40 MWh AC-coupled system to study solar plus storage capabilities. The battery storage system at the Scott solar project has a Q4 2021 anticipated in service date.

The Scott solar project has a Q4 2021 anticipated in service date.

2. Dominion Solar Plus Storage

Dominion Energy has four other solar plus storage projects under development in addition to the above referenced Scott Solar Facility.

- The Dulles Project includes 100 MW of solar and 50 MW of energy storage at Dulles Airport in Fairfax and Loudoun Counties is expected to enter service in 2023.
- The Merry Point Project project in Lancaster County includes 100 MW of solar and 50 MW of storage and is expected to enter service in 2025.
- The Cox Project in Halifax County includes 16 MW of solar and 8 MW of storage and is expected to enter service in September 2023.
- The Sinai Project in Cumberland County includes 10 MW of solar and 5 MW of storage and is expected to enter service in September of 2023.

Dominion Energy will own the Dulles and Merry Point projects and will purchase the output of the Cox and Sinai projects from a third-party developer.

3. DOMINION DRY BRIDGE ENERGY STORAGE PROJECT

Dominion Energy is currently pursuing the approval of a Certificate of Public Convenience and Necessity from the SCC for the 20-megawatt / 80 megawatt-hour Dry Bridge Energy Storage project as part of its plan to meet requirements of the VCEA and annual RPS plans. The project will be a lithium-ion battery storage project located in Chesterfield County and was acquired from Charlottesville-based battery energy storage developer East Point Energy. Dry Bridge is expected to enter service in 2022 and will be capable of performing several grid services including:

- Firming of intermittent, renewable energy
- Grid resilience by creating a more distributed electric grid
- Consumer value by providing capacity, energy, and ancillary services into the PJM wholesale energy market.

4. THREE SISTERS ENERGY STORAGE PROJECT

As part of its recent second annual clean energy filing at the VA SCC, Dominion Energy announced that it will purchase the output of the 20 MW Three Sisters Energy Storage facility currently under development by a third-party in Southampton County.

5. REC BATTERY STORAGE PROJECT

Rappahannock Electric Cooperative (REC) and East Point Energy, a leading energy storage project developer commenced the first grid-scale energy storage project by a Virginia electric cooperative with the installation of a 2MW/8MWh battery storage system with a peak capacity of 2 MW and a duration of 8 megawatt hours, or enough to power about 1,000 homes for 8 hours.

Powin Energy Corp. served as the project's integrator and equipment provider. Indie Energy, based in Austin, Texas, provided technical and engineering support to the project. The project began construction in March of 2021 and is now in commercial operation.

Photo Credit: East Point Energy

The project is located in Spotsylvania County and is expected to provide multiple values to the grid, including:

- Providing resiliency to REC member-owners by temporarily providing electricity at times when the transmission system fails and the substation and the members served by it would otherwise be without power;
- Managing wholesale power costs by dispatching stored energy during peak times when electricity is more expensive for the cooperative to purchase; and
- Delaying the need for substation upgrades.

All of these uses help REC provide its member-owners more resilient, sustainable, and affordable energy. Additionally, REC will use this project to learn how additional energy storage projects can be deployed on its system in the future.[4]

6. CITY OF DANVILLE BATTERY STORAGE PROJECT

In January 2021, the Danville City Council voted to authorize the city manager to enter into an agreement for a 10.5 MW/24.5 MWh battery energy storage project as recommended by the Danville Utility Commission.

Danville Utilities has been evaluating various ways to lower electric demand during transmission and capacity peak hours. Approximately 30% of the City's power supply costs are demand related and can be lowered by various types of peak shaving. After extensive evaluation, Council staff recommended pursuing a battery energy storage system that would be

[4] Short video of the Rappahannock Electric battery project: https://youtu.be/J_jaNokNWVA

beneficial to the ratepayers of Danville Utilities. The staff proposed entering into a 20-year capacity agreement with Delorean Power to construct, own, and operate the lithium-ion battery storage system.

Danville Utilities is billed not only for how much power it buys but when it is generated and when it is delivered. Transmission charges are based on the cost of moving high voltage electricity here from the facility that generates that electricity. Capacity charges are based on the highest amount of electricity that the utility may need at one time for its customers. Congestion charges are based on when heavy electricity use is causing parts of the power grid to operate near its limits. The battery storage project will help offset rising transmission charges, as well as capacity and congestion charges. The batteries would be charged during off-peak energy use times when those costs are lower. The stored power would be discharged during on-peak times, reducing the need for power from outside sources when costs are higher.

Under the agreement authorized on January 19, 2021, Delorean Power would construct, own, and operate the large outdoor lithium-ion battery storage system at Danville Utilities' warehouse property on Industrial Avenue. The battery storage system will be enclosed in eight containers about 40 feet long and spaced several feet apart.

The City would not be responsible for any of the upfront capital costs or the maintenance of the facility.[5]

7. City of Martinsville Battery Storage

The Finland based company Wärtsilä is introducing its new modular energy storage product in a deployment that will allow the city of Martinsville, Virginia, to lower its power costs and stabilize the surrounding grid.

AEP OnSite Partners, a subsidiary of American Electric Power, plan to deploy Wärtsilä's a 9 MW/15.6 MWh battery energy storage system in Martinsville, Virginia. The system will respond to PJM market signals and reduce the city's peak demand by about 9 MW, while saving $1 million per year in transmission and capacity costs. The project is scheduled to be operational in the second half of 2021.

This municipal energy storage deployment saves money in the same way as behind-the-meter energy storage saves money for the enterprise – through demand-charge reduction.

PJM also provides compensation for resources that can adjust output or consumption in response to an automated dynamic "RegD" signal which is controlled by the company's GEMS energy management software.

[5] https://www.publicpower.org/periodical/article/danville-utilities-virginia-has-plans-106-mw-battery-storage-system

Wärtsilä claims the new system has a denser watt-hour per square-foot design that makes for a smaller footprint and a reduction in life cycle costs.

The water-cooled battery system includes safety features such as UL9540A tested lithium iron phosphate (LFP) batteries, a 60-minute enclosure fire rating, fire detection and a selection of fire suppression methods.

The battery facility will be constructed at no cost to the city. AEP OnSite Partners will construct, own and operate that $8.35 million facility at its expense, and for the use of the property, Martinsville will receive 10% of the savings until the cost of the capital and investment have been recovered.[6]

8. Pigeon Run Solar and Storage Facility

In February of this year, Pigeon Run Solar, LLC submitted an application to the SCC for a permit to construct, own, and operate an approximately 20 MW battery energy storage system to be located in Campbell County.

Pigeon Run Solar, LLC was formed for the purpose of developing, constructing, owning, and operating an approximately 60 MW photovoltaic solar project. The associated energy storage system that is the subject of SCC case PUR-2021-00035 will be an integral component of the solar facility. Pigeon Run Solar is requesting a Permit from the SCC for the BESS only and will be requesting a permit for the solar component through DEQ's Permit by Rule process.

DEQ approved the solar portion of the Pigeon Run project on August 4, 2021 while the SCC approved the battery energy storage system portion on August 14.

9. DOMINION RIDER TRG

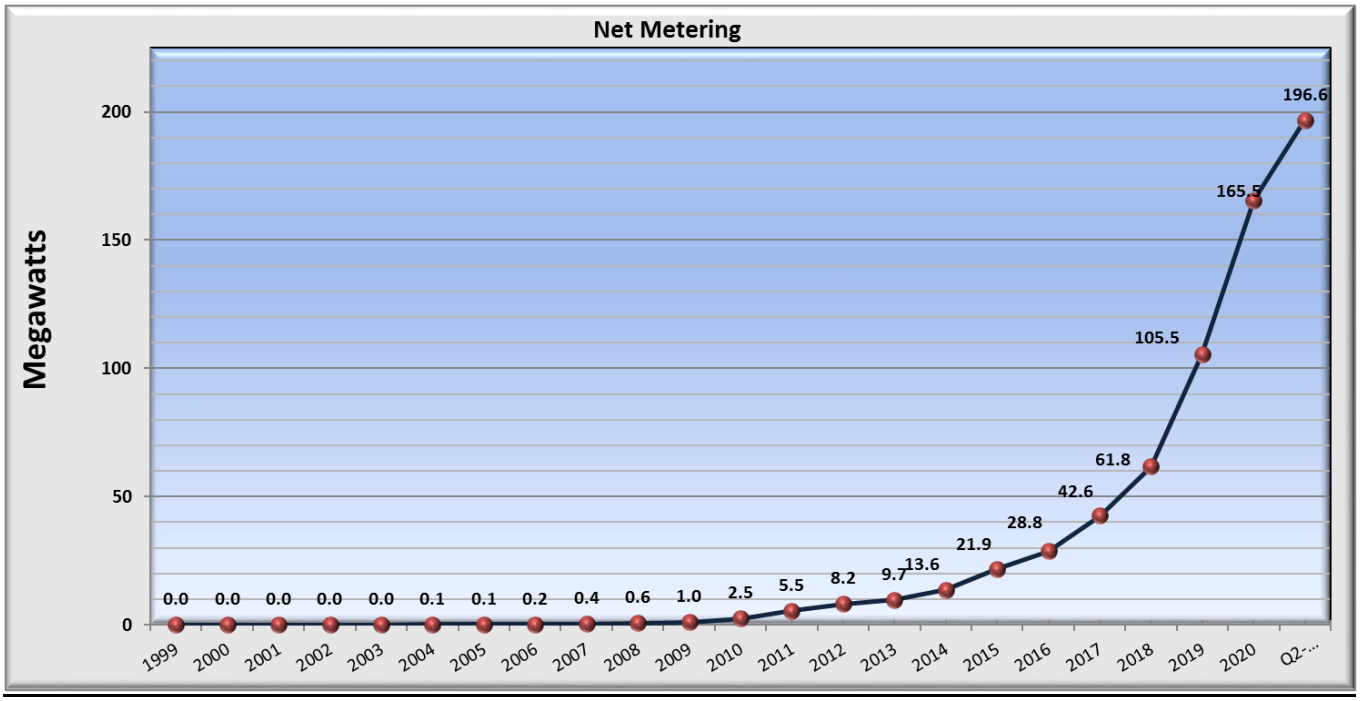
On July 2, 2020 in Case No. PUR-2019-00094, the SCC issued its Order Approving Tariff for Dominion's Rider TRG. Rider TRG is a tariff that provides Dominion's customers with an opportunity to purchase 100% renewable energy to meet all or a part of their electric needs. Customers taking service under Rider TRG will be served by a portfolio of Dominion's solar, falling water, and biomass driven resources, but will not be served by the Virginia City Hybrid Energy Center based on its reliance on coal to co fire biomass. Pursuant to statute, the Commission's approval of Rider TRG results in customers who seek to purchase 100% renewable supply under Section 56-577 A 5 of the Virginia Code no longer being allowed to obtain it from competitive service providers.

[6] https://www.pv-magazine.com/2020/10/15/wartsilas-9-mw-battery-storage-system-reduces-demand-peaks/

10. Net Metering

Net metering, which is implemented pursuant to Va. Code Section 56-594, involves utility purchases of excess power produced by distributed renewable generation facilities located on an eligible customer's premises and sized to meet, but not exceed, 150% of an electric customer's load.

Over the past year, the number of net metered solar installations increased significantly, growing from 13,783 installations totaling 132 MW in Q2 of 2020 to 20,980 installations totaling 197 MW megawatts in Q2 2021. The chart below illustrates the considerable growth in net metering facilities in recent years in Virginia.



11. Municipal Utility Net Metering

On October 22, 2020, in Case No. PUR-2019-00182, the SCC entered final guidelines for Virginia's municipal net metering program, designated as Guidelines for Municipal Excess Renewable Generation Pilot Program. The revised net metering program reflects 2019 legislation that established a pilot program in Dominion's and APCo's service territories. The pilot program allows municipal customer-generators that own or operate renewable energy facilities of two megawatts or less to use the excess generation to credit one or more public buildings or facilities to offset some or all of their electricity consumption. The legislation established a six-year term for the pilot program. The program commenced on December 1, 2020, and, to date, there have been no participants in the Municipal Excess Renewable

Generation Pilot Program .

12. Retail Customer Power Purchase Agreements

Retail customer power purchase agreements, which are commonly known as PPAs, allow electric ratepayers to have solar energy at their facility without the need to purchase and maintain the solar generating equipment. Instead, the customer signs a long-term contract to purchase the output from a system that a third-party developer installs, owns and maintains on the customer's premises. Typical PPAs may result in a net savings or net cost over what the customer would normally pay their utility over the life of the PPA agreement, depending on the pricing structure of the PPA and any changes in utility rates over the life of the agreement.

During its 2020 Session, the Virginia General Assembly revised the existing PPA pilot program by amending and reenacting, some provisions in Article 2 of the VCEA enacted in Chapters 1193 (HB 1526) and 1194 (SB 851) of the 2020 Virginia Acts of Assembly and codifying other provisions in Va. Code § 56-594.02 in Chapter 1187, 1188, 1189, 1193, 1194, and 1239 of the 2020 Virginia Acts of Assembly. The 2020 Amendments now require that the Pilot Program be conducted within the service territory of all three investor-owned electric utility in Virginia, now including Kentucky Utilities Company, doing business as Old Dominion Power Company, in addition to Virginia Electric and Power Company and Appalachian Power Company. The 2020 Amendments also:

a) increase the renewable generation capacities available for this program,

b) increase the size of the renewable generation facilities eligible for inclusion in the program, and

c) increase the overall caps of the program based upon the utilities' peak load forecasts.

The aggregated capacity of all third-party renewable generating facilities participating in the pilot program in Dominion territory was raised from 50MW to 500MW for Virginia jurisdictional customers and 500 megawatts for Virginia nonjurisdictional customers.

The aggregated capacity in Appalachian Power and Old Dominion Power is 40MW (originally 7W for APCo). However, because chapters 1193 and 1194 of the 2020 Acts of Assembly limits the aggregated capacity for APCo and Old Dominion to 6% of each Pilot Utility's adjusted Virginia peak load forecast for the previous year, not to exceed 40 MW, the PPA pilot capacity for Old Dominion is limited to well below 40 MW. Based on 6% of their estimated 2020 peak load of 212.706 MW, their aggregated pilot program capacity limit is 12.76 MW.

The minimum size PPA project in all utility territories is 50 kilowatts, unless the customer is a low-income utility customer, as defined in § 56-576 of the Code of Virginia, or is an entity with

tax-exempt status in accordance with § 501(c) of the Internal Revenue Code.

According to the SCC, the PPA Pilot Program has installed just under 24.5 MW of its aggregate capacity limit in Dominion's service territory (up from 8.99 MW last report period).

Under APCo's pilot, just under .55 MW has been installed (up front zero last report period.

The PPA pilot for Old Dominion Electric has seen no actual installations, however, just under 6.2 MW have been reserved[7]

13. Utility-Administered Community Solar

Dominion Community Solar

Senate Bill 1393 approved by the General Assembly in the 2017 legislative session requires Dominion and Appalachian Power to conduct what has been characterized as "community solar" pilot programs administered by the utilities in which their retail customers voluntarily subscribe to purchase output from a project owned by a third-party solar developer or acquired by the utility via asset purchase.

Since there are no active sites to subscribe into yet, Dominion is only accepting pre-enrollments. Once they have an operational site or sites, they will go back to pre-enrolled customers to see who is still interested and would like to subscribe. The first Dominion Energy Community Solar site is scheduled to become available to the public in the first quarter of 2022.

Appalachian Power Community Solar

Appalachian Power Company has never proposed a utility-administrated community solar program.

Cooperative Utilities Solar Subscription Programs

Senate Bill 1393 from 2017 General Assembly session also allowed for, but did not require, electric cooperatives to conduct similar customer subscription pilot programs and gives them flexibility in designing their program and voluntary companion rate schedules.

In April 2021 Old Dominion Electric Cooperative (ODEC) has issued a request for proposals from solar energy project developers for up to 400 MW of solar energy and related attributes. The RFP also invites, but does not require, proposals that include battery storage as part of the solar energy project.

[7] https://www.scc.virginia.gov/pages/Renewable-Energy-Pilot-Program

ODEC is working with the National Rural Electric Cooperative Association to evaluate options to ensure that low- and moderate-income (LMI) cooperative consumer-owners can take advantage of local solar power projects. NRECA's "ACCESS" project (Achieving Cooperative Community Equitable Solar Sources) is funded by the U.S. Department of Energy and is working to develop tools and resources to assist electric co-ops deploy solar projects to the benefit of LMI consumers.

In 2018, the SCC approved three-year community solar pilot programs for five distribution co-ops served by the Old Dominion Electric Cooperative ("ODEC"). These include A&N, Mecklenburg, Northern Neck, Rappahannock, and most recently Shenandoah Valley Electric cooperatives.

ODEC will resell the solar generation to its member distribution coops, who in turn sell the retail power in 50 kWh blocks to retail customers who are members of the distribution coops, allowing them to cover a portion or all of their electricity usage without the expense of owning and maintaining their own solar energy systems.

Central Virginia Electric Cooperative, who is not an ODEC member, is buying the output from two 5 MW solar facilities - the Palmer Solar Center and the Martin Solar Center - both in Fluvanna County - under a 25-year power purchase agreement with Coronal Energy.

Municipal Utility Solar Subscription Program

Harrisonburg Electric Commission (HEC) entered into a long-term power purchase agreement with Dominion, who will provide 1.4 MW of solar power generation to the HEC for their planned community solar program.

Dominion will own and operate a facility on land owned by the City of Harrisonburg. It will allow HEC to purchase power that will then be used to supply HEC members with power that is both locally produced and renewable.

14. Public School Excess Wind or Solar Renewable Generation Pilot Program

House Bill 1451, enacted as Chapter 415 of the 2018 General Assembly Session and codified as § 56-585.1:7 of the Code of Virginia, directed Dominion to establish a pilot program that provides the opportunity for any school in a public school division in the Commonwealth that generates electricity from a wind-powered or solar-powered renewable energy generation facility located at the school in amounts that exceed the amount of electricity consumed by the school, at the option of the school board, to either (i) credit such excess electricity to the metered accounts of one or more schools in the same public school division or (ii) receive payment for such excess electricity from Dominion at the contractually negotiated rate ("School Pilot Program"). In addition, by December 1, 2018, the SCC was required to adopt rules or

establish guidelines as may be necessary for the general administration of the School Pilot Program. On November 26, 2018, the SCC established the Guidelines for Public School Excess Wind or Solar Renewable Generation Pilot Program. The School Pilot Program commenced on January 1, 2019. As of December 1, 2020 and to date, no schools are participating in the School Pilot Program for public school excess wind or solar renewable generation.

15. Solar Generation Dedicated To Large Customers

Dominion Energy, Inc.'s (Dominion Energy) solar development in Virginia includes a mix of projects developed by both its regulated utility and its unregulated or merchant generation development business. As of October 20, 2021, Dominion Energy currently has 1,165 MW of solar projects in operation in Virginia, with another 2,129 MW of publicly announced solar projects under development, including solar capacity under long-term purchase contracts. A large portion of this solar development is being driven by demand from owners of large data centers or other institutional customers such as the Commonwealth of Virginia who have set specific renewable energy goals. These are often described as "ring-fenced" models in which costs associated with the solar generation are assigned to one or more specific customers that have entered into contracts with Dominion Energy regarding particular solar generation projects.

a. Energy and Renewable Attributes Dedicated to Specific Large Customers

One model utilized by Dominion Energy involves sales of energy and renewable attributes from a particular facility being split between different customers. An example of this approach is the 20 MW Remington project in Fauquier County, where Dominion Energy partnered with Microsoft and the Commonwealth of Virginia. Pursuant to this arrangement, the Commonwealth purchases the energy produced for use by state government facilities while Microsoft purchases the renewable attributes associated with the energy. Another model involves a single customer purchasing both the energy and renewable energy attributes from a particular facility. An example of this approach is the 18 MW solar energy facility at Naval Air Station Oceana in Virginia Beach, where Dominion Energy partnered with the Commonwealth of Virginia to purchase both the energy and the renewable attributes. In exchange for hosting the solar facility, the Navy will receive an alternative electrical feed, which will increase resiliency on the base.

b. Renewable Attributes Dedicated to Specific Large Customers

Yet another model utilized by Dominion Energy allows eligible customers to promote the development of new renewable energy facilities by enhancing their cost effectiveness for all

customers in exchange for the environmental attributes of up to 100% of the facility. Eligible non-residential customers may participate in this offering by subscribing to a voluntary companion rate schedule called Schedule RF.[8] Facebook has committed to subscribing to Schedule RF to meet its renewable energy goals connected to its proposed data center complex in Henrico County. Pursuant to this approach, Facebook purchases the renewable attributes from the facility while the energy is assigned to Dominion Energy's overall customer load. The SCC has approved construction of three solar facilities totaling 340 MW, which will provide environmental attributes to Facebook under Schedule RF. The three projects, Colonial Trail West (142 MW), Spring Grove 1 (98 MW) and Sadler (100 MW) which are all operational, in Surry and Greensville Counties. Additional projects dedicated to specific customers can be found in **Appendix B** to this Report.

16. UTILITY SOLAR

a. Rooftop Solar

Dominion Energy Virginia currently has 54 MW of distributed solar either under development or operational. This includes approximately 46 MW across 25 projects recently filed as part of the company's second annual clean energy filing with the Virginia SCC, one 1.5 MW project to serve the company's community solar program, and 6.4 MWs of distributed solar across 9 projects located on property owned by non-residential customers through its *Solar Partnership Program.*[9] The electricity from these 9 facilities is used to serve regulated electric customers in Dominion Energy's Virginia and North Carolina electric service territories. Under the *Solar Partnership Program*, Dominion Energy is authorized to construct and operate up to 30 MWs of company-owned solar facilities on leased rooftops or on the grounds of commercial businesses and public properties throughout their service area.

An additional 10 MW is operational across 22 solar distributed generation projects serving various localities across Virginia, primarily K-12 schools, under contract with Dominion Energy's BrightSuite subsidiary. These projects are part of the Commonwealth's PPA pilot program.

b. Large Scale Solar

Dominion Energy

Dominion Energy now has more than four gigawatts of solar generation in operation or under development in Virginia including early stage projects in advanced development. As part of its

[8] https://www.dominionenergy.com/library/domcom/media/home-and-small-business/rates-and-regulation/residential-business-rates-shared/virginia/schedule-rf.pdf?la=en&modified=20180601150242
[9] https://www.dominionenergy.com/large-business/renewable-energy-programs/solar-partnership-program

second annual clean energy filing with the VA SCC, Dominion Energy recently filed for approval of more than 1,000 MW of new solar projects. Including these newly filed solar projects, Dominion Energy currently has 65 publicly announced large-scale solar facilities totaling 3,241 MWs either operational or under development in Virginia.[10] Of that amount 1,159 MW across 26 projects are currently operational. See **Appendix B** to this report for a full listing of Dominion Energy's large-scale solar projects both operational and under development.

Old Dominion Electric Cooperative (ODEC)

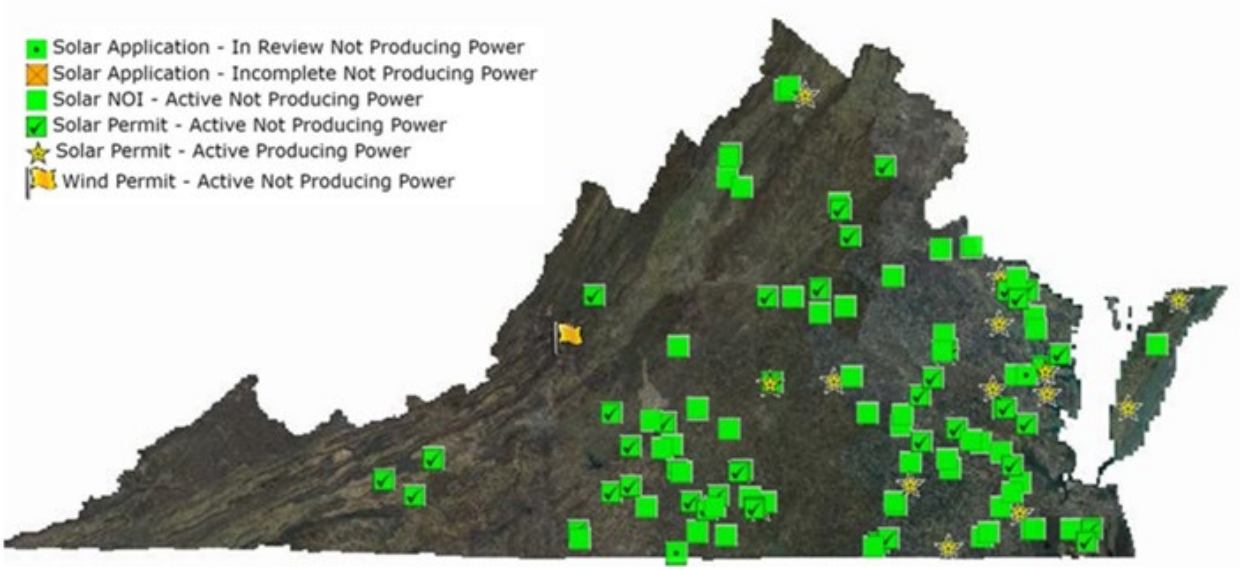
In addition to the power offtake from the 10 MW Clark County and 20 MW Cherrydale solar facilities owned by Dominion Generation, ODEC entered into a long-term power purchase agreement with Ørsted to purchase the output from the 75 MW Cabin Point Solar Facility in Sussex County, VA. The project will produce enough power for 15,000 homes and will generate approximately $5 Million for Sussex County Schools. The project is expected to be in commercial operations in the summer of 2022.

In 2019 ODEC and EDF Renewables North America entered a partnership to develop and build a 30 MW portfolio of distributed solar projects on 10 to 12 sites across ODEC member service territories in Virginia, Maryland, and Delaware. ODEC will purchase power from the projects at a fixed rate through a power purchase agreement, thus providing energy cost surety for its members. In 2020 ODEC *increased* its partnership with EDF Renewables to 15 projects totaling more than 60 MW.

17. Projects Permitted Under The Permit By Rule Process

Typically, electric generation construction projects must be approved by the SCC. In order to streamline the process for smaller scale renewable generation projects, Virginia Code § 56-580 D and Virginia Code § 10.1-1197.6 created the **Permit by Rule** ("PBR") process, which was developed and is overseen by the Virginia Department of Environmental Quality (DEQ). Section C.1 of this Annual Report discusses proposed changes to the PBR regulations.

[10] Includes 243 MW of solar as part of solar plus storage projects discussed in Section E.



DEQ GIS Solar and One Wind Power Permit by Rule Projects Map[11]

To date, 63 projects totaling 3074.3 MW have been issued (up from 2,261 MW last report); five permits totaling 322 MW are undergoing review, and there are active Notices of Intent to apply for permits for 56 additional projects totaling 2,437.2 MW.

A detailed list of solar projects that have submitted Notices of Intent to apply for a permit and who have been permitted is included in **Appendix D**.

18. Potential Projects in the PJM New Services Queue

Solar and other generators at transmission level voltages, including energy storage facilities, that request interconnection with PJM and want to participate in PJM's wholesale power markets, must execute an Interconnection Service Agreement. Generators at local distribution or sub-transmission voltage levels may also request to participate in PJM's wholesale power market. However, they may not be under Federal Energy Regulatory Commission jurisdiction regarding the nature of their interconnection request. If not jurisdictional, each such generator must sign a Wholesale Market Participation Agreement instead of an Interconnection Service Agreement upon completion of all required reliability studies. A Wholesale Market Participation Agreement defines the terms and conditions under which PJM wholesale power market participation will be conducted. It also contains a milestone for the generator to execute, separately, an interconnection agreement with the local electric distribution company in accordance with the respective state's own established process. Section C.3 of this report describes amendments to the SCC regulations governing solar projects interconnecting at the

[11] https://www.deq.virginia.gov/permits-regulations/permits/renewable-energy/renewable-energy-project-status

distribution level.

As of this report, there are 486 active projects in the PJM New Services Queue (PJM Queue) totaling 45,186 MW. Of these, 3,1167 MW are in the engineering and procurement stage and 1,767 MW are under construction. The remainder are actively undergoing the PJM study processes. A list of active solar projects in the PJM Queue is set forth in **Appendix E** of this Report.

19. Southwest Virginia Solar and Energy Storage Activities

Southwest Virginia has until recently not seen much in the way of solar activity. This has changed significantly over the past year. The following are some highlights on solar development activities in the coalfield region of Virginia.

In October 2020, Appalachian Power and Dominion announced a public-private partnership with InvestSWVA, a public-private business attraction and marketing campaign launched under the umbrella of the Virginia Tobacco Region Revitalization Commission, to advance energy storage technology and attract industry prospects to the region. The partnership also includes the Appalachian School of Law, Mountain Empire Community College and the Southwest Virginia Energy Research and Development Authority.

Coalfield Strategies, LLC, an economic development firm helping bring new business investment to Southwest Virginia, will coordinate on-the-ground efforts with both utilities. The firm leads InvestSWVA in addition to project development efforts for the Southwest Virginia Energy Research and Development Authority. Coalfield Strategies will use recently completed market research and key site data collected from its portfolio of energy projects to define why the region is attractive to the energy storage industry.

In April 2021, the GO Virginia State Board approved a $486,366 *Per Capita* grant application for Appalachian Voices' proposed "Energy Storage and Electrification Manufacturing Jobs" project. The project will create jobs in GO Virginia Region One in the energy storage and electrification manufacturing field while attracting investments and expanding the local tax base.

In 2019, Appalachian Voices received a GO Virginia Enhanced Capacity Building grant to support the *Solar Playbook* project that examined how solar-related manufacturing and utility-scale solar development could contribute to job creation in Region One. This project is a direct continuation of that effort.

This project will catalyze a vibrant energy storage and electrification economy in GO Virginia Region One through an accelerated project approach that provides data-based, targeted technical assistance to four existing manufacturers in the region who have already taken steps

to diversify their businesses into energy storage and electrification markets. Notably, each of the four targeted companies has a strong history of serving the coal industry and are now seeking to expand into next generation energy markets. Concurrently, the project seeks to attract new national and global companies to Southwest Virginia and expand tax base, capital investment, and sustainable job creation.

Appalachian Voices will serve the Virginia Coalfield Economic Development Authority (VCEDA) footprint consisting of seven counties and one city in the LENOWISCO and Cumberland Plateau Planning District Commissions (CPPDC). VCEDA, Ascent Virginia, and Cumberland Plateau Planning District Commission are actively participating in the project and have committed resources to local companies. The four engaged companies receiving direct services from the project are located within the CPPDC; these companies include AMR PEMCO, Lawrence Brothers Inc., West River Conveyors & Machinery Co., and Simmons Equipment Company.

Appalachian Voices has also engaged support from the Virginia Department Energy (formerly Mines, Minerals and Energy until October 1, 2021) and Tobacco Region Revitalization Commission. There is also support from financiers including Virginia Community Capital and The Pearl Fund, as well as an international battery company, Blue Solutions.

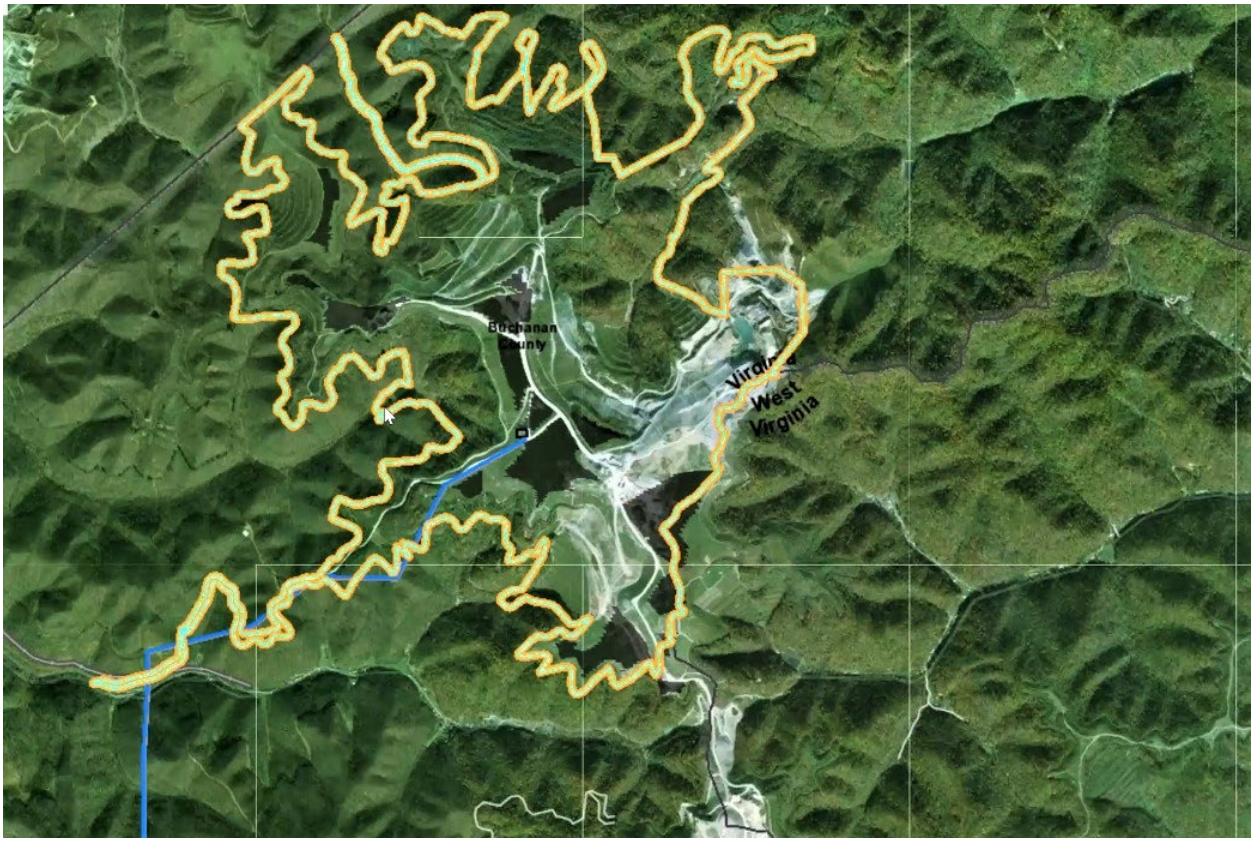
The project team spent two years developing the concept and engaged in discussions with global energy storage, utility and battery company executives into the possibility of creating an energy storage and electrification production cluster in Southwest Virginia.

The Virginia Initiative for Growth and Opportunity (GO Virginia) is a state-funded, bipartisan, business-led economic development initiative. This project was funded in part by GO Virginia, a initiative that strengthens and diversifies Virginia's economy and fosters the creation of higher wage jobs in strategic industries. [12]

In April 2021, Delegate James "Will" Morefield, R-Tazewell, and Senator Travis Hackworth, R-38th District, announced that Buchanan County will soon host the largest solar farm in the Virginia coalfield region.

The facility will be located near the town of Hurley, Va. close to the Kentucky and West Virginia border on a reclaimed coal mining surface operation. The planned site will utilize approximately 700 acres and produce a minimum of 60 megawatts with the capability of expanding up to 75 megawatts. The company, Edelen Renewables, has a lease option of 1,600 acres of usable property for expansion.

[12] https://appvoices.org/2021/04/07/major-grant-awarded-for-appalachian-voices-jobs-economic-project-in-southwest-virginia/



Based in Lexington, Kentucky, Edelen Renewables has partnered with Savion, LLC., a Kansas City-based solar developer involved in 156 projects in 28 states, including five in Virginia.

The solar farm will create 250 jobs during construction, provide a long-term tax revenue stream for Buchanan County, and provide the coalfields with an attractive renewable energy asset that many high-tech companies such as data centers companies are looking for.

The Buchanan County Board of Supervisors unanimously adopted a resolution to support an application from Buchanan County to apply for federal Abandoned Mine Land Pilot (AML) funds to help assist the project on behalf of Savion, LLC and Edelen Renewables, national leaders in renewable energy development.

Construction is slated to begin in 2023.[13]

In May, 2021, The Nature Conservancy (TNC) announced a collaboration with Charlottesville-based Sun Tribe, and Washington, D.C.-based Sol Systems for the development of utility-scale solar projects in the Central Appalachian coalfields.

[13] https://www.bdtonline.com/news/large-solar-farm-set-to-bring-250-jobs-to-local-virginia-county/article_dc63bdaa-9cbe-11eb-9fbc-eb0843f9ec8c.html

The solar energy systems will be built on former coal mines located within the Cumberland Forest Project—nearly 253,000 acres of land in Southwest Virginia, Eastern Tennessee, and Eastern Kentucky managed by TNC and owned by its Cumberland Forest, LP impact investment fund.

Sun Tribe and Sol Systems will develop the projects with the aim of continuing TNC's goal of supporting local economies through conservation, investment and engagement.

TNC's aim is to protect and restore native forests, but there are several thousand acres of non-forested, former surface coal mines on the property that can potentially support new solar energy projects, create positive economic outcomes for local people, and provide clean energy from previously disturbed sites in a way that minimizes impact to the environment. The initial focus area for the collaboration with Sun Tribe and Sol Systems centers on Wise County.

In early 2020, with assistance from the Virginia Department of Energy, TNC identified non-forested former mined lands on the Cumberland Forest property that are in proximity to existing utility lines and infrastructure, making them candidates for solar development.

Sun Tribe was selected to be the Cumberland Forest LP's first project developer, with Sol Systems selected to finance, own, and operate the facilities once development is complete.

Over the next two to three years, Sun Tribe will conduct additional field studies, pursue utility interconnection agreements, and submit local and state level permit applications on sites located within the Cumberland Forest property.

During this initial development period, Sun Tribe will also work with TNC, localities, the Southwest Virginia Solar Work Group, and other interested stakeholders to develop a Community and Environmental Benefits Plan that will target specific investments in local workforce development, economic development, and environmental stewardship. Current projections assume projects will move towards construction and operation in 2023-2024.[14]

In September 2021, The Nature Conservancy (TNC) and Dominion announced an innovative collaboration to develop one of the first utility-scale solar projects on former surface mines in Southwest Virginia.
The Highlands Solar project will be located on approximately 1,200 acres of the former Red Onion surface mine and surrounding properties in Wise and Dickenson Counties. The project will generate approximately 50 megawatts of solar energy, enough to power 12,500 homes at peak output, as well as bring additional benefits to the area, such as an

[14] https://www.nature.org/en-us/newsroom/virginia-central-appalachia-solar-development/

increase in local tax revenues, the ability to provide additional funding through Solar Siting Agreements, and the creation of clean energy jobs.

The Highlands Solar project is planned for development on land owned by the Cumberland Forest Project and surrounding properties. Managed by TNC and owned by its Cumberland Forest, LP impact investment fund, the Cumberland Forest Project encompasses nearly 253,000 acres of land in Southwest Virginia, Eastern Tennessee, and Eastern Kentucky.

While the vast majority of the property is working forestland, there are several thousand acres of non-forested, former surface coal mines that can support solar energy and other economic development with minimal impacts to the environment.

Dominion will jointly develop the project with ANTARES Group, which will serve as the owner's engineer. The company plans to begin construction in 2024 or 2025, subject to state and local permitting and review and approval by the SCC.[15]

On September 16, 2021 Appalachian Voices was awarded $1.5M by the Appalachian Regional Commission (ARC) to catalyze commercial and institutional solar projects for coal-impacted communities throughout Central Appalachia. This award is part of a $46.4 million package supporting 57 projects across 184 coal-impacted counties through ARC's POWER (Partnerships for Opportunity and Workforce and Economic Revitalization) Initiative. POWER targets federal resources to communities affected by job losses in coal mining, coal power plant operations and coal-related supply chain industries. Additional support for the **Appalachian Solar Finance Fund** (SFF) is provided by the Appalachian Investment Ecosystem Initiative, the Claude Worthington Benedum Foundation and other pending sources. The SFF is part of a $46.4 million award package, and will catalyze commercial and institutional solar projects for coal-impacted communities throughout Central Appalachia.
The Appalachian SFF promotes economic diversification and creates positive economic impacts by deploying targeted financial tools to jumpstart emerging local solar markets and unlock new commercial and institutional solar energy projects that face unique barriers due to region-specific challenges. The SFF will use this ARC POWER award to deploy select subgrant awards for solar projects on nonprofit and public buildings.

The SFF also will develop investment and credit enhancement strategies and will facilitate competitive contracts for technical assistance for solar installations on commercial enterprises. The resulting solar projects will produce a powerful convergence of employment opportunities, business creation, new investments and wealth retention in Central Appalachian communities directly impacted by the decline in the coal economy.

[15] https://www.nature.org/en-us/newsroom/va-tnc-dominion-solar-power-innovation/

In 2019, Appalachian Voices received a POWER Technical Assistance grant to support the Solar Workgroup of Southwest Virginia's efforts and create a pathway to bring its models around solar development to scale; the Appalachian Solar Finance Fund is the result of that process.[16]

In October 2021, the Wise and Lee County schools systems entered into PPA agreements with Secure Futures to install solar power systems at nine campuses across both counties. All solar projects will also include, at no additional cost, services to support workforce development and to add lessons on clean energy to classroom curricula.
In Wise County, solar will be installed at four elementary and middle school campuses under a 20 year PPA and are expected to save the school division $7.5 million over the lifetime of the solar equipment by helping reduce demand for power from the local electric utility. In Lee County, five elementary, middle and high schools will host solar power systems under a 25-year PPA, expected to save $4 million in avoided energy costs. Three campuses of Lee County Schools will also receive roof restoration services under the school division's solar power purchase agreement.

Wise County represents the first "ambassador" project in a campaign known as *Securing Solar* for Southwest Virginia founded to install solar power, create well-paying clean energy jobs and establish a local solar power industry in the coalfield region of Southwest Virginia. The initiative, a partnership between Secure Futures and the Solar Workgroup of Southwest Virginia, has committed to install five solar ambassador projects over a two-year period with a total generating capacity of ten megawatts.

The *Securing Solar* campaign supports economic development for the coalfield region that is sustainable both financially and environmentally through a unique approach to seeding a solar industry based locally in Southwest Virginia.

First, the campaign offers job training to help local workers qualify as certified solar installers through a partnership between Mountain Empire Community College and local vocational technology and high schools. But, unlike other workforce development efforts that train workers but do not offer them any immediate employment, Securing Solar will graduate newly trained solar installers directly into work on live projects in the local area (an approach called "demand-pull").

Second, the campaign has founded a locally based solar installation company, Lonesome Pine Solar, to employ the newly trained workers on projects developed by the Securing Solar campaign. Starting with Wise and Lee County Schools, the start-up company will continue to employ workers to complete future projects from Securing Solar. Once the campaign is completed, Lonesome Pine will remain to provide on-site solar power to commercial and residential solar customers in Southwest Virginia.

[16] https://appvoices.org/2021/09/16/appalachian-voices-receives-1-5m-from-appalachian-regional-commissions-power-initiative/

Recent changes to state law covering utility territories of Appalachian Power and Old Dominion Power have made distributed solar projects more viable in Southwest Virginia. Bills passed by the Virginia General Assembly and sponsored by Sen. John Edwards of Roanoke, Del. Chris Hurst of Blacksburg and Del. Terry Kilgore of Gate City lifted restrictions on net metering and made clear that public entities such as schools, town halls, libraries and landfills are allowed to finance solar projects through power purchase agreements.[17]

G. ASSESSMENT OF SIGNIFICANT ISSUES REGARDING ENERGY STORAGE

The October 1, 2021 Energy Storage Task Force Report, as discussed in Section C.2 of this Report, set forth both **Consensus Recommendations** and **Recommendations Lacking Consensus.** Significant issues regarding the siting and spacing requirements addressed as part of the Recommendations Lacking Consensus are discussed in more detail below.

Dominion Energy Perspective on Siting and Spacing Requirement

Battery energy storage projects are a relatively new grid technology and no definitive federal or state codes have been established to ensure safe operation of these systems, particularly with respect to fire safety. In the absence of specific codes, early adopters of the technology have implemented their own practices for siting and spacing in collaboration with local permitting authorities. While batteries have proven to be generally safe, there have been several cases of battery storage systems that have experienced thermal runaway resulting in fire and in some cases explosion. Safety for battery storage systems continues to improve and mitigating fire risk will continue to be a priority for lithium-ion battery storage systems.

Dominion Energy has adopted a safety-based approach to siting and spacing for its projects to minimize the potential safety risk for battery projects. In both the 2020 and 2021 Dominion RFP the company required projects to comply with the below standards with respect to site design:

a. Containers/structures or groups of containers/structures with ≤6 MWh of batteries shall have 25 feet spacing between other containers / structures or other groups of containers / structures containing batteries. 25 feet of separation shall also be provided to other site buildings/structures or equipment.

b. Containers/structures with > 6 MWh of batteries shall have a 50-foot spacing between containers/structures or any other site building/structure/equipment and shall have individual rooms limited to ≤6 MWh of batteries with firewalls (4hr rated masonry block) between all battery rooms. 50 feet of spacing shall also be provided to other site buildings / equipment.

c. All containers/structures containing batteries shall be at least 100 feet from the property line.

[17] https://www.wrdw.com/prnewswire/2021/10/19/two-school-divisions-southwest-virginia-go-solar/

Dominion Energy provided a Battery Energy Storage System (BESS) Spacing and Firewall Supplement document to bidders participating in the 2021 RFP process to clearly document our spatial separation expectations by providing illustrative scenarios on how enclosure / container groupings can be arranged on a project site. The document has been well received by the development community since its release in June 2021. In response to developer requests for projects to be able to utilize tighter storage project footprints, Dominion Energy is now also allowing the use of firewalls on BESS projects. The BESS Spacing and Firewall Supplement document contains detailed firewall specifications and spatial separation illustrative scenarios for land constrained BESS projects to use, such that safety is not compromised. Safety is Dominion Energy's highest priority, and the use of these spacing and firewall requirements will position BESS projects to safely provide reliability benefits to the power grid and our system customers in Virginia.

The National Fire Protection Association (NFPA) sets standards for mitigating the hazards associated with energy storage systems. NFPA 855 calls for individual energy storage systems (ESS) units (outdoor applications) to be separated from each other by a minimum of 10 feet, but that guidance is dependent on large-scale fire testing that is compliant with section 4.1.5 of NFPA 855. There is currently very limited data available on large scale fire testing for lithium-ion batteries that is compliant with section 4.1.5 of NFPA 855. Dominion Energy's 25-foot spatial separation requirement matches the same spatial separation criteria successfully utilized across Dominion's power generation fleet for medium sized power generation transformer installations and aversions of oil fire contagion from one transformer to another. Given the lack of large-scale fire testing available and significant concerns regarding automated fire suppression systems to effectively perform while averting explosion risk, Dominion Energy has chosen to utilize the spacing requirements noted above and is committed to evaluating these criteria going forward as industry conditions change and large-scale fire testing results become more prevalent and in alignment with NFPA 855 requirements.

Energy Storage Developer Perspective on Siting and Spacing Requirements

Battery-based energy storage was invented in 1790 by Alessandro Volta[18], and was used as a grid technology to smooth peaks and troughs in load as early as 1893[19]. During both the SCC energy storage rulemaking proceeding and the SCC Energy Storage Task Force discussions, third party energy storage developers made it clear that they viewed a 25 foot spacing requirement in Dominion's RFPs for energy storage as both excessive and unreasonable. Both Dominion's 2020 RFP for energy storage facilities and its 2021 RFP for energy storage facilities requires 25

[18] URL: https://en.wikipedia.org/wiki/History_of_the_battery. Accessed November 5, 2021.
[19] "After a 100-year Hiatus, Batteries are Helping the Grid Again", 2016. URL: https://blog.fluenceenergy.com/after-a-100-year-hiatus-batteries-are-helping-the-grid-again.

feet in between every 6MWh of energy storage capacity. This requires the site to be much more spread out than it otherwise would. This could have a range of consequences for both developers and ratepayers. Based on some engineering and financial analysis conducted by a third party developer interested in participating in the RFP, here are the consequences on an actual energy storage project under consideration:

- for a project that has originally been sized at 200MW/800MWh, this spacing requirement would force the developer to downsize the project to about 50MW/200MWh.
- There is no more land around the site to allow the developer to expand its footprint. If the developer were to actually downsize the project to this level, the developer ran a cost analysis and determined that this **project would be over 50% more expensive** on a $/MWh basis to construct.
- There are both large fixed costs (i.e. interconnection costs) and well as certain costs that do not scale down if you use a really large site, such as site preparation, cabling, fencing, and undergrounds, that contribute to this dynamic.

Developer concerns about the consequences of a 25 foot spacing requirement on all projects are that this design requirement:

1. **Will eliminate many projects from participating in the RFPs** –Projects that are already advanced in the queue cannot downsize their interconnection capacity, so they will choose not to participate unless they can find more land, which many will not be able to. **This will reduce competition in the RFPs.**
2. **Will result in increased costs, and higher bids, from the projects that do participate**, for some of the reasons outlined in the example above.
3. **Projects that are able to find enough land are typically going to be located in the most rural** areas that are far away from load centers, so the benefits of this development will exclude many more urban and denser areas, like Northern Virginia, making it harder to achieve the environmental justice goals of the VCEA.

What is frustrating for third party energy storage developers is that Dominion is creating a standard that is not being implemented anywhere else in the country.

- For storage projects in some very dense areas like suburban Boston and even in New York City, many other utilities, as well as fire departments, have gotten comfortable with more typical industry-standard spacing. They have focused their safety efforts on factors such as the quality of the batteries, fire suppression systems, and emergency services response protocols.

It is unclear to third party developers why, at the very least, such developers cannot be allowed to space containers however they want for the 35% of projects that will contract under a Power Purchase Agreement, instead of being owned by Dominion under the Asset Purchase portion of the RFPs, where developers are taking all of the operational risk anyways. But Dominion wants the 25 foot standard applied to all projects, even though third party developers have not been subjected to this requirement anywhere else in the country, including Virginia: Appalachian Power has not required it, nor have electric cooperatives.

H. ASSESSMENT OF PROGRESS REGARDING ENERGY STORAGE AS COMPARED TO OTHER STATES

To help assess the Commonwealth's significant progress regarding storage as compared to other states, this Annual Report provides a summary below of states that are generally considered "forward leaning" on energy storage.

Arizona

In Arizona, solar-plus-storage resources are competing head to head against traditional resources, and winning contracts for providing power to major utilities in the state. For example, the Salt River Project utility (SRP) in 2019 awarded a contract for power delivered from a 250 MW solar + 1 GWh battery, notable in part because it was selected from an all-source request for proposals (RFP) and deemed the most cost effective replacement for retiring coal generation.[20] In its 2020 IRP, Arizona Public Service plans to invest in 2,500 MW of storage by 2030 and up to 10,550 by 2035.[21] In January of 2020, APS committed to 100% carbon-free energy by 2050.[22]

California

California set the first state energy storage procurement targets in 2010 with AB 2514, which stipulated the independently-owned utilities had to procure 1325 MW (collectively) by 2020. The utilities are all on track to meet or exceed that goal. California also set up SGIP (Self-Generation Incentive Program), which provided incentives for residential and commercial customers to own energy storage, among other distributed generation

[20] "SRP to Cut Emissions Through Major Solar+Battery Energy Purchase." URL: https://media.srpnet.com/srp-to-cut-emissions-through-major-solar--battery-energy-purchase/
[21] "Arizona utility APS to rely on battery storage, solar to enable 2031 exit from coal generation." URL: https://ieefa.org/arizona-utility-aps-to-rely-on-battery-storage-solar-to-enable-2031-exit-from-coal-generation/
[22] Spector, Julian. "Arizona Utility APS Commits to Carbon-Free Power by 2050." URL: https://www.greentechmedia.com/articles/read/arizona-public-service-carbon-free-power-2050

resources.[23] The California Independent System Operator (CAISO) was also one of the first wholesale markets in the US to implement specific reforms for energy storage and distributed energy resources, allowing storage projects to provide additional benefit to the grid and generate supplemental revenues in the market, while also enabling utilities to exceed the storage requirements of AB-2514. Today, the CAISOis deliberating how to regulate storage as a transmission asset.[24]

In 2021, CAISO is carrying out a stakeholder process on "Energy Storage Enhancements"[25] which:

> … aims to enhance the optimization, dispatch, and settlement of energy storage and other similarly-situated resources, through developing bid enhancements to help resources accurately represent their marginal costs in the real-time market; ensure the ISO has sufficient state-of-charge to cover critical hours; and explore modifications to the ISO's exceptional dispatch and bid cost recovery mechanisms.[26]

This initiative aims to remove market inefficiencies for energy storage to encourage its further development.

Connecticut

This year, Connecticut set a storage goal of installing 1,000 MW by 2030. In service of that goal, the Public Utilities Regulatory Authority issued a regulation that incentivizes behind-the-meter storage for all utility customers (including both upfront financial incentives and performance-based incentives for operating to reduce peak load in critical periods).[27]

Hawaii

Rapidly moving toward 100% renewable energy on multiple islanded grids, Hawaii has led the way in storage and solar-plus-storage procurements that are designed to help replace baseload as well as flexible grid resources. In 2015 Hawaii became the first state to set a

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[23] "California looks to next steps as utilities near energy storage targets." URL: https://www.utilitydive.com/news/california-looks-to-next-steps-as-utilities-near-energy-storage-targets/525441/#:~:text=California%20established%20the%20first%20energy,%2Downed%20utilities%20(IOUs).

[24] "California ISO's long road ahead to turn storage into a transmission asset." URL: https://www.utilitydive.com/news/california-isos-long-road-ahead-to-turn-storage-into-a-transmission-asset/526552/

[25] Energy Market Enhancements Issue Paper. April 2021. URL: http://www.caiso.com/InitiativeDocuments/IssuePaper-EnergyStorageEnhancements.pdf

[26] Stakeholder Process for Energy Storage Enhancements. URL: https://stakeholdercenter.caiso.com/StakeholderInitiatives/Energy-storage-enhancements

[27] PURA Establishes Statewide Electric Storage Program. URL: https://portal.ct.gov/PURA/Press-Releases/2021/PURA-Establishes-Statewide-Electric-Storage-Program

100% renewable electricity target, with the goal to procure all electricity from clean sources by 2045.[28] In 2017, the Hawaii Public Utilities Commission approved a joint plan from a group of the state island utilities (Hawaiian Electric Companies) that would accelerate that transition to 2040.[29] In May 2020, Hawaiian Electric announced 460 MW of solar procurements and 3 GWh of storage procurements.[30]

Electrically isolated from the rest of the Hawaiian Islands, Kauai has pioneered solar and battery-based energy storage and already has multiple solar-plus-storage projects operating on the island.

Maine

In June of 2021, Maine set an energy storage installed capacity target of 300 MW by the end of 2025 and 400 MW by the end of 2030. Coupled with this target the state public utilities commission will examine options for rate design that would further enable storage development, such as time-of-use rates and peak reduction incentives.[31]

Maryland

In April of 2020 Maryland passed HB 650, which enacts an energy storage pilot program under which Maryland's four investor-owned utilities must establish two energy storage pilot projects by 2022. An interesting aspect of the Maryland program is the storage ownership structures it stipulates. Utilities can select two of four structures (utility-owned, utility and third party-owned, third party-owned, and a virtual power plant model). Utilities must provide annual reports including technical and financial data to the state legislature on the projects beginning in 2023. One of the objectives of the pilots is to answer the question of how utilities in a deregulated electricity market can own energy storage assets, which can act as both generation and load, and provide services like a transmission or distribution asset.[32]

Massachusetts

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[28] "PRESS RELEASE: GOVERNOR IGE SIGNS BILL SETTING 100 PERCENT RENEWABLE ENERGY GOAL IN POWER SECTOR"URL: https://governor.hawaii.gov/newsroom/press-release-governor-ige-signs-bill-setting-100-percent-renewable-energy-goal-in-power-sector/

[29] Greentech Media. URL: https://www.greentechmedia.com/articles/read/hawaiian-electric-100-renewable-energy-plan-green-light#gs.q7emsn

[30] Greentech Media. URL: https://www.greentechmedia.com/articles/read/hawaiian-electric-picks-460mw-of-solar-nearly-3gwh-of-storage-to-replace-power-plants

[31] Maine Becomes 9th State to Adopt Energy Storage Deployment Target. URL: https://www.energy-storage.news/maine-becomes-9th-us-state-to-adopt-energy-storage-deployment-target/

[32] "Maryland passes energy storage pilot program to determine future regulatory framework." URL: https://www.utilitydive.com/news/maryland-passes-energy-storage-pilot-program-to-determine-future-regulatory/551769/

Massachusetts has enacted two programs in the past five years that have jump started the energy storage and solar industries in the state. The first is the Solar Massachusetts Renewable Target or "SMART" program, which requires each of the investor-owned utilities to procure solar energy in established multi-MW blocks. Subsequent blocks decline in guaranteed tariff rate. Solar installations larger than 500 kW are required to have an energy storage component to help shift energy towards peak periods.[33]

In addition, Massachusetts has instituted a resource-neutral Clean Peak Standard that requires all retail electricity providers in the state to purchase a minimum percentage of their annual energy sales from qualifying resources that produce "Clean Peak Energy Certificates" or CPECs. The program incentivizes resources that produce energy during seasonal peak demand periods by adding multipliers to the CPECs they produce.[34]

Nevada

In Nevada, like Arizona, solar-plus-storage resources are competing and winning contracts for supplying power to the state utilities. Nevada has instituted a storage target of 1 GW by 2030.[35] In addition to bulk energy storage, Nevada's utility NV Energy has instituted incentives at the residential and commercial levels for private investment in energy storage.[36]

New York

In 2019 New York State announced ambitious targets of 6,000 MW of solar by 2025, 1,500MW of energy storage by 2025 and 3,000 MW of energy storage by 2030 (increasing an earlier target from 2018 of 1500 MW by 2025).[37]

I. UTILITY RFPs

On May 1, 2020 Dominion Energy Virginia issued a Request for Proposals (RFP) for up to 1,000 MW of solar and onshore wind generation and up to 250 MW of energy storage in the Commonwealth.

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[33] MA DOER SMART Program. URL: https://www.mass.gov/info-details/solar-massachusetts-renewable-target-smart-program

[34] Kirkland and Ellis. URL: https://www.kirkland.com/publications/blog-post/2020/04/massachusetts-clean-peak-energy-standard

[35] "Nevada becomes sixth US state to adopt energy storage target." 18 March 2020. URL: https://www.energy-storage.news/news/nevada-becomes-us-sixth-state-to-adopt-energy-storage-target

[36] NV Energy. Energy Storage Incentives. URL: https://www.nvenergy.com/cleanenergy/energy-storage

[37] https://www.nyserda.ny.gov/All-Programs/Programs/Energy-Storage

The RFP solicited bids for new solar or onshore wind power generation facilities or mechanically complete solar facilities under both asset purchase agreements and power purchase agreements.

Dominion's long-term Virginia IRP calls for the development and procurement of approximately 16,000 megawatts in the state over the next fifteen years.

Dominion was tasked through the VCEA to procure 2,700 megawatts of energy storage by the end of 2035 – the most aggressive goal in the country to date. To this end, Dominion is also seeking bids for new energy storage projects that may be paired with new solar or onshore wind facilities or that will be connected to the power grid as a stand-alone facility. For all energy storage projects, Dominion is requiring a minimum of four-hour duration Lithium-ion battery energy storage system. Each Proposal must represent generation at a single site and cannot reflect an aggregate of multiple facilities at separate sites to meet the minimum size threshold. All Proposals are further expected to comply with all safety requirements for battery storage facilities including Dominion's spacing and firewall standards for battery energy storage systems.

All new solar and storage facilities must be at least 5 MW, physically located in Virginia, and operational by the end of 2023.

Notices of Intent to Bid and Confidentiality Agreements were due by May 18, 2020. PPA bids for the renewable RFP were due on March 1, 2021. The Company concluded the RFP process in Q2 2021.

The Company issued a further RFP targeted toward small-scale solar projects on October 9, 2020. The RFP is soliciting bids for development assets for new distributed solar generation facilities or mechanically complete solar facilities under asset purchase agreements. The RFP is also seeking power purchase agreement bids where the Company will enter into an agreement for the energy, capacity, ancillary services, and environmental attributes including Renewable Energy Certificates (RECs) from the facility. The new facilities must be no larger than three megawatts (MW)(ac) in capacity, located in the Dominion Energy Virginia service area and commercially operational by the end of 2022 to be considered.

Notices of Intent to Bid and Confidentiality Agreements were due by October 30, 2020 with final Asset Purchase proposals due January 8, 2021 and Power Purchase proposals due March 1, 2021.

Appalachian Power

Appalachian Power Company is in negotiations with several developers for projects to either acquire the assets after construction, or as power offtaker through long-term PPA's

Two PPA projects have already been announced, including the 20MW Energix Leatherwood project in Leatherwood, VA and the 15 MW Depot Solar project located in Campbell County

APCO is also pursuing wind and solar generation resources via three separate requests for proposals (RFPs) issued in 2021.

In February, APCo issued an RFP seeking 300 MW of solar and wind energy, with the option to include one or more energy storage systems, via a Purchase and Sale Agreement (PSA) for purchase of 100% equity interest in a project company.

All proposed solar projects have to be interconnected to PJM and be physically located in Virginia. Wind power projects also need to be interconnected to PJM, but while APCo prefers Wind Projects to be located in the Commonwealth, Wind Projects located outside the Commonwealth were also eligible to participate in this RFP.

The PSA RFP sought projects that could achieve an expected Commercial Operation Date (COD) by 12/15/2023; however, APCo indicated it would consider proposals with an alternate target COD of December 15, 2024.

On May 19, 2021, APCo issued two additional RFPs to help the company comply with their requirements under the VCEA.

In one of the RFPs, APCo sought bids for up to 100 MW of solar and/or wind resources via one or more long-term power purchase agreements (PPAs). Agreements must be for 30 years and include an option for the company to purchase the project at the end of the term.

Under this RFP, projects must be located in Virginia and provide power directly to the company's distribution system or be interconnected to PJM. The minimum project size requested was 5 MWs for solar and 50 MW for wind, and all projects must be operational by December 31, 2024.

The second RFP issued on May 19 was for the acquisition of renewable energy certificates (RECs).

Under the REC RFP, all RECs purchased must be produced from solar or wind facilities located in Virginia and operational by December 31, 2024, and REC agreements between Appalachian Power and the bidder must be for 30 years.[38]

[38] https://www.appalachianpower.com/business/b2b/energy-rfps/

J. Renewable Energy on Brownfields

A "brownfield" is any real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. This includes but is not limited to former industrial sites, landfills, and previously mined lands. Virginia Code § 10.1-1231. Brownfield Restoration and Land Renewal Policy and Programs states "It shall be the policy of the Commonwealth to encourage remediation and restoration of brownfields by removing barriers and providing incentives and assistance whenever possible." The Department of Environmental Quality (DEQ) Brownfields Program uses this as the foundation for the efforts that have led to billions of dollars on investment on brownfield sites across the Commonwealth.

The Virginia Clean Economy Act along with outreach efforts by DEQ and Virginia Energy has led to significant increases in interest in the deployment of renewable energy projects on brownfields across the Commonwealth. Despite staffing limitations DEQ and Virginia Energy have been stepping up to help meet the demand for assistance in this area.

Brownfields Outreach – Renewable Energy

The DEQ Brownfields Program has been promoting the reuse of brownfields for renewable energy for the last decade. However, in recent years those efforts have accelerated with outreach specifically designed to help facilitate projects across the Commonwealth. In March 2021 DEQ along with other partners Virginia Energy, Appalachian Voices, and the West Virginia Brownfields Assistance center hosted the 2nd Virginia Solar Summit, formerly named Brightfields Conference, intended to accelerate the discussion around the re-use of land for renewable energy development. The free event had over 800 registrants join the conversation with many more participating on an open livestream. Virginia Energy and DEQ were also Co-Host at the Virginian Clean Energy Summit in October of 2021 which further advanced the discussion around appropriate land use or re-use. To continue the conversation Virginia Solar Summit is currently being planned for spring of 2022 and Virginia Clean Energy Summit it announced for October 2022.

Key Legislation

HB1925 created Virginia Brownfield and Coal Mine Renewable Energy Grant Fund and Program that is intended to help facilitate the deployment of renewable energy on brownfields and coal mine lands. As part of this legislation Virginia Energy as required by the legislation has initiated development of program guidance in coordination with DEQ. These efforts are ongoing despite the fact that the enacted grant program remains unfunded. Allocation of federal and/or state

funding to this program will be vital to assuring opportunities on brownfields and mine lands are not missed.

Technical Assistance

Virginia Energy and DEQ continue to provide technical assistance, develop and enhance mapping resources, and conduct outreach to promote reuse of lands for renewable energy across the Commonwealth. Staff at each agency, often in coordination, have provided technical assistance to hundreds of solar developers, property owners, consultants, attorneys, corporations and investors with efforts to deploy renewable energy projects. Limited staffing has made it challenging to meet this demand.

DEQ is currently working in coordination with Virginia Energy on a Brownfields site selection mapping tool that will be released in early 2022. This tool will help provide information to stakeholders looking to invest in brownfields site in the Commonwealth, including those looking to deploy renewable energy projects. This tool will also alleviate some of the burden on understaffed agencies who have been providing this assistance on a case-by-case basis.

Barriers & Opportunities

PJM que reform has delayed multiple projects.
To see significant investment in to small and mid-scale solar projects on Brownfields, additional policy and incentives like HB1925 may need to be enacted and/or funded.
Large scale solar development is often met with local opposition from both citizens and local government officials. Opposition to development on brownfields sites is often embraced by the community. Virginia policy makers have the opportunity to encourage more investment on brownfields sites as we move forward meeting clean energy goals while protecting our natural resources and people.

Virginia Brownfields Projects

The City of Martinsville

In March 2020, Martinsville City Council approved an approximately 9 MW solar facility at a former Golf Club.

Martinsville will sell the former Lynwood Golf Club site on the DuPont Road to Sol Systems, a solar energy investor and developer with headquarters in Washington, D.C.
Martinsville's peak demand is 42 megawatts, and 2% of that is generated at a hydroelectric dam on the Smith River.

It is anticipated the project will provide significant savings in transmission charges by using electricity

generated locally. The savings to the city is not so much in the cost of the electricity, but in transmission fees, and those costs are projected to increase at a greater rate than the cost of the electricity itself. Electricity produced locally eliminates most of the transmission costs.

Due to historic uses this site is subject to ongoing requirements associated with environmental obligations of the Resource Conservation and Recovery Act. DEQ staff has worked closely with the City, investor, and developer to facilitate this project that received technical assistance and regulatory relief due to its status as a brownfield.

Town of Saltville

The Town of Saltville engaged DEQ for assistance in promoting reuse of an approximately 150 acre former heavily industrial site. The site was historically used to produce (rocket fuel) operated as an animal feed amendment processing plant until the late 1990s. The site was left abandoned and largely forgotten for 20 years until DEQ staff met with the Town and property owner to discuss reuse potential including for renewable energy. The property owner agreed to attend the Brightfields Conference, later renamed the Virginia Solar Summit, in 2019 where they connected with Sun Tribe Solar and a project was born.

However, to see this project mature the environmental challenges needed to be resolved. To facilitate this effort DEQ invested $69,900 of its Environmental Protection Agency (EPA) Brownfields Planning and Assessment Grant to conduct the Phase I Environmental Assessment (ESA), Phase II ESA, and asbestos survey. The Town of Saltville subsequently received a $50,000 grant from Virginia Brownfields Assistance Fund (VBAF) to conduct asbestos remediation and develop an essential storm water management plan designed to protect the river and surrounding lands as development occurs.

This public private partnership that included federal, local, and state investments has led to a unique 2MW solar deployment combined with energy storage on 18 acres of the most heavily industrial part of the property while leaving he forested areas untouched while preserving buffers along the river. The project is slated for completion in 2025 and will be a real asset to a disadvantaged Southwest Virginia Community whose once thriving economy was left behind in a changing economy.

Bedford Landfill Solar Project

The Town of Bedford embraced a brownfield opportunity to deploy solar on their landfill property. Developer **O2 emc** has completed the construction of Bedford Solar, a 3 MW AC (3.3MW DC) solar farm. Bedford Solar is a $6 million investment in Bedford County. Bedford Solar generates around 6,000,000 kilowatt-hours of energy per year, equivalent to the amount of electricity that more than 500 average American homes consume on an annual basis. For the Town the energy provided offset the energy needed to operate the high demand of the municipal wastewater treatment plant. Another exciting aspect to this project is the solar grazing efforts have led to approximately 50 sheep provide vegetative maintenance at the site as well as lead public outreach efforts that see numerous school groups and more come visit every year.

Mineral Gap Project

The 20 acre Mineral Gap Project in Wise County was the first abandoned mine land project to be converted to solar anywhere in Virginia. This project capitalizes on the fast-growing data center boom being seen nation-wide and the move in rural communities throughout Southwest Virginia towards a clean energy economy. The 3.5 MW solar development will support a 65,000 square ft. datacenter. Completion of the project is planned for late 2022.

Buchanan County AML

Details in the Southwest Virginia Solar and Energy Storage Developments section.

The Nature Conservancy Abandoned Mine Land Projects

Details in the Southwest Virginia Solar and Energy Storage Developments section.

K. Workforce Development Opportunities

The clean energy transition in Virginia brought about by the VCEA will result in much needed jobs across the Commonwealth, many of which cannot be outsourced, such as solar installation jobs and energy efficiency implementation or offshore wind construction jobs.

According to the E2 Clean Jobs America 2021 Report Virginia is in the top ten nationwide for clean energy hiring.[39]

The local growth of renewable and clean energy jobs are beneficial to the environment and economy with a growing impact on the economic development of small cities and rural communities. However, ensuring equitable access to workforce development programs and the jobs they create within historically economically disadvantaged communities ("HEDC") (low-income and communities of color) will be a critical consideration. This should be addressed as part of the forthcoming HEDC report that Virginia Energy, the SCC and the Council on Environmental Justice will be addressing beginning in 2022.

Virginia has an opportunity to increase the level of coordination between educational institutions (e.g. research universities, community colleges and technical trade schools), the state and local agencies that oversee occupational growth and economic development, energy and environmental quality, and industry-specific certification programs such as those offered by the nationally recognized North American Board for Certified Practitioners, or NABCEP.

Resources should be made available to address gaps across the Commonwealth specifically relating to the solar and energy storage sector. Existing programs could be scaled up and/or replicated, such as the Solar Ready Vets program at Tidewater Community College, the solar training courses at Mountain Empire Community College, or the SHINE partnership with Southside Community College (Solar Hands-on Instructional Network of Excellence). It should be notes that in the 2021 legislative session, Southside CC received a two-year budget appropriation to help scale up the SHINE program.

Other workforce development resources that can be called upon include:

- Virginia Energy Workforce Consortium
- Virginia Department of Education Energy Career Cluster
- Virginia Department of Labor and Industry - Apprenticeship Programs
- Virginia Chamber of Commerce - Blueprint Virginia 2030

Virginia Energy is in an excellent position to help facilitate a gap analysis to understand where there are opportunities to reach individuals and organizations to help Virginia transition to meeting its ambitious clean energy goals called for in the VCEA.

[39] https://e2.org/wp-content/uploads/2021/04/E2-2021-Clean-Jobs-America-Report-04-19-2021.pdf

L. The Virginia Energy Cost Effective Decarbonization Report

Within the VCEA of 2020, the Virginia Department of Energy, and other named stakeholders were charged to provide a report with recommendations on how to reach decarbonization goals at the least costs to ratepayers:

> "That in developing a plan to reduce carbon dioxide emissions from covered units described in §10.1-1308 of the Code of Virginia, as amended by this act, the Secretary of Natural Resources and the Secretary of Commerce and Trade, in consultation with the SCC and the Council on Environmental Justice and appropriate stakeholders, shall report to the General Assembly by January 1, 2022, any recommendations on how to achieve 100 percent carbon-free electric energy generation by 2045 at least cost for ratepayers. Such report shall include a recommendation on whether the General Assembly should permanently repeal the ability to obtain a certificate of public convenience and necessity for any electric generating unit that emits carbon as a by-product of combusting fuel to generate electricity. Until the General Assembly receives such report, the SCC shall not issue a certificate of public convenience and necessity for any investor-owned utility to own, operate, or construct any electric generating unit that emits carbon as a by-product of combusting fuel to generate electricity."

Virginia Energy and the Department of Environmental Quality partnered together to lead the project, bringing on the expertise of research organizations affiliated with some of Virginia's public education institutions, including the Georgetown Climate Center, Resources for the Future (RFF) and the Weldon Cooper Center for Public Service's Energy Transition Initiative at the University of Virginia (UVA). The project team, led by Virginia Energy, engaged stakeholders through in-person and virtual consultations, public webinars, and a public comment process. Key consultations took place with the Council on Environmental Justice and its subcommittee on Just Transition and Infrastructure, staff of the SCC, PJM, and the Southern Environmental Law Center.

Virginia Energy received public comments from several dozen organizations and many individuals in Virginia, including but not limited to: the SCC, PJM, Dominion Energy, New Virginia Majority, Southern Environmental Law Center (SELC), NRDC, Sierra Club, The Nature Conservancy, Appalachian Voices, Virginia Manufacturers Association, Nuclear Energy Institute, Virginia Chamber of Commerce, National Federation of Independent Businesses (NFIB), Virginia Hispanic Chamber of Commerce, and more.

The final report is due to the General Assembly by January 1, 2022.

M. The Virginia Energy Dashboard

Virginia Energy contracted with UVA's Weldon Cooper Center for Public Service to create an interactive dashboard to track Virginia's transition to clean energy as a result of the Governor's Executive Order Forty-Three and the Virginia Clean Economy Act. The project is titled, "Virginia Clean Economy Progress"[40]

Example page from the Virginia Clean Energy Dashboard

Students at UVA worked under the direction of faculty to create the visualization framework, which has automatic data links from national sources such as the U.S. Energy Information Administration and other sources.

The details of the VCEA aims to transition Virginia's electric grid to 100% carbon-free generation by 2050, while improving energy equity. The legislation includes mandates to increase generation from renewable energy, improve energy efficiency, reduce carbon emissions, and increase access to affordable energy to lower-income communities and communities of color. The legislation imposes mandates on investor-owned power utilities, state agencies, and others to achieve specific quantitative targets on specific schedules.

This dashboard is designed to enable state policy makers and other stakeholders to track Virginia's progress towards the realization of VCEA clean energy goals. For each of several quantitative measures, the dashboard displays data on current progress, in the context of historic experience and legislated future targets. The dashboard is designed to be updated as new data become available. It is hoped that the dashboard will assist all stakeholders by providing accountability towards realization of Virginia's clean economy goals.

[40] http://cleanenergyva.dmme.virginia.gov/

APPENDIX A

List of Applications for a License as a Non-exempt Subscriber Organization in the Shared Solar Program

Case Number	Case Name	Caption	Status	Date Established
PUR-2021-00231	CHABERTON SOLAR VIRGINIA LLC	Chaberton Solar Virginia LLC - Application for a License as a Non-exempt Subscriber Organization in the Shared Solar Program	A	09/24/2021
PUR-2021-00209	LODESTAR ENERGY LLC	Lodestar Energy LLC - Application for Licensure as a Non-Exempt Shared Solar Subscriber Organization	A	09/02/2021
PUR-2021-00208	IMPACT POWER SOLUTIONS LLC	Impact Power Solutions LLC - Application for a License as a Non-Exempt Subscriber Organization in the Shared Solar Program	A	09/01/2021
PUR-2021-00207	IPS DEVELOPMENT VIRGINIA LLC	IPS Development Virginia LLC - Application for a License as a Non-Exempt Subscriber Organization in the Shared Solar Program	A	09/01/2021
PUR-2021-00203	NEXAMP, INC.	Nexamp, Inc. - Application for a License as a Non-exempt Subscriber Organization in the Shared Solar Program	A	08/30/2021
PUR-2021-00204	IPS DEVELOPMENT VIRGINIA LLC	IPS Development Virginia LLC - Application for a License as a Non-Exempt Subscriber Organization in the Shared Solar Program	A	08/30/2021
PUR-2021-00199	NEW ENERGY EQUITY LLC	New Energy Equity LLC - Application to participate as a Non-Exempt Subscriber Organization in Virginia's Shared Solar Program with Dominion Energy	A	08/25/2021
PUR-2021-00200	NEW ENERGY EQUITY VA LLC	New Energy Equity VA LLC - Licensing application to participate as a Non-Exempt Subscriber Organization in Virginia's Shared Solar Program with Dominion Energy	A	08/25/2021
PUR-2021-00195	ACE VA DER 2023, LLC	ACE VA DER 2023, LLC - Application for Licensure as a Non-Exempt Shared Solar Subscriber Organization.	A	08/23/2021
PUR-2021-00188	PIVOT ENERGY VIRGINIA LLC	Pivot Energy Virginia LLC - Application for Licensure as a Non-Exempt shared Solar Subscriber Organization.	A	08/13/2021

Case Number	Case Name	Caption	Status	Date Established
PUR-2021-00166	SUFFOLK CSG LLC	Suffolk CSG LLC - Application for a License as a Non-exempt Subscriber organization in the Shard Solar Program.	A	08/02/2021
PUR-2021-00167	PRINCE EDWARDS CSG LLC	Prince Edwards CSG LLC - Application for a License as a Non-exempt Subscriber Organization in the Shared Solar Program.	A	08/02/2021
PUR-2021-00169	AUGUSTA CSG LLC	Augusta CSG LLC - Application for a License as a Non-exempt Subscriber organization in the Shared Solar Program.	A	08/02/2021
PUR-2021-00168	SOUTH BOSTON CSG LLC	South Boston CSG LLC - Application for a License as a Non-exempt Subscriber organization in the Shared Solar Program.	A	08/02/2021
PUR-2021-00162	CAMPBELL CSG LLC	Campbell CSG LLC - Application for a license as a Non-exempt Subscriber organization in the Shared Solar Program	A	08/02/2021
PUR-2021-00163	HALIFAX CSG LLC	Halifax CSG LLC - Application for a License as a Non-exempt Subscriber organization in the Shared Solar Program.	A	08/02/2021
PUR-2021-00160	CONSOLIDATED EDISON CLEAN	Consolidated Edison Energy Businesses, Incorporated - Application for a Non-exempt Subscriber Organization in the Shared Solar Program.	A	08/02/2021
PUR-2021-00164	MECKLENBURG CSG 1 LLC	Mecklenburg CSG 1 LLC - Application for a License as a Non-exempt Subscriber organization in the Shared Solar Program.	A	08/02/2021
PUR-2021-00165	MECKLENBURG CSG 2 LLC	Mecklenburg CSG 2 LLC - Application for a License as a Non-exempt Subscriber organization in the Shared Solar Program.	A	08/02/2021
PUR-2021-00152	DIMENSION VA 1 LLC	Dimension VAS 1 LLC - Application for a License as a Non-exempt Subscriber organization in the Shared Solar Program.	A	07/23/2021
PUR-2021-00150	AMERESCO, INC.	Ameresco - Application for a License as a Non-Exempt Subscriber Organization in the Multi-Family Shared Solar Program	A	07/23/2021

Case Number	Case Name	Caption	Status	Date Established
PUR-2021-00140	SHARED SOLAR HOLDCO, LLC	Shared Solar HoldCo, LLC - Application for Licensure as a Subscriber Organization, submitted pursuant to 20VAC5-340-30.	A	07/02/2021

APPENDIX B

DOMINION SOLAR ENERGY AND ENERGY STORAGE PROJECTS AND POWER OFFTAKERS

Dominion Energy's Solar and Storage Projects located in Virginia (as of Oct. 22, 2021)

Facility	Resource Category	Locality	Category	Offtaker	Solar in Operation (MWac)	Storage in Operation (Mwac)	Solar in Operation & Development (Mwac)	Storage in Operation & Development (Mwac)	Commercial Operations Date (COD)
Virginia Union University	Solar	City of Richmond	Regulated	Serving all Dominion Energy regulated electric customers in VA and NC	0.05	0	0.05	0	2014
Capital One	Solar	Chesterfield County	Regulated		0.5	0	0.5	0	2014
Old Dominion University	Solar	City of Norfolk	Regulated		0.13	0	0.13	0	2014
Prologis	Solar	Loudoun County	Regulated		0.75	0	0.75	0	2015
Randolph-Macon College	Solar	Town of Ashland	Regulated		0.05	0	0.05	0	2015
Philip Morris	Solar	Chesterfield County	Regulated		2	0	2	0	2016
Western Branch High School	Solar	City of Chesapeake	Regulated		1	0	1	0	2016
Merck	Solar	Rockingham County	Regulated		1.5	0	1.5	0	2017
University of Virginia	Solar	City of Charlottesville	Regulated		0.4	0	0.4	0	2017
Amazon Solar Farm Virginia - Accomack	Solar	Accomack County	Merchant	Amazon Web Services	80	0	80	0	Oct-16
Amazon Solar Farm Virginia - Buckingham	Solar	Buckingham County	Merchant		20	0	20	0	Dec. 1, 2017
Amazon Solar Farm Virginia - New Kent	Solar	New Kent County	Merchant		20	0	20	0	
Amazon Solar Farm Virginia - Scott	Solar	Powhatan County	Merchant		20	0	20	0	
Amazon Solar Farm Virginia - Sappony	Solar	Sussex County	Merchant		20	0	20	0	
Amazon Solar Farm Virginia - Southampton	Solar	Southampton County	Merchant		100	0	100	0	Dec. 15, 2017
Clarke	Solar	Clarke County (White Post, VA)	Merchant	Old Dominion Electric Cooperative	10	0	10	0	Aug-17
Cherrydale	Solar	Kendall Grove (Eastern Shore)	Merchant		20	0	20	0	Nov. 22, 2017
Remington	Solar	Fauquier County	Regulated	Commonwealth of VA (Energy) and Microsoft (RECs)	20	0	20	0	Oct. 1, 2017
Oceana	Solar	Virginia Beach	Regulated	Commonwealth of VA	18	0	18	0	Dec. 1, 2017
Whitehouse	Solar	Louisa County	Regulated	Serving all Dominion Energy regulated electric customers in VA and NC	20	0	20	0	December 2016/ Q4 2021
Woodland	Solar	Isle of Wight County	Regulated		19	0	19	0	
Scott	Solar	Powhatan County	Regulated		17	0	17	12	
UVA Hollyfield	Solar	King William County	Regulated	UVA (Commonwealth of VA)	17	0	17	0	Sep-18
UVA Puller	Solar	Middlesex County	Regulated		15	0	15	0	Oct-18
Essex*	Solar	Essex County (Dunnsville, VA)	PPA with Dominion Energy Virginia (Regulated)	Serving all Dominion Energy regulated electric customers in VA and NC	20	0	20	0	Dec. 14, 2017

Dominion Energy's Solar and Storage Projects located in Virginia (as of Oct. 22, 2021)

Facility	Resource Category	Locality	Category	Offtaker	Solar in Operation (MWac)	Storage in Operation (Mwac)	Solar in Operation & Development (Mwac)	Storage in Operation & Development (Mwac)	Commercial Operations Date (COD)
Spring Grove 1	Solar	Surry County	Regulated	Serving all Dominion Energy regulated electric customers in VA and NC; supported by Facebook via Dominion Energy Virginia Schedule RF	98	0	98	0	Nov-20
Colonial Trail West	Solar	Surry County	Regulated	Serving all Dominion Energy regulated electric customers in VA and NC; supported by Facebook via Dominion Energy Virginia Schedule RF	142	0	142	0	Dec-19
Sadler Solar	Solar	Greensville County	Regulated	Serving all Dominion Energy regulated electric customers in VA and NC; supported by Facebook via Dominion Energy Virginia Schedule RF	100	0	100	0	July 2021
Water Strider*	Solar	Halifax County	PPA with Dominion Energy Virginia (Regulated)	Serving all Dominion Energy regulated electric customers in VA and NC	80	0	80	0	2021
Montross	Solar	Westmoreland County	Regulated	Facebook	20	0	20	0	Dec-18
Gloucester	Solar	Gloucester County	Regulated	Facebook	20	0	20	0	Apr-19
Grasshopper	Solar	Mecklenburg County	Regulated	Facebook	80	0	80	0	October 2020
Greensville	Solar	Greensville County	Merchant	T-Mobile USA	80	0	80	0	2020
Myrtle	Solar	City of Suffolk	Merchant	T-Mobile USA	15	0	15	0	2020
Belcher Solar	Solar	Louisa County	Regulated	Commonwealth of Virginia	88	0	88	0	June 2021
Amazon Arlington Solar Farm Virginia	Solar	Pittsylvania County	Regulated	Amazon and Arlington County	0	0	120	0	2022
Bedford	Solar	City of Chesapeake	Regulated	Commonwealth of Virginia	0	0	70	0	2021
Black Bear Solar	Solar	Buckingham County	Regulated	Serving all Dominion Energy regulated electric customers in VA and NC	0	0	1.62	0	2022
Camellia	Solar	Gloucester County			0	0	20	0	2023

Dominion Energy's Solar and Storage Projects located in Virginia (as of Oct. 22, 2021)

Facility	Resource Category	Locality	Category	Offtaker	Solar in Operation (MWac)	Storage in Operation (Mwac)	Solar in Operation & Development (Mwac)	Storage in Operation & Development (Mwac)	Commercial Operations Date (COD)
Carysbrook 1*	Solar	Fluvanna County	PPA with Dominion Energy Virginia (Regulated)	Serving all Dominion Energy regulated electric customers in VA and NC	0	0	1	0	Dec-22
Carysbrook 2*	Solar	Fluvanna County			0	0	1	0	Dec-22
Carysbrook 3*	Solar	Fluvanna County			0	0	1	0	Dec-22
Cavalier*	Solar	Surry and Isle of Wight Counties	PPA with Dominion Energy Virginia (Regulated)	Serving all Dominion Energy regulated electric customers in VA and NC	0	0	170	0	Dec-22
Centerpoint 1*	Solar	City of Suffolk	PPA with Dominion Energy Virginia (Regulated)	Serving all Dominion Energy regulated electric customers in VA and NC	0	0	1	0	Dec-22
Centerpoint 2*	Solar	City of Suffolk			0	0	1	0	Dec-22
Centerpoint 3*	Solar	City of Suffolk			0	0	1	0	Dec-22
Chesapeake*	Solar	City of Chesapeake	PPA with Dominion Energy Virginia (Regulated)	Serving all Dominion Energy regulated electric customers in VA and NC	0	0	118	0	Dec-22
Cox*	Solar Plus Storage	Halifax County			0	0	16.0	8	Sep-23
Dulles Solar	Solar Plus Storage	Fairfax and Loudoun Counties	Regulated	Serving all Dominion Energy regulated electric customers in VA and NC	0	0	100	50	2023
Elm Spring*	Solar	Augusta County	PPA with Dominion Energy Virginia (Regulated)	Serving all Dominion Energy regulated electric customers in VA and NC	0	0	3	0	Dec-22
Fort Powhatan	Solar	Prince George County	Regulated	Data Center Company	0	0	150	0	Dec-21
Fountain Creek	Solar	Greensville County	Regulated	Serving all Dominion Energy regulated electric customers in VA and NC	0	0	80	0	2023
Grassfield	Solar	City of Chesapeake			0	0	20	0	Apr-22
Harris Road*	Solar	Lancaster County	PPA with Dominion Energy Virginia (Regulated)	Serving all Dominion Energy regulated electric customers in VA and NC	0	0	3	0	May-22
Highlands Solar	Solar	Wise County	Regulated	Serving all Dominion Energy regulated electric customers in VA and NC	0	0	50	0	2025

Dominion Energy's Solar and Storage Projects located in Virginia (as of Oct. 22, 2021)

Facility	Resource Category	Locality	Category	Offtaker	Solar in Operation (MWac)	Storage in Operation (Mwac)	Solar in Operation & Development (Mwac)	Storage in Operation & Development (Mwac)	Commercial Operations Date (COD)
Ho-Fel*	Solar	Franklin	PPA with Dominion Energy Virginia (Regulated)	Serving all Dominion Energy regulated electric customers in VA and NC	0	0	50	0	Jul-23
Jarratt*	Solar	Greensville County			0	0	48	0	Dec-23
Knollwood*	Solar	Pittsylvania County			0	0	3	0	Dec-22
Merry Point	Solar Plus Storage	Lancaster County	Regulated		0	0	100.0	50	2024
Moon Corner	Solar	Richmond County			0	0	60	0	2025
Norge	Solar	James City County			0	0	20	0	2022
Nuby Run*	Solar	Isle of Wight County	PPA with Dominion Energy Virginia (Regulated)	Serving all Dominion Energy regulated electric customers in VA and NC	0	0	2	0	Aug-22
Otter Creek	Solar	Mecklenburg County	Regulated	Serving all Dominion Energy regulated electric customers in VA and NC	0	0	60	0	2023
OYA Jack Drive*	Solar	Dinwiddie County	PPA with Dominion Energy Virginia (Regulated)	Serving all Dominion Energy regulated electric customers in VA and NC	0	0	3	0	Aug-22
Piney Creek	Solar	Halifax County	Regulated	Serving all Dominion Energy regulated electric customers in VA and NC	0	0	80	0	2023
Pleasant Hill*	Solar	City of Suffolk	PPA with Dominion Energy Virginia (Regulated)	Serving all Dominion Energy regulated electric customers in VA and NC	0	0	20	0	Jun-22
Pumpkinseed Solar	Solar	Greensville County	Regulated	Commonwealth of Virginia	0	0	59.6	0	Apr-22
Quillwort	Solar	Powhatan County	Regulated	Serving all Dominion Energy regulated electric customers in VA and NC	0	0	18.0	0	Q4 2023
Rappahannock Solar*	Solar	Lancaster County	PPA with Dominion Energy Virginia (Regulated)	Community Solar	0	0	1.5	0	Nov-21

Dominion Energy's Solar and Storage Projects located in Virginia (as of Oct. 22, 2021)

Facility	Resource Category	Locality	Category	Offtaker	Solar in Operation (MWac)	Storage in Operation (Mwac)	Solar in Operation & Development (Mwac)	Storage in Operation & Development (Mwac)	Commercial Operations Date (COD)
Rivanna Solar*	Solar	Albemarle County	PPA with Dominion Energy Virginia (Regulated)	Serving all Dominion Energy regulated electric customers in VA and NC	0	0	12.5	0	Jun-22
Rochambeau	Solar	James City County	Regulated	College of William & Mary	0	0	20	0	Dec-21
Rockingham Scenic Farms*	Solar	Rockingham County	PPA with Dominion Energy Virginia (Regulated)	Serving all Dominion Energy regulated electric customers in VA and NC	0	0	3	0	Mar-22
Sandale*	Solar	Lancaster County			0	0	3	0	Sep-22
Sebera	Solar	Prince George County	Regulated	Serving all Dominion Energy regulated electric customers in VA and NC	0	0	18	0	Q4 2023
Shenvalee*	Solar	Augusta County	PPA with Dominion Energy Virginia (Regulated)	Serving all Dominion Energy regulated electric customers in VA and NC	0	0	3	0	Dec-22
Sinai*	Solar Plus Storage	Cumberland County			0	0	10.0	5	Sep-23
Solidago	Solar	Isle of Wight County	Regulated	Serving all Dominion Energy regulated electric customers in VA and NC	0	0	20	0	Q4 2023
Spring Run 1*	Solar	Hanover	PPA with Dominion Energy Virginia (Regulated)	Serving all Dominion Energy regulated electric customers in VA and NC	0	0	1	0	Dec-22
Spring Run 2*	Solar	Hanover			0	0	1	0	Dec-22
Spring Run 3*	Solar	Hanover			0	0	1	0	Dec-22
Springfield	Solar	Westmoreland County	Regulated	Serving all Dominion Energy regulated electric customers in VA and NC	0	0	2	0	Dec-22
Stratford*	Solar	City of Suffolk	PPA with Dominion Energy Virginia (Regulated)	Serving all Dominion Energy regulated electric customers in VA and NC	0	0	15	0	Dec-21
Suffolk*	Solar	City of Suffolk			0	0	3	0	Nov-22
Surry*	Solar	Surry County			0	0	20	0	Feb-23
Sweet Sue	Solar	King William County	Regulated	Serving all Dominion Energy regulated electric customers in VA and NC	0	0	75	0	2023
Sycamore	Solar	Pittsylvania County			0	0	42	0	2022

Dominion Energy's Solar and Storage Projects located in Virginia (as of Oct. 22, 2021)

Facility	Resource Category	Locality	Category	Offtaker	Solar in Operation (MWac)	Storage in Operation (Mwac)	Solar in Operation & Development (Mwac)	Storage in Operation & Development (Mwac)	Commercial Operations Date (COD)
USS Boykins (1)*	Solar	Southampton County	PPA with Dominion Energy Virginia (Regulated)	Serving all Dominion Energy regulated electric customers in VA and NC	0	0	1	0	Dec-22
USS Boykins (3)*	Solar	Southampton County			0	0	3	0	Jan-23
Walnut	Solar	King and Queen County	Regulated	Serving all Dominion Energy regulated electric customers in VA and NC	0	0	150	0	Q4 2023
Watlington*	Solar	Halifax County	PPA with Dominion Energy Virginia (Regulated)	Serving all Dominion Energy regulated electric customers in VA and NC	0	0	20	0	Mar-22
Westmoreland*	Solar	Westmoreland County			0	0	20	0	Oct-21
Winterberry	Solar	Gloucester County	Regulated	Serving all Dominion Energy regulated electric customers in VA and NC	0	0	20	0	Q4 2023
Winterpock	Solar	Chesterfield County			0	0	20	0	Q4 2023
Wood Brothers Road 1*	Solar	Middlesex County	PPA with Dominion Energy Virginia (Regulated)	Serving all Dominion Energy regulated electric customers in VA and NC	0	0	1	0	Dec-22
Wood Brothers Road 2*	Solar	Middlesex County			0	0	1	0	Dec-22
Wood Brothers Road 3*	Solar	Middlesex County			0	0	1	0	Dec-22
Wythe County*	Solar	Wythe County	PPA with Dominion Energy Virginia (Regulated)	Serving all Dominion Energy regulated electric customers in VA and NC	0	0	75	0	Dec-22
360-1*	Solar	Chesterfield County			0	0	26.0	0	Sep-23
360-2*	Solar	Chesterfield County			0	0	26.0	0	Sep-23
Battery Storage Pilot - Hanover	Storage	Halifax County	Regulated	Serving all Dominion Energy regulated electric customers in VA and NC	0	0	0	2	Q1 2022
Battery Storage Pilot - New Kent	Storage	New Kent County			0	0	0	2	Q1 2023
Dry Bridge	Storage	Chesterfield County			0	0	0	20	2022
Three Sisters*	Storage	Southampton County	PPA with Dominion Energy Virginia (Regulated)	Serving all Dominion Energy regulated electric customers in VA and NC	0	0	0	20	December 2023
Madison	Solar	Orange County	Merchant	Northrop Gruman Corporation	0	0	62.5	0	Q2 2022
Total**					**1,165.38**	**0.00**	**3,294.10**	**169.00**	

*Facility not owned by Dominion Energy. Reflects power purchase agreement executed with Dominion Energy Virginia.
**Excludes approx. 10 MWac operational across 22 solar distributed generation projects serving various localities across Virginia, primarily K-12 schools, under contract with Dominion Energy's BrightSuite subsidiary.

APPENDIX C

SOLAR PROJECTS COMPLETED IN VIRGINIA

SOLAR PROJECTS COMPLETED IN VIRGINIA

Distributed (Net Metered) Solar

System Owner	Location	Capacity (MW)
20,980 Distributed Individual Utility Customers	Distributed Across State	
	Total	**196.6**

Behind-the-Meter - Not Net Metered

System Owner	Location	Capacity (MW)
Norfolk Naval "Monkey Bottom"	Norfolk Naval Base	2
Dept. Military Affairs	Ft. Pickett	0.6
	Total	**2.6**

Dominion Energy

See Appendix B for details)	**Total**	**1,165**

Cooperative Utility Projects

Cooperative	Location	Capacity (MW)
Central Virginia Electric Cooperative	Goochland County	5
Central Virginia Electric Cooperative	Fluvanna County	5
BARC Electric Cooperative	Fauquier County	0.6
	Total	**10.6**

Municipal Utility Projects

Municipality	Capacity (MW)
Town of Bedford	3
Town of Front Royal	3
City of Danville	20
TOTAL:	**24.0**

Dominion Solar Partnership Projects

Project Site	Location	Capacity (MW)
Old Dominion University	Norfolk	0.13
Capital One	Chesterfield County	0.5
Virginia Union University	Richmond	0.05
Prologis Concorde Center	Loudoun County	0.74
Randolph-Macon College	Ashland	0.05
Philip Morris Park 500	Chesterfield County	2.0
Western Branch High School	Chesapeake	1
Merck	Rockingham County	1.5
University of Virginia	Charlottesville	0.4
	Total:	**6.4**

Power Purchase Agreements

Customer-Generator Facility Location	Years of Purchase Agreement	Placed in Service Date	Capacity (kW)
VA Arts Festival- Norfolk	10	10/13/2021	40.0
Windsor Elementary School - Isle of Wight	25	8/6/2021	467.0
Our Lady of Lourdes Catholic School & Church - Henrico	25	7/27/2021	86.4
Fluvanna Middle School-Palmyra	30	6/30/2021	800.0
Orange County High School-Orange	25	6/30/2021	215.0
Catholic Diocese Pastoral Center- Richmond	20	6/2/2021	200.0
West Central Primary School-Palmyra	30	5/27/2021	300.0
Low-income Resident- Norfolk	8	5/26/2021	10.0
Church of the Holy Family - VA Beach	10	5/25/2021	216.0
Orange Prospect Heights Middle School- Orange	25	5/11/2021	192.0
Georgie Tyler Middle School - Isle of Wight	25	5/11/2021	599.4
Church of St. Therese- Chesapeake	20	4/22/2021	86.4
Henrico Public Safety Building-Henrico	25	4/7/2021	66.6
Norva Plastics, Inc - Norfolk	10	2/3/2021	73.3
Wesley Union AME Zion Church - Norfolk	13	1/28/2021	10.0
Renaissance Academy- Virginia Beach	25	1/13/2021	732.6
Sri Sai Narayana Org. Three Chopt Rd Manakin-Sabot	6	1/5/2021	10.2
Temple Rodef Shalom- Falls Church	20	12/31/2020	100.0
Augusta S. Gordon Stewart Middle School- Fort Defiance	25	12/31/2020	120.0
Augusta Wilson Memorial High School- Fishersville	20	12/31/2020	477.0
Orange County Elementary School- Orange	25	12/31/2020	200.0

Orange County High School Field House- Orange	25	12/31/2020	120.0
Orange Taylor Education Administrative Complex-Orange	25	12/31/2020	200.0
Sri Sai Narayana Org. Manakin Rd Manakin- Sabot	6	12/16/2020	3.7
Southside Boys & Girls Club-Norfolk	7	12/7/2020	52.2
Thoroughgood Elementary School- Virginia Beach	25	12/3/2020	166.6
Ocean Lakes Elementary School- Virginia Beach	25	12/2/2020	366.6
William Perry Elementary School- Waynesboro	20	12/1/2020	170.8
Waynesboro High School-Waynesboro	20	11/17/2020	153.7
Westwood Hills Elementary School- Waynesboro	20	11/10/2020	153.4
Kate Collins Middle School-Waynesboro	20	11/5/2020	295.0
Louisa Middle School- Mineral	30	10/22/2020	1,000.0
Shenandoah County Public Schools Triplett Tech-Mount Jackson	30	10/10/2020	220.0
Equi-Kids Therapeudic Riding - VA Beach	12	9/29/2020	72.0
Gatewood Peep PreK-8 School-Newport News	30	9/16/2020	158.0
Acquinton Elementary School-King William	30	9/9/2020	625.0
Cool Spring Elementary School-King William	30	9/9/2020	500.0
St. Anthony of Padua Catholic Church-Falls Church	20	8/20/2020	150.0
St. Bernadette Catholic School-Springfield	20	8/20/2020	100.0
St. Bernadete Catholic Church-Springfield	20	8/20/2020	60.0
Church of the Nativity- Burke, VA	20	8/20/2020	60.0
Carysbrook Elementary School-Palmyra	30	8/13/2020	500.0
Central Elementary School-Palmyra	25	8/6/2020	144.0
St. Anthony of Padua Corpus Christi School- Falls Church	20	7/29/2020	200.0
Fleet Elementary School-Arlington	25	7/23/2020	500.0
Ironclad Distillery Co.- Newport News	7	7/8/2020	52.2
Hanover High School- Ashland	30	4/23/2020	466.0
Oak Knoll Middle School-Ashland	30	4/23/2020	532.0
Senior Center, Inc - Center at Belvedere- Charlottesville	25	4/15/2020	198.0
Cool Spring Elementary School-Ashland	30	4/14/2020	233.0
Powhatan Middle School-Powhatan	25	4/7/2020	396.0
Powhatan Elementary School-Powhatan	25	4/4/2020	366.0
Laurel Meadow Elementary School- Ashland	30	4/2/2020	300.0
Flat Rock Elementary School-Powhatan	25	4/1/2020	200.0
Pocahontas Elementary School- Powhatan	25	4/1/2020	333.0
G.H. Reid Elementary School-Richmond	20	1/22/2020	150.0
J.B. Fisher Elementary School-Richmond	20	1/22/2020	100.0
Washington District Elementary School- Montross	25	12/30/2019	300.0

First Baptist Church of Berkley-Norfolk	7	12/24/2019	66.0
Middlesex High School- Saluda	25	12/20/2019	720.0
Broad Rock Elementary School-Richmond	20	10/31/2019	143.0
Norfolk Machine & Welding, Inc.-Norfolk	7	9/30/2019	100.0
Martin Luther King Jr. Middle School- Richmond	20	9/25/2019	433.0
Lucille Murray Brown Middle School- Richmond	20	9/25/2019	360.0
Devils Backbone Outpost Taproom and Kitchen-Lexington	15	9/25/2019	453.3
Tuckahoe Elementary School-Arlington	25	9/24/2019	17.9
Linwood Holton Elementary School- Richmond	20	9/23/2019	120.0
Huguenot High School- Richmond	20	9/23/2019	540.0
M.J. Jones Elementary School-Richmond	20	9/23/2019	111.0
Oak Grove Elementary School-Richmond	20	9/23/2019	150.0
J.H. Blackwell Elementary School- Richmond	20	9/23/2019	148.0
CozyPure Organic Comfort Zone-Norfolk	7	9/19/2019	52.2
Immaculate Conception-Hampton	20	8/5/2019	116.0
Wilson Middle School- Fishersville	20	7/31/2019	231.0
Henrico Libbie Mill Library-Richmond	25	7/13/2019	122.0
Henrico Mental Health East Clinic-Richmond	25	7/13/2019	272.0
Wilson Elementary School-Fishersville	20	7/8/2019	276.0
J.D. Miles & Sons, Inc- Chesapeake	7	7/8/2019	52.0
Riverheads Elementary School-Staunton	20	7/1/2019	230.0
Riverheads High School- Staunton	20	7/1/2019	88.0
St. Andrew Presbyterian=Suffolk	10	5/8/2019	30.0
Westmoreland County Public Schools-Cople Elementary-Hague, Va	25	4/24/2019	660.0
Williamsburg Unitarian Universalists- Williamsburg	10	4/1/2019	43.2
Virginia Union University Library- Richmond	20	3/1/2019	144.0
Norfolk Academy South Campus-Norfolk	7	12/28/2018	492.0
Peabody School- Charlottesville	25	10/31/2018	100.0
Daniels Run Peace Church-Fairfax	20	10/31/2018	8.9
Washington & Lee University-Lexington	20	10/24/2018	72.0
Collegiate School Centennial Hall- Richmond	20	9/1/2018	10.0
Collegiate School Robins Campus- Richmond	20	9/1/2018	67.6
Collegiate School Sharp Academic Commons- Richmond	20	9/1/2018	20.0
Middlesex County Public Schools-Saluda	25	8/16/2018	850.0
Norfolk Academy Maintenance Norfolk	7	7/13/2018	40.0
HCM/MTE Associates- Charlottesville	20	6/22/2018	150.0
Unity Renaissance Chesapeake	10	4/11/2018	20.0

Green Applications, LLC Gordonsville	20	12/14/2017	620.0
St. Anne's Belfield School-Charlottesville	6	9/15/2017	315.4
Westminster Presbyterian Church Charlottesville	7	6/7/2017	12.8
Lylburn-Downing Middle School Lexington	20	9/21/2016	84.0
Albemarle High School Charlottesville	20	9/15/2016	112.0
Baker-Butler Elementary School- Charlottesville	20	9/15/2016	199.0
Brownsville Elementary School-Crozet	20	9/15/2016	107.0
Monticello High School Charlottesville	20	9/15/2016	219.0
Mortimer Sutherland Middle School Charlottesville	20	9/15/2016	224.0
Mary A. Greer Elementary School Charlottesville	20	9/15/2016	56.0
University of Richmond	20	5/26/2016	187.3
DCCU, Shenandoah Village Op Center- Waynesboro	25	2018	49.3
DCCU, Shenandoah Village Plaza- Waynesboro	25	2018	68.2
DCCU, Verona	25	2018	14.0
DCCU, Community Way-Staunton	25	2018	16.9
DCCU, Riverside- Waynesboro	25	2018	27.8
DCCU, Stuarts Draft	25	2018	14.3
DCCU, Lexington	25	2018	17.8
DCCU, Woodstock	25	2018	20.0
		Total (MW)	**24.5**

APPENDIX D

SOLAR ENERGY PROJECTS UNDER DEVELOPMENT

Dominion Energy - Under Development

See Appendix B for details	Total	2,129

Permit by Rule – Permits Issued and/or Under Construction

Permit Name	County/City	PBR Issued	Construction Commenced	Capacity (MW)
Bluestone Farm Solar, LLC	Mecklenburg County	12/5/2017	3/1/2019	50.0
Danville Farm, LLC	Pittsylvania County	7/10/2019	12/15/2019	12.0
Twittys Creek Solar, LLC	Charlotte County	12/5/2017	6/12/2020	15.0
Maplewood Solar	Pittsylvania County	6/10/2020	7/20/2020	120.0
Bedford Solar Center	Chesapeake City	4/9/2020	7/30/2020	70.0
Fort Powhatan Solar, LLC	Prince George County	3/19/2020	8/3/2020	150.0
Buckingham II Solar LLC	Buckingham County	6/18/2018	10/7/2020	20.0
Pumpkinseed Solar	Greensville County	12/17/2019	12/2/2020	60.0
Sol Leatherwood Solar, LLC	Henry County	12/17/2018	1/8/2021	20.0
Rocky Forge Wind, LLC	Botetourt County	3/2/2017	3/18/2021	80.0
Rochambeau Solar, LLC	James City County	5/12/2020	4/5/2021	19.9
Sol Madison Solar, LLC	Orange County	4/23/2019	7/26/2021	62.5
Mechanicsville Solar, LLC	Hanover County	9/26/2017		20.0
Briel Farm Solar LLC	Henrico County	6/14/2018		20.0
Mt. Jackson Solar I, LLC	Shenandoah County	7/17/2018		16.0
Sunnybrook Farm Solar, LLC	Halifax County	9/25/2018		51.0
Gardy's Mill Solar, LLC	Westmoreland County	11/27/2018		14.0
Caden Energix Hickory, LLC	Chesapeake City	3/14/2019		32.0
Powells Creek Farm Solar, LLC	Halifax County	5/2/2019		70.0
Turner Solar, LLC	Henrico County	7/10/2019		20.0
Depot Solar	Campbell County	11/5/2019		15.0
Crystal Hill Solar, LLC	Halifax County	12/17/2019		65.0
Foxhound Solar, LLC	Halifax County	12/17/2019		83.0
Rivanna Solar, LLC	Albemarle County	1/16/2020		12.5
Westmoreland County Solar Project	Westmoreland County	1/28/2020		20.0
Nokesville Solar, LLC	Prince William County	2/20/2020		20.0
Whitehorn Solar LLC	Pittsylvania County	4/22/2020		50.0
Caden Energix Wytheville LLC	Wythe County	7/27/2020		20.0
Wythe County Solar Project, LLC	Wythe County	9/22/2020		75.0
Greenwood Solar I, LLC	Culpeper County	9/22/2020		100.0
Carvers Creek Solar	Gloucester County	11/12/2020		150.0
Alton Post Office Solar, LLC	Halifax County	12/7/2020		75.0

Pleasant Hill Solar	Suffolk City	2/5/2021		20.0
Spring Grove Solar II, LLC	Surry County	3/4/2021		150.0
Watlington Solar, LLC	Halifax County	3/17/2021		20.0
Powhatan Solar I, LLC	Powhatan County	4/2/2021		18.0
Moody Creek Solar, LLC	Charlotte County	6/1/2021		150.0
Pigeon Run Solar, LLC	Campbell County	8/4/2021		60.0
Foxglove Solar, LLC	Frederick County	8/4/2021		75.0
Stratford Solar Center, LLC	Suffolk City	9/15/2021		15.0
Shockoe Solar, LLC	Pittsylvania County	10/21/2021		60.0
			Total (MW):	**2,175.9**

Third Party Power Purchase Agreements under Development

Project	Location	MW AC
Cumberland Solar	Prince Edward County	1.5
Rappahannock Solar	Lancaster County	1.5
Southern Current - Twelve Oaks Solar	Nottoway County	1.5
Southern Current - Ten Oaks Solar	Nottoway County	1.5
Southern Current - Cow Solar	Mecklenburg County	1.5
Augusta Co PS_Cassell ES	Augusta County	0.30
Augusta Co PS_Fort Defiance HS	Augusta County	0.47
Augusta Co PS_Riverheads ES	Augusta County	0.29
Augusta Co PS_Riverheads HS	Augusta County	0.11
Augusta Co PS_Wilson ES	Augusta County	0.37
Augusta Co PS_Wilson MS	Augusta County	0.32
Daniels Run Peace Church	Fairfax	0.01
Eastern Mennonite University II	Harrisonburg	0.07
InterChange_Black Ice	Harrisonburg	0.53
InterChange_Blue Stripe	Harrisonburg	0.72
InterChange_C Pad 2	Rockingham County	0.11
InterChange_Port Services	Warren County	0.28
Richmond PS_Broad Rock ES	Richmond	0.18
Richmond PS_GH Reid ES	Richmond	0.15
Richmond PS_Huguenot HS	Richmond	0.63
Richmond PS_JB Fisher ES	Richmond	0.14
Richmond PS_JH Blackwell ES	Richmond	0.18
Richmond PS_L Holton ES	Richmond	0.17

Richmond PS_LM Brown MS	Richmond	0.29
Richmond PS_MJ Jones ES	Richmond	0.15
Richmond PS_ML King Jr. MS	Richmond	0.54
Richmond PS_Oak Grove ES	Richmond	0.18
Shenandoah Uni. - Athletic Bldg	Winchester	0.34
Shenandoah Uni. - Library	Winchester	0.04
Shenandoah Uni. - Theater	Winchester	0.08
S-Power	Spotsylvania	500
	Total (MW):	**514.1**

APPENDIX E

Active Solar Energy Projects
in the PJM New Services Queue

Active Solar Energy Projects in the PJM New Services Queue

Name	Capacity (MW)	County	Transmission Owner	Feasibility Study Status	System Impact Study Status	Facilities Study Status	Projected In Service Date
Elmont 115kV	80	Hanover	Dominion	complete	complete	complete	12/31/2020
Morrisville 230 kV	200	Fauquier	Dominion	complete	complete	complete	11/2/2020
Axton 138 kV	66	Henry	AEP	complete	complete	complete	12/15/2021
Franklin 115kV	91	Southampton	Dominion	complete	complete	complete	12/31/2022
Brink 115kV	80	Greensville	Dominion	complete	complete	complete	9/1/2023
Buggs Island-Chase City 115kV	20	Mecklenburg	Dominion	complete	complete	complete	2/3/2022
Buggs Island-Chase City 115kV	20	Mecklenburg	Dominion	complete	complete	complete	2/3/2022
Buggs Island-Chase City 115kV	20	Mecklenburg	Dominion	complete	complete	complete	2/3/2022
Reams 115kV	80	Dinwiddie	Dominion	complete	complete	complete	12/31/2022
Waverly #2 DP 115kV	50	Sussex	Dominion	complete	complete	complete	9/16/2022
Altavista-Mt. Airy 69kV	42	Pittsylvania	Dominion	complete	complete	complete	12/1/2022
Harmony Village-Shackleford 115kV	50	King and Queen	Dominion	complete	complete	complete	12/31/2022
Locust Grove-Paytes 115kV	62.5	Orange	Dominion	complete	complete	complete	7/1/2022
Halifax-Mt. Laurel 115kV	51	Halifax	Dominion	complete	complete	complete	7/15/2022
Brandy-Remington 115kV	60	Culpeper	Dominion	complete	complete	complete	12/16/2023
Septa 500kV	240	Isle of Wight	Dominion	complete	complete	complete	1/1/2023
Halifax-Person 230kV	29.2	Halifax	Dominion	complete	complete	complete	12/16/2022
Crystal Hill-Halifax 115kV	44.7	Halifax	Dominion	complete	complete	complete	6/15/2022
Grassfield-Great Bridge 115kV	150	City of Chesapeake	Dominion	complete	complete	complete	12/31/2022
Ivor-Oak Ridge 115kV	85	Isle of Wight	Dominion	complete	complete	complete	6/1/2022

Halifax-Person 230kV	50	Halifax	Dominion	complete	complete	complete	12/31/2022
Harmony Village-Shackleford 115kV	70	King and Queen	Dominion	complete	complete	complete	12/31/2022
Jacksons Ferry 138kV	75	Wythe	AEP	complete	complete	complete	12/1/2022
Crystal Hill-Halifax 115 kV	64.7	Halifax	Dominion	complete	complete	complete	6/15/2022
Halifax-Person 230 kV	75.1	Halifax	Dominion	complete	complete	complete	12/16/2022
Bakers Pond-Ivor 115kV	68	Sussex	Dominion	complete	complete	complete	9/1/2023
Page-Bethel 138 kV	100	Page	APS	complete	complete	complete	12/31/2023
Sedge Hill-Person 230 kV	70	Halifax	Dominion	complete	complete	complete	12/31/2022
Meadow Brook-Strasburg 138 kV	75	Frederick	APS	complete	complete	complete	10/31/2023
Harmony Village-Shackleford 115 kV	90	King and Queen	Dominion	complete	complete	complete	12/31/2022
Myrtle-Windsor DP 115kV	51	Isle of Wight	Dominion	complete	complete	complete	12/31/2024
Barterbrook-Stuarts Draft 115 kV	83	Augusta	Dominion	complete	complete	complete	10/31/2023
Poland Rd-Runway DP 230kV	100	Loudoun	Dominion	complete	complete	complete	12/31/2023
Septa 500kV	240	Isle of Wight	Dominion	complete	complete	In Progress	10/1/2019
Hopewell-Surry 230 kV	150	Surry	Dominion	complete	complete	In Progress	9/30/2019
Clover-Sedge Hill 230 kV	64.2	Halifax	Dominion	complete	complete	In Progress	9/2/2019
Briery-Clover 230 kV	105	Mecklenburg	Dominion	complete	complete	In Progress	9/2/2019
Kings Dominion DP 115 kV	74	King William	Dominion	complete	complete	In Progress	12/31/2019
Hopewell-Surry 230 kV	150	Surry	Dominion	complete	complete	In Progress	12/31/2020
Clover-Sedge Hill 230 kV	80	Halifax	Dominion	complete	complete	In Progress	12/31/2020
Stonewall-Long Mountain 69 kV	55	Appomattox	AEP	complete	complete	In Progress	12/31/2020
Hopewell-Surry 230 kV	7.6	Surry	Dominion	complete	complete	In Progress	11/1/2019
Hopewell-Surry 230 kV	52.1	Surry	Dominion	complete	complete	In Progress	9/30/2019

East Danville-Roxborough 230 kV	96	Pittsylvania	AEP	complete	complete	In Progress	6/1/2020
E. Danville-Roxborough 230 kV	54	Pittsylvania	AEP	complete	complete	In Progress	6/1/2020
Chase City-Lunenburg 115 kV	130	Lunenburg	Dominion	complete	complete	In Progress	10/31/2020
Boydton DP-Kerr Dam 115 kV	80	Mecklenburg	Dominion	complete	complete	In Progress	6/1/2021
Central-Chase City 115kV	149.5	Charlotte	Dominion	complete	complete	In Progress	3/31/2021
Garner DP-Lancaster 115 kV	86	Lancaster	Dominion	complete	complete	In Progress	11/30/2021
Wurno 138kV	120	Pulaski	AEP	complete	complete	In Progress	6/1/2021
Morgans Cut-Glen Lyn 138kV	100	Pulaski	AEP	complete	complete	In Progress	11/1/2020
Clover-Sedge Hill 230kV	83	Halifax	Dominion	complete	complete	In Progress	9/2/2019
Red House-South Creek 115 kV	60	Appomattox	Dominion	complete	complete	In Progress	12/15/2020
Rockcastle 138 kV	102.1	Bedford	AEP	complete	complete	In Progress	5/3/2021
Carson-Rogers Rd 500 kV	500	Greensville	Dominion	complete	complete	In Progress	12/1/2021
Carson-Rogers Road 500 kV	400	Greensville	Dominion	complete	complete	In Progress	12/1/2021
Bakers Pond-Bell Ave 115 kV	75	Sussex	Dominion	complete	complete	In Progress	6/1/2022
Holland-Union Camp 115 kV	50	Isle of Wight	Dominion	complete	complete	In Progress	4/1/2021
Bremo-Scottsville 138 kV	149.5	Buckingham	AEP	complete	complete	In Progress	8/31/2021
Kerr Dam-Ridge Rd 115 kV	90	Mecklenburg	Dominion	complete	complete	In Progress	12/1/2021
Disputanta-Poe 115 kV	100	Prince George	Dominion	complete	complete	In Progress	12/1/2021
Remington-Gordonsville 230 kV	149	Culpeper	Dominion	complete	complete	In Progress	10/23/2020
Garner-Northern Neck 115 kV	127	City of Richmond	Dominion	complete	complete	In Progress	10/23/2020

Ladysmith CT-St. Johns 230 kV	120	Caroline	Dominion	complete	complete	In Progress	12/1/2021
Ladysmith CT-St. Johns 230 kV	120	Caroline	Dominion	complete	complete	In Progress	12/1/2021
Carson-Suffolk 500 kV	800	Sussex	Dominion	complete	complete	In Progress	12/31/2021
Harmony Village-Shackleford 115 kV	20	Gloucester	Dominion	complete	complete	In Progress	12/21/2020
Harmony Village-Shackleford 115 kV	80	Gloucester	Dominion	complete	complete	In Progress	12/21/2020
Four Rivers-Hanover 230 kV	285	Hanover	Dominion	complete	complete	In Progress	12/31/2022
Smith Mountain-E. Danville 138 kV	150	Pittsylvania	AEP	complete	complete	In Progress	9/30/2021
Harrowgate-Locks 115kV	120	Chesterfield	Dominion	complete	complete	In Progress	12/1/2022
Grottoes-Merck 115kV	50	Rockingham	Dominion	complete	complete	In Progress	12/30/2022
Carson-Rawlings 500 kV	290	Sussex	Dominion	complete	complete	In Progress	12/31/2021
Clubhouse-Sappony 230 kV	149	Sussex	Dominion	complete	complete	In Progress	12/31/2021
Ridgeway-Solite 69 kV	50	Henry	AEP	complete	complete	In Progress	12/15/2021
Carson-Septa 500 kV	150	Sussex	Dominion	complete	complete	In Progress	9/15/2021
Kidds Store-Sherwood 115 kV	138	Albemarle	Dominion	complete	complete	In Progress	3/1/2022
Carson-Rogers Road 500 kV	300	Sussex	Dominion	complete	complete	In Progress	6/1/2022
Suffolk 115 kV	49	Accomack	Dominion	complete	complete	In Progress	11/30/2021
Axton-Danville 138 kV	201.1	Henry	AEP	complete	complete	In Progress	5/31/2022
Bakers Pond-Bell Ave 115 kV	75	Sussex	Dominion	complete	complete	In Progress	6/1/2022
Stockton 138 kV	90	Henry	AEP	complete	complete	In Progress	12/31/2022
Briery-Clover 230 kV	122	Mecklenburg	Dominion	complete	complete	In Progress	3/1/2021
Gladys DP-Stonemill Switching Station 69 kV	60	Campbell	Dominion	complete	complete	In Progress	9/1/2020

Shockoe DP-Chatham 69 kV	60	Pittsylvania	Dominion	complete	complete	In Progress	9/1/2020
Elk Run D.P.-Gainesville 230 kV	70	Fauquier	Dominion	complete	complete	In Progress	11/30/2021
Harrowgate 34 kV	20	Chesterfield	Dominion	complete	complete	In Progress	10/31/2022
Bartonsville-Meadow Brook 138 kV	70	Frederick	APS	complete	complete	In Progress	12/1/2022
St. Johns 115 kV	44	Caroline	Dominion	complete	complete	In Progress	12/1/2022
Myrtle-Windsor 115 kV	71	Isle of Wight	Dominion	complete	complete	In Progress	11/30/2021
Purdy Sw.-Reams 115 kV	82.5	Greensville	Dominion	complete	complete	In Progress	9/30/2021
Chase City 115 kV	49.9	Mecklenburg	Dominion	complete	complete	In Progress	6/1/2020
Curdsville-Willis Mtn 115 kV	100	Buckingham	Dominion	complete	complete	In Progress	9/15/2021
Clubhouse 230 kV	200	Greensville	Dominion	complete	complete	In Progress	6/30/2020
Hopewell-Surry 230 kV	150	Surry	Dominion	complete	complete	In Progress	9/29/2021
Claytor Lake-Edgemont 138 kV	126.7	Montgomery	AEP	complete	complete	In Progress	12/31/2022
Gladys-Stone Mill 69 kV	60.4	Campbell	Dominion	complete	complete	In Progress	9/30/2021
Grit DP-Perth 115 kV	102	Pittsylvania	Dominion	complete	complete	In Progress	4/1/2021
Grit DP-Perth 115 kV	127	Campbell	Dominion	complete	complete	In Progress	4/1/2021
Carson-Rawlings 500 kV	314	Dinwiddie	Dominion	complete	complete	In Progress	9/15/2022
Myrtle-Windsor 115 kV	91	Isle of Wight	Dominion	complete	complete	In Progress	11/30/2021
Garner DP-Lancaster 115 kV	131	Lancaster	Dominion	complete	complete	In Progress	11/30/2021
Berry Hill 138 kV	125	Pittsylvania	AEP	complete	complete	In Progress	11/25/2022
Brodnax-South Hill 115 kV	99.2	Mecklenburg	Dominion	complete	complete	In Progress	10/31/2021
Kings Dominion DP 115 kV	50	Caroline	Dominion	complete	complete	In Progress	12/16/2022
Carson-Rogers Rd 500 kV	394	Sussex	Dominion	complete	complete	In Progress	6/1/2022
Harrisburg-Endless Caverns 230 kV	73	Rockingham	Dominion	complete	complete	In Progress	12/31/2021

Louisa-South Anna 230 kV	150	Louisa	Dominion	complete	complete	In Progress	11/1/2021
Oak Grove-Dahlgren 230 kV	100	King George	Dominion	complete	complete	In Progress	11/30/2021
Gretna DP-Shockoe DP 69 kV	50	Mecklenburg	Dominion	complete	complete	In Progress	12/15/2020
Hayes-White Marsh 115 kV	150	Gloucester	Dominion	complete	complete	In Progress	12/31/2021
Clover-Rawlings 500 kV	100	Charlotte	Dominion	complete	complete	In Progress	7/1/2022
Bartonsville-Meadow Brook 138 kV	80	Frederick	APS	complete	complete	In Progress	12/1/2022
Fields 34.5kV	14.9	Greensville	Dominion	complete	complete	In Progress	11/30/2022
Kidds Store-Fort Union 115 kV	127.9	Fluvanna	Dominion	complete	complete	In Progress	6/30/2022
Jetersville-Ponton 115 kV	41	Amelia	Dominion	complete	complete	In Progress	12/1/2022
Louisa-South Anna 230 kV	127	Louisa	Dominion	complete	complete	In Progress	12/31/2022
Scottsville-Colleen 138 kV	55	Albemarle	AEP	complete	complete	In Progress	12/12/2022
St. Johns 115 kV	80	Hanover	Dominion	complete	complete	In Progress	10/27/2023
Louisa-North Anna 230 kV	94	Louisa	Dominion	complete	complete	In Progress	7/1/2021
Clover-Rawlings 500 kV	500	Halifax	Dominion	complete	complete	In Progress	12/31/2022
Ladysmith CT-St. Johns 230 kV	180	Caroline	Dominion	complete	complete	In Progress	12/1/2021
Wan 34.5 kV	19.9	Gloucester	Dominion	complete	complete	In Progress	10/15/2021
Plaintation Creek 69 kV	50	Northampton	ODEC	complete	complete	In Progress	6/1/2025
Louisa-North Anna 230 kV	150	Louisa	Dominion	complete	complete	In Progress	2/1/2023
Surry-Hopewell 230 kV	300	Surry	Dominion	complete	complete	In Progress	10/21/2021
Bartonsville-Meadow Brook 138 kV III	130	Frederick	APS	complete	complete	In Progress	12/1/2022
White Marsh 34.5 kV	20	Gloucester	Dominion	complete	complete	In Progress	11/1/2021

Oak Grove-Dahlgren 230 kV	134	King George	Dominion	complete	complete	In Progress	11/30/2021
Morgans Cut-Glen Lyn #2 138 kV	100	Pulaski	AEP	complete	complete	In Progress	3/28/2022
Hazel Hollow-Glen Lyn #1 138 kV	150	Pulaski	AEP	complete	complete	In Progress	3/28/2022
Clifford 138 kV	50	Amherst	AEP	complete	complete	In Progress	2/1/2022
Locks 34.5 kV	10	Dinwiddie	Dominion	complete	complete	In Progress	10/31/2022
Suffolk 115 kV	69	Accomack	Dominion	complete	complete	In Progress	11/30/2021
Jetersville-Ponton 115 kV	66	Amelia	Dominion	complete	complete	In Progress	12/1/2022
Bristers-Sowego 115 kV	80	Fauquier	Dominion	complete	complete	In Progress	12/12/2022
Garner-Northern Neck 115 kV	62	Richmond	Dominion	complete	complete	In Progress	12/1/2023
Madisonville 115 kV	150	Prince Edward	Dominion	complete	complete	In Progress	3/31/2022
Madisonville DP-Twitty's Creek 115 kV	167	Charlotte	Dominion	complete	complete	In Progress	5/31/2023
Harrowgate 34.5 kV	25	Chesterfield	Dominion	complete	complete	In Progress	12/12/2022
Locks 34.5 kV	25	Chesterfield	Dominion	complete	complete	In Progress	12/12/2022
Sedge Hill 115 kV	80	Halifax	Dominion	complete	complete	In Progress	3/12/2022
Fields 34.5 kV	25	Greensville	Dominion	complete	complete	In Progress	12/12/2022
St. Johns 115 kV	64	Caroline	Dominion	complete	complete	In Progress	12/12/2022
Scottsville-Colleen 138 kV	75	Albemarle	AEP	complete	complete	In Progress	12/12/2022
Surry-Hopewell 230 kV	89	Surry	Dominion	complete	complete	In Progress	8/3/2023
Hurley 69 kV	75	Buchanan	AEP	complete	complete	In Progress	12/1/2023
Fork Union-Mt. Eagle 230 kV	130	Fluvanna	Dominion	complete	complete	In Progress	12/15/2023
Mewdow Brook-Strasburg 138 kV II	75	Frederick	APS	complete	complete	In Progress	6/30/2022
Jetersville-Ponton 115 kV	86	Amelia	Dominion	complete	complete	In Progress	12/12/2023
Scottsville-Colleen 138 kV	95	Albemarle	AEP	complete	complete	In Progress	12/12/2023

North Anna-Louisa 230 kV	75	Louisa	Dominion	complete	complete	In Progress	10/1/2023
Elk Run D.P.-Gainesville 230 kV	90	Fauquier	Dominion	complete	complete	In Progress	11/30/2021
Garner DP-Lancaster 115 kV	176	Lancaster	Dominion	complete	complete	In Progress	12/31/2022
Redbud-Gaylord 34.5 kV	36	Frederick	APS	complete	complete	In Progress	12/1/2023
Hickman-River Bend 69 kV	50	Pulaski	AEP	complete	complete	In Progress	6/30/2023
Edinburg 115 kV	25.6	Shenandoah	Dominion	complete	complete	In Progress	8/1/2022
North Anna-Ladysmith 500 kV	128	Spotsylvania	Dominion	complete	complete	In Progress	12/1/2024
Kings Dominion DP 115 kV	100	King William	Dominion	complete	complete	In Progress	12/1/2024
Garner-Lancaster 115 kV	60	Richmond	Dominion	complete	complete	In Progress	12/1/2024
Garner DP-Lancaster 115 kV	30	Lancaster	Dominion	complete	complete	In Progress	12/1/2024
Garner DP-Lancaster 115 kV	70	Lancaster	Dominion	complete	complete	In Progress	12/1/2024
Lone Pine 115 kV	20	Nottoway	Dominion	complete	complete	In Progress	10/15/2021
Lone Pine 115 kV	20	Nottoway	Dominion	complete	complete	In Progress	10/15/2021
Lone Pine 115 kV	20	Nottoway	Dominion	complete	complete	In Progress	10/15/2021
Lone Pine 115 kV	20	Nottoway	Dominion	complete	complete	In Progress	10/15/2021
Lone Pine 115 kV	20	Nottoway	Dominion	complete	complete	In Progress	10/15/2021
Millville-Old Chapel 138 kV	100	Clarke	APS	complete	complete	In Progress	6/30/2023
Millville-Old Chapel 138 kV	100	Clarke	APS	complete	complete	In Progress	6/30/2023
Valley 230 kV	150	Augusta	Dominion	complete	complete	In Progress	12/31/2023
Grottoes 115 kV	150	Augusta	Dominion	complete	complete	In Progress	12/31/2023
Dunnsville 34.5 kV	20	Essex	Dominion	complete	complete	In Progress	6/1/2022
Louisa-North Anna 230 kV	118	Louisa	Dominion	complete	complete	In Progress	7/1/2022

Mount Jackson DP 115 kV	20	Shenandoah	Dominion	complete	complete	In Progress	12/1/2022
Hickory 34.5 kV	20	City of Chesapeake	Dominion	complete	complete	In Progress	3/1/2022
Fort Pickett DP 34.5 kV	20	Dinwiddie	Dominion	complete	complete	In Progress	3/1/2022
Boykins 34.5 kV	20	Southampton	Dominion	complete	complete	In Progress	3/1/2022
Double Toll Date-Old Chapel 138 kV	50	Clarke	APS	complete	complete	In Progress	1/2/2023
Lexington-Dooms 230 kV	200	Augusta	Dominion	complete	complete	In Progress	12/29/2023
Orange 34.5 kV	14	Orange	Dominion	complete	complete	In Progress	12/19/2022
Somerset 34.5 kV	15.6	Orange	Dominion	complete	complete	In Progress	12/28/2022
Gordonsville 34.5 kV	15.6	Louisa	Dominion	complete	complete	In Progress	11/11/2022
Suffolk 230 kV	50	City of Suffolk	Dominion	complete	complete	In Progress	9/1/2023
Fields 34.5 kV	13.5	Greensville	Dominion	complete	complete	In Progress	12/12/2022
Bartonsville-Meadowbrook 138 kV IV	170	Frederick	APS	complete	complete	In Progress	12/12/2023
Buckner 34.5 kV	20	Louisa	Dominion	complete	complete	In Progress	10/21/2022
Powhatan 34.5 kV	17	Powhatan	Dominion	complete	complete	In Progress	6/1/2023
Mountain Run-Mitchell 115 kV	150	Culpeper	Dominion	complete	complete	NA	10/2/2019
West Berwick 12 kV	2	City of Lynchburg	PPL	complete	complete	NA	6/21/2022
Mount Eagle 34.5kV	12.5	Albemarle	Dominion	complete	complete	NA	12/31/2022
North Shenandoah-Stanley 34.5 kV	20	Page	APS	complete	complete	NA	8/29/2021
Harmony Village-Shackleford 115 kV	110	King and Queen	Dominion	complete	complete	NA	12/31/2022
Winterpock 34.5 kV	20	Chesterfield	Dominion	complete	complete	NA	12/1/2023
Powhatan 34.5 kV	18	Powhatan	Dominion	complete	complete	NA	12/1/2023
Endless Caverns 34.5 kV	15.7	Rockingham	Dominion	complete	complete	NA	4/25/2022
Endless Caverns 34.kV	15.7	Rockingham	Dominion	complete	complete	NA	4/25/2022

Louisa-South Anna 230 kV	105.2	Louisa	Dominion	complete	complete	NA	12/1/2021
Smithfield 34.5 kV	20	Isle of Wight	Dominion	complete	complete	NA	12/31/2023
Harmony Village-Shackleford 115 kV	130	King and Queen	Dominion	complete	complete	NA	12/31/2022
Poolesville 34.5 kV	20	Surry	Dominion	complete	complete	NA	6/1/2022
Poolesville 34.5 kV	20	Surry	Dominion	complete	complete	NA	6/1/2022
Locust Grove-Paytes 115 kV	62.5	Orange	Dominion	complete	complete	NA	7/1/2022
Iron Bridge 34 kV	20	Chesterfield	Dominion	complete	complete	NA	11/30/2022
Tyler 34 kv	20	Chesterfield	Dominion	complete	complete	NA	10/31/2022
Harmony Village-Shackleford 115 kV	149.9	King and Queen	Dominion	complete	complete	NA	12/31/2023
Suffolk 34.5 kV	15	City of Suffolk	Dominion	complete	complete	NA	2/28/2023
Poolesville 34 kV	20	Surry	Dominion	complete	complete	NA	2/28/2023
Welco 34.5 kV	20	Halifax	Dominion	complete	complete	NA	11/30/2022
Tyler 34.5 kV	20	Chesterfield	Dominion	complete	complete	NA	10/31/2022
Suffolk 34.5 kV	20	City of Suffolk	Dominion	complete	complete	NA	12/31/2022
Iron Bridge 34.5 kV	25	Chesterfield	Dominion	complete	complete	NA	11/30/2022
Tyler 34.5 kV	25	Chesterfield	Dominion	complete	complete	NA	10/31/2022
Franklin 13.2 kV	7.1	Southampton	Dominion	complete	complete	NA	5/31/2022
Lightfoot 34.5 kV	20	James City	Dominion	complete	complete	NA	12/1/2022
Dunnsville 34.5 kV	20	Essex	Dominion	complete	complete	NA	3/31/2023
Tyler 34.5 kV	25	Chesterfield	Dominion	complete	complete		12/12/2022
Trexlertown 12 kV	3	City of Lynchburg	PPL	complete	complete		6/21/2022
Wallops Island 69 kV	20	Accomack	ODEC	complete	In Progress		12/1/2020
Victoria DP-Martin DP 115 kV	150	Nottoway	Dominion	complete	In Progress		1/1/2023
Jetersville-Ponton 115 kV	106.3	Amelia	Dominion	complete	In Progress		12/1/2022
Purdy-Sapony 115 kV	150	Greensville	Dominion	complete	In Progress		10/15/2024
Briery-Clover 230 kV	107	Mecklenburg	Dominion	complete	In Progress		12/1/2024

Mount Laurel-Barnes Junction 115 kV	90	Halifax	Dominion	complete	In Progress		12/1/2024
Gladstone 138 kV	100	Nelson	AEP	complete	In Progress		12/1/2024
Hopewell-Surry 230kV	20	Surry	Dominion	complete	In Progress		10/15/2021
Hopewell-Surry 230 kV	20	Surry	Dominion	complete	In Progress		10/15/2021
Hopewell-Surry 230 kV	20	Surry	Dominion	complete	In Progress		10/15/2021
Hopewell-Surry 230 kV	20	Surry	Dominion	complete	In Progress		10/15/2021
Hopewell-Surry 230 kV	20	Surry	Dominion	complete	In Progress		10/15/2021
Briery-Clover 230 kV	149.5	Prince Edward	Dominion	complete	In Progress		11/1/2023
Carson-Suffolk 500 kV	500	Sussex	Dominion	complete	In Progress		6/30/2023
Brunswick-Gasburg 69 kV	50	Sussex	Dominion	complete	In Progress		6/30/2023
Pamplin-Chase City 115 kV	150	Charlotte	Dominion	complete	In Progress		6/30/2023
Carson-Suffolk 500 kV	500	Sussex	Dominion	complete	In Progress		6/30/2023
Fentress-Sligo 230 kV	192	City of Chesapeake	Dominion	complete	In Progress		12/31/2024
Twitty's Creek 115 kV	20	Charlotte	Dominion	complete	In Progress		3/1/2022
Twitty's Creek 115 kV	20	Charlotte	Dominion	complete	In Progress		6/1/2022
Twitty's Creek 115 kV	20	Charlotte	Dominion	complete	In Progress		6/1/2022
Fork Union 115 kV	70	Fluvanna	Dominion	complete	In Progress		9/30/2023
Chase City-Central 115 kV	125	Charlotte	Dominion	complete	In Progress		12/1/2024
Lake of the Woods DP-Wilderness DP 115 kV	150	Orange	Dominion	complete	In Progress		6/30/2023
Sherwill 69 kV	75	Campbell	AEP	complete	In Progress		6/30/2024
Dryburg 115 kV	45	Halifax	Dominion	complete	In Progress		12/1/2023
Boykins-Murphy 115 kV	62.5	Southampton	Dominion	complete	In Progress		12/1/2023
Briery DP-Clover 230 kV	100	Lunenburg	Dominion	complete	In Progress		12/1/2024
Clover-Rawlings 500 kV	200	Lunenburg	Dominion	complete	In Progress		12/1/2024
Twitty's Creek 115 kV	20	Charlotte	Dominion	complete	In Progress		6/1/2022
South Hill-Bordnax 115 kV	69.5	Mecklenburg	Dominion	complete	In Progress		7/1/2024

Chase City-Drakes Branch 115 kV	118.6	Mecklenburg	Dominion	complete	In Progress		12/31/2024
Danieltown DP–Brunswick 69 kV	46.8	Brunswick	Dominion	complete	In Progress		12/31/2024
Tasley - Oak Hall 69 kV	58.7	Accomack	ODEC	complete	In Progress		12/31/2024
Curdsville DP-Willis Mt. 115 kV	200	Buckingham	Dominion	complete	In Progress		12/31/2024
Palmer Springs 115 kV	75	Mecklenburg	Dominion	complete	In Progress		12/31/2023
Palmer Springs 115 kV	75	Mecklenburg	Dominion	complete	In Progress		12/31/2023
Rawlings-Clover 500 kV	150	Brunswick	Dominion	complete	In Progress		7/1/2024
Rawlings-Clover 500 kV	150	Brunswick	Dominion	complete	In Progress		7/1/2024
Poolesville-Winchester 230 kV	54	Isle of Wight	Dominion	complete	In Progress		12/12/2023
Bakers Pond DP 115 kV	60	Prince George	Dominion	complete	In Progress		10/1/2024
Mount Airy-Chatham 69 kV	50	Pittsylvania	Dominion	complete	In Progress		10/1/2024
Caroline Pines 22 kV	20	Hanover	Dominion	complete	In Progress		10/21/2022
Amherst-Riverville138 kV	75	Amherst	AEP	complete			12/1/2024
Oak Green 115 kV	80	Orange	Dominion	In Progress			6/30/2023
Oak Green 115 kV	20	Orange	Dominion	In Progress			6/30/2023
St. Johns DP 115 kV	20	Essex	Dominion	In Progress			9/30/2022
Garner-Lancaster 115 kV	196	Lancaster	Dominion	In Progress			12/31/2022
Lanexa-Dunnsville 230 kV	100	King William	Dominion	In Progress			11/15/2023
Emporia-Pleasant Hill 115 kV	150	Greensville	Dominion	In Progress			10/1/2024
St. Johns DP 115 kV	20	Louisa	Dominion	In Progress			3/31/2023
Gore 138 kV	20	Frederick	APS	In Progress			5/31/2022
Harmony Village-White Marsh 115 kV	70	Gloucester	Dominion	In Progress			6/3/2024
Clubhouse-Lakeview 230 kV	80	Greensville	Dominion	In Progress			6/3/2024
St Johns DP 115 kV	41	Caroline	Dominion	In Progress			10/31/2023

Rockcastle 138 kV	20	Bedford	AEP	In Progress			5/30/2022
Heritage-Wake 500 kV	50	Brunswick	Dominion	In Progress			12/1/2025
Heritage-Wake 500 kV	100	Brunswick	Dominion	In Progress			12/1/2025
Heritage-Wake 500 kV	150	Brunswick	Dominion	In Progress			12/1/2025
Chickhominy-Surry 500 kV	325	Charles City	Dominion	In Progress			10/1/2024
Clover-Rawlings 500 kV	700	Charlotte	Dominion	In Progress			6/30/2024
Mt. Jackson DP-Mt. Jackson 115 kV	75	Shenandoah	Dominion	In Progress			12/30/2022
Colonial Trail-Hopewell 230 kV	100	Prince George	Dominion	In Progress			12/1/2024
Hopewell 34.5 kV (Circuit 313)	20	Prince George	Dominion	In Progress			12/8/2023
Oak Hall-Perdue 69 kV	20	Accomack	ODEC	In Progress			6/1/2024
Perth 34.5 kV Substation (Circuit 408)	14.5	Campbell	Dominion	In Progress			2/6/2023
Perth 34.5 kV Substation (Circuit 404)	15.2	Halifax	Dominion	In Progress			3/24/2023
Crystal Hill - Halifax 115 kV	64.7	Halifax	Dominion	In Progress			6/30/2022
Sedge Hill - Person 230 kV	75.1	Halifax	Dominion	In Progress			6/30/2022
Shackleford-Harmony 115 kV	149.9	King and Queen	Dominion	In Progress			12/31/2023
South Creek 69 kV	52.4	Appomattox	Dominion	In Progress			12/31/2023
Surry-Chuckatuck 230 kV	70	Isle of Wight	Dominion	In Progress			6/3/2024
Page-Bethel 138 kV	100	Pulaski	APS	In Progress			6/30/2022
Trices Lake - James River Tap 115 kV	100	Cumberland	Dominion	In Progress			2/2/2024
Banister-Bear Skin 138 kV	150	Pittsylvania	AEP	In Progress			2/2/2024
Clinch River-Copper Ridge 138 kV	95	Russell	AEP	In Progress			12/31/2022

Buckingham-Bremo 230 kV	70	Buckingham	Dominion	In Progress			12/31/2022
Lunenburg-Nutbush 115 kV	60	Lunenburg	Dominion	In Progress			7/3/2024
Remington 34.5 kV	14.1	Fauquier	Dominion	In Progress			12/30/2022
Doubs-Bismark 500 kV	200	Frederick	Dominion	In Progress			12/31/2022
Farmville-Bucking 230 kV	149.9	Cumberland	Dominion	In Progress			3/1/2024
Turner 34.5 kV	20	Henrico	Dominion	In Progress			12/31/2023
Briery-Clover 230 kV	80	Prince Edward	Dominion	In Progress			2/25/2024
Birchwood-NUG 230 kV	55	King George	Dominion	In Progress			10/10/2023
Greenwood DP - St. Johns DP 115 kV	70	Louisa	Dominion	In Progress			6/30/2024
Greenwood DP - St. Johns DP 115 kV	70	Louisa	Dominion	In Progress			6/30/2024
Gary D.P Tap - Gary D.P 115 kV	80	Lunenburg	Dominion	In Progress			12/1/2025
Red House D.P - Sugar Hill 115 kV	60	Charlotte	Dominion	In Progress			12/1/2025
Garner DP-Lancaster 115 kV	176	Lancaster	Dominion	In Progress			12/31/2023
Whitehouse-Lone Gum 138 kV	102.1	Bedford	AEP	In Progress			6/30/2022
Carson – Rogers Road 500 kV	100	Accomack	Dominion	In Progress			3/1/2024
Sherwood - Kidds Store 115 kV	80	Fluvanna	Dominion	In Progress			3/4/2024
Crystal Hill - Perth 115 kV	149	Halifax	Dominion	In Progress			12/1/2025
Lake View - Clubhouse 230 kV	175	Greensville	Dominion	In Progress			12/1/2025
Dryburg 115 kV	56	Halifax	Dominion	In Progress			12/1/2023
Wurno 138 kV	120	Pulaski	AEP	In Progress			12/31/2023
Suffolk - Sunbury 230 kV	125	City of Suffolk	Dominion	In Progress			12/1/2025

Clubhouse – Freeman 115 kV	100	Greensville	Dominion	In Progress			10/15/2024
Lanexa – Dunnsville 230 kV	100	New Kent	Dominion	In Progress			12/31/2023
VEPCO South Creek - Pamplin 115 kV	100	Appomattox	Dominion	In Progress			12/1/2025
Scottsville - CVEC Delivery 69 kV Point	45	Buckingham	AEP	In Progress			12/1/2025
Vepco Heritage - Wake 500 kV	100	Greensville	Dominion	In Progress			12/1/2025
Cargill 115 kV (SVEC)	20	Rockingham	Dominion	In Progress			10/15/2023
Rohrsburg 12 kV	3	City of Lynchburg	PPL	In Progress			6/21/2022
Watkins Corner 34.5 kV	20	Southampton	Dominion	In Progress			11/1/2023
Axton 138 kV	350	Henry	AEP	In Progress			10/31/2025
Wakefield - Waverly 115 kV	59	Sussex	Dominion	In Progress			2/29/2024
Waverly 115 kV	85	Sussex	Dominion	In Progress			2/29/2024
Sapony 230 kV	170	Sussex	Dominion	In Progress			2/29/2024
Sapony 34.5 kV	20	Sussex	Dominion	In Progress			11/1/2023
Mount Airy 138 kV	45	Wythe	AEP	In Progress			12/31/2023
Carson - Rogers Road 500 kV	500	Sussex	Dominion	In Progress			12/31/2023
Monarch I Interconnection 500 kV	400	Greensville	Dominion	In Progress			12/31/2023
Twittys Creek - Madisonville 115 kV	100	Charlotte	Dominion	In Progress			12/31/2024
Twittys Creek - Madisonville 115 kV	125	Charlotte	Dominion	In Progress			12/31/2024
Twittys Creek - Madisonville 115 kV	140	Charlotte	Dominion	In Progress			12/31/2024
Lanexa - Dunnsville 230 kV	88	New Kent	Dominion	In Progress			10/15/2024

Wythe - Glen Lyn 138 kV	150	Wythe	AEP	In Progress			10/31/2024
Sedge Hill – Person 230 kV	80	Halifax	Dominion	In Progress			12/31/2025
Westmoreland – Oak Grove 230 kV	80	Westmoreland	Dominion	In Progress			12/31/2025
Phillipsburg Bus II 34.5 kV	5	Prince Edward	PENELEC	In Progress			6/21/2022
Crewe - Victoria DP 115 kV	60	Nottoway	Dominion	In Progress			12/1/2025
Dry Bread 230 kV	85	Greensville	Dominion	In Progress			12/1/2025
Double Toll Gate 138 kV	100	Clarke	APS	In Progress			12/30/2024
Fork Union 230 kV	85	Fluvanna	Dominion	In Progress			3/1/2024
Bakers Pond 115 kV	100	Prince George	Dominion	In Progress			12/31/2023
Oak Grove – Saunders DP 230 kV	100	Westmoreland	Dominion	In Progress			12/31/2024
Bustleburg Tap - Fairfield DP 115 kV	140	Rockbridge	Dominion	In Progress			10/31/2024
Harrisonburg - Endless Caverns 230 kV	150	Rockingham	Dominion	In Progress			10/31/2024
Clubhouse - Jarratt 115 kV	80	Greensville	Dominion	In Progress			6/3/2024
Perth - Crystal Hill 115 kV	65	Halifax	Dominion	In Progress			6/3/2024
North Shenandoah – Merck 115 kV	70	Rockingham	Dominion	In Progress			6/3/2024
Suffolk - Earleys 230 kV	70	City of Suffolk	Dominion	In Progress			6/3/2024
Gasburg 69 kV	50	Brunswick	Dominion	In Progress			9/24/2024
Brunswick Collector - Wake 500 kV	400	Brunswick	Dominion	In Progress			3/29/2024
Scottsville - Bremo 138 kV	50	Buckingham	AEP	In Progress			3/25/2024
Rawlings-Clover 500 kV	150	Brunswick	Dominion	In Progress			10/1/2024
Rawlings-Clover 500 kV	150	Brunswick	Dominion	In Progress			10/1/2024

Bremo - Cartersville 230 kV	115	Cumberland	Dominion	In Progress			6/30/2026
Double Toll Gate - Meadowbrook 138 kV	90	Frederick	APS	In Progress			10/31/2024
Broadford 138 kV	200	Smyth	AEP	In Progress			10/31/2025
Huffman 138 kV	150	Carroll	AEP	In Progress			10/31/2024
Edgemont 138 kV	94	Montgomery	AEP	In Progress			6/1/2024
Skimmer - Abert 69 kV	37	Amherst	AEP	In Progress			6/1/2024
St. Johns - Dunbrook 34.5 kV	20	King and Queen	Dominion	In Progress			11/1/2023
Unionville - Locust 115 kV	80	Orange	Dominion	In Progress			11/15/2023
Unionville - Locust Grove 115 kV	40	Orange	Dominion	In Progress			11/15/2023
Boydton Plank Road 115 kV	200	Mecklenburg	Dominion	In Progress			4/1/2025
Gary DP - Lunenburg 115 kV	125	Lunenburg	Dominion	In Progress			4/1/2025
Heritage 500 kV	270	Brunswick	Dominion	In Progress			4/1/2025
Palmer Springs 115 kV	80	Mecklenburg	Dominion	In Progress			4/1/2025
Five Forks - Palmer Springs 115 kV	80	Mecklenburg	Dominion	In Progress			7/30/2025
Wakesfield - Poolesville 34.5 kV	20	Surry	Dominion	In Progress			11/1/2023
Loudoun - Meadow Brook 500 kV	150	Rappahannock	Dominion	In Progress			12/31/2025
South Anna - Louisa 230 kV	202	Madison	Dominion	In Progress			6/1/2024
Bartonsville-Meadowbrook 138 kV	220	Frederick	APS	In Progress			12/12/2023
Cunningham - Elmont 500 kV	149	Fluvanna	Dominion	In Progress			6/30/2026

Cunningham - Elmont 500 kV II	149	Fluvanna	Dominion	In Progress			6/30/2026
Kidds Store – Fork Union 115 kV	38	Fluvanna	Dominion	In Progress			6/30/2026
Providence Forge-Turner 115kV	154	Charles City	Dominion	In Progress			9/1/2024
Boydton Plank Road 115 kV	260	Mecklenburg	Dominion	In Progress			4/1/2025
Red House D.P. 115kV	100	Campbell	Dominion	In Progress			11/15/2026
TBD 34.5 kV	20	Powhatan	Dominion	In Progress			7/31/2022
Lick Fork 69 kV	20	Dickenson	AEP	In Progress			3/31/2024
Lick Fork 69 kV	20	Dickenson	AEP	In Progress			3/31/2024
Harmony Village 34.5kV	20	Middlesex	Dominion	In Progress			12/20/2024
Surry - Hopewell 230 kV	80	Surry	Dominion	In Progress			11/15/2024
SedgeHill - Person 230 kV	100	Halifax	Dominion	In Progress			6/1/2025
SedgeHill - Person 230 kV	160	Halifax	Dominion	In Progress			6/1/2025
Jubal Early - Pipers Gap 138 kV	20	Carroll	AEP	In Progress			6/1/2025
Jubal Early - Pipers Gap 138 kV	60	Carroll	AEP	In Progress			6/1/2025
Pinewood - St. Johns 115 kV	75	Caroline	Dominion	In Progress			6/1/2025
Winterpock 34.5kV	26	Chesterfield	Dominion	In Progress			10/31/2023
Winterpock 34.5kV	26	Chesterfield	Dominion	In Progress			10/31/2023
Bismark-Doubs 500 kV	100	Frederick	Dominion	In Progress			12/31/2022
Saltville - Tazewell 138 kV	100	Tazewell	AEP	In Progress			12/31/2024
Peter's Mountain 138 kV	120	Giles	AEP	In Progress			12/31/2024
Oak Level - Tank Hill 138 kV	65	Franklin	AEP	In Progress			12/20/2024
Pinewood - St Johns 115 kV	80	Caroline	Dominion	In Progress			6/1/2026

Pinewood - St Johns 115 kV II	120	Caroline	Dominion	In Progress			6/1/2026
Greenbush 69kV	20	Accomack	ODEC	In Progress			12/20/2024
Columbia DP 115kV	20	Goochland	Dominion	In Progress			12/20/2024
Columbia DP 115kV	20	Goochland	Dominion	In Progress			12/20/2024
Cliffview 34.5 kV	20	Carroll	AEP	In Progress			12/31/2022
Buckhorn 34.5 kV	16.7	Tazewell	AEP	In Progress			12/31/2022
Westlake 34.5 kV	20	Franklin	AEP	In Progress			12/31/2022
Sheffield 34.5 kV	20	Henry	AEP	In Progress			12/31/2022
Ridgeway 34.5 kV	18.8	Henry	AEP	In Progress			12/31/2022
Wills Gap 34.5 kV	10	Carroll	AEP	In Progress			12/31/2022
Remington - Morrisville 34.5 kV	20	Fauquier	Dominion	In Progress			12/31/2022
Edinburg 34.5 kV	20	Shenandoah	Dominion	In Progress			12/31/2022
Westlake 34.5 kV	9	Franklin	AEP	In Progress			12/31/2022
Stuart 34.5	12	Patrick	AEP	In Progress			12/31/2022
Peak Creek 34.5	11.5	Pulaski	AEP	In Progress			12/31/2022
Remington 34.5 kV	12	Fauquier	Dominion	In Progress			12/31/2022
Powhatan - Powhatan DP 24.94 kV	5	Powhatan	Dominion	In Progress			12/31/2022
Benn's Church - Smithfield 34.5 kV	20	Isle of Wight	Dominion	In Progress			12/31/2022
James River 115 kV	52.5	Fluvanna	Dominion	In Progress			2/1/2025
Red House DP 115 kV	44.1	Campbell	Dominion	In Progress			2/1/2025
Central VA-Twitty 115 kV	31.5	Charlotte	Dominion	In Progress			2/1/2025
Smithfield-Surry 230 kV	132	Isle of Wight	Dominion	In Progress			2/1/2025
Kidds Store - Fork Union 115 kV II	57	Accomack	Dominion	In Progress			2/1/2025
Garner DP 115 kV	30	Northumberland	Dominion	In Progress			2/1/2025
Clubhouse - Sapony 230 kV	115	City of Emporia	Dominion	In Progress			12/1/2025

Flemming - Fremont 69 kV	51.8	Wise	AEP	In Progress			12/1/2025
Ladysmith- Elmont 230kV	130	Caroline	Dominion	In Progress			12/31/2024
Cobbs Creek - James River Industrial 115kV	100	Cumberland	Dominion	In Progress			12/31/2024
Todds Tavern-Spotsylvania/Goldsdale 115kV	60	Spotsylvania	Dominion	In Progress			12/31/2024
Clubhouse – Lakeview 230 kV	100	Greensville	Dominion	In Progress			12/31/2025
Papermill IND – Harmony Village 230 kV	120	King and Queen	Dominion	In Progress			12/31/2025
Poolesville - Winchester 230 kV	104	Isle of Wight	Dominion	In Progress			12/12/2023
Jetersville-Ponton 115 kV	106	Amelia	Dominion	In Progress			12/12/2023
Floyd - Alum Ridge 138 kV	80	Floyd	AEP	In Progress			12/31/2025
Bremo Bluff - Buckingham 230 kV	56	Buckingham	Dominion	In Progress			12/1/2025
Crystal Hill DP- Perth 115kV	69	Halifax	Dominion	In Progress			9/30/2025
Remington 324 34.5 kV	14	Fauquier	Dominion	In Progress			3/31/2023
Harrisonburg 356 34.5 kV	15	Rockingham	Dominion	In Progress			12/31/2023
North Pole 492 34.5 kV	25	Goochland	Dominion	In Progress			3/31/2023
Indiana Creek 34.5 kV	10	Wise	AEP	In Progress			12/21/2023
Powhatan 406 34.5 kV	15	Powhatan	Dominion	In Progress			12/31/2023
Reedy Creek- Kinderton 115kV	75	Mecklenburg	Dominion	In Progress			12/31/2025
Cloverdale - Joshua Falls 765 kV	125	Bedford	AEP	In Progress			12/31/2023
Cobbs Creek- James River 115kV	60	Fluvanna	Dominion	In Progress			6/1/2025
Clover- Farmville 230kV	186	Prince Edward	Dominion	In Progress			6/1/2025

Lunenburg- Butcher Creek 115kV	51	Lunenburg	Dominion	In Progress			6/1/2025
Hickman 69 kV	20	Pulaski	AEP	In Progress			12/20/2024
Lone Gum - Rockcastle 138 kV	99.5	Bedford	AEP	In Progress			5/1/2025
Celanese 138 kV	15	Giles	AEP	In Progress			7/1/2024
Rogers Road 500 kV	109	Greensville	Dominion	In Progress			12/1/2025
Kerr Dam - Chase City 115 kV	130	Mecklenburg	Dominion	In Progress			12/1/2025
Chase City-Herbert 115 kV	115	Mecklenburg	Dominion	In Progress			12/20/2024
Gary 24.94 kV	12	Lunenburg	Dominion	In Progress			10/2/2023
Shacklesfords 34.5 kV	19.8	King and Queen	Dominion	In Progress			10/2/2023
Oak Grove 22.9 kV	18	Westmoreland	Dominion	In Progress			10/2/2023
North Doswell 12.5 kV	12	Hanover	Dominion	In Progress			10/2/2023
Freeman DP – Lawrenceville 115 kV	125	Brunswick	Dominion	In Progress			12/1/2024
Bremo Bluff 34.5kV	16	Fluvanna	Dominion	In Progress			10/11/2023
Fentress 34.5kV	20	City of Chesapeake	Dominion	In Progress			10/26/2023
Remington- Gordonsville 230kV	150	Culpeper	Dominion	In Progress			9/1/2026
Buckingham- Farmville 230kV	85	Cumberland	Dominion	In Progress			9/1/2026
Cunningham - Elmont 500 kV III	149	Fluvanna	Dominion	In Progress			6/30/2026
Sanders DP - Westmoreland 230 kV	65	Westmoreland	Dominion	In Progress			12/2/2024
Westover - Westfork 69 kV	60	Pittsylvania	AEP	In Progress			12/2/2024
Moran DP – Flatcreek 115 kV	80	Spotsylvania	Dominion	In Progress			12/31/2024

Carson – Rogers Road 500 kV	350	Greensville	Dominion	In Progress			12/31/2024
Bremo-Fork Union Military Academy 34.5 kV	16	Fluvanna	Dominion	In Progress			2/1/2025
Chase City- Herbert Plant Substation 115kV	149	Mecklenburg	Dominion	In Progress			3/30/2025
Rawlings 500kV	300.8	Brunswick	Dominion	In Progress			3/30/2025
Bremo - Buckingham 230 kV	79.8	Buckingham	Dominion	In Progress			2/1/2025
Earleys- Suffolk 230kV	130	City of Suffolk	Dominion	In Progress			10/1/2025
South Anna - Desper 230 kV	160	Louisa	Dominion	In Progress			12/1/2025
Oak Grove 34.5 kV	16	Westmoreland	Dominion	In Progress			12/15/2022
Surry - Yadkin 500 kV	450	Isle of Wight	Dominion	In Progress			10/1/2025
Clubhouse- Purdy 115kV	60	Greensville	Dominion	In Progress			12/31/2024
Clubhouse- Purdy 115kV	100	Greensville	Dominion	In Progress			12/31/2024
Southampton- Handsom 115kV	100	Southampton	Dominion	In Progress			12/31/2024
Southampton- Handsom 115kV	100	Southampton	Dominion	In Progress			12/31/2024
Gary 115kV	80	Lunenburg	Dominion	In Progress			12/31/2024
Oak Hall-Hallwood 69 kV	20	Accomack	ODEC	Withdrawn			6/1/2024
Total:	**44,417.2**						

APPENDIX F

Active Energy Storage and Solar Plus Storage Projects in the PJM New Services Queue

Active Energy Storage and Solar Plus Storage Projects in the PJM Generation Interconnection Queue

Name	Capacity (MW)	County	Transmission Owner	Fuel	Feasibility Study Status	System Impact Study Status	Facilities Study Status	Projected In Service Date
Smith Mountain-E. Danville 138 kV	150	Pittsylvania	AEP	Solar; Storage	Complete	Complete	In Progress	9/30/2021
New Road 230 kV	120	Loudoun	Dominion	Storage	Complete	Complete	In Progress	11/30/2020
Sapony 34.5 kV	17.6	Sussex	Dominion	Storage	Complete	Complete	In Progress	6/1/2021
Harmony Village 230 kV	40	Middlesex	Dominion	Storage	Complete	Complete	In Progress	11/30/2020
Disputanta-Poe 115 kV	20	Prince George	Dominion	Storage	Complete	Complete	In Progress	9/15/2021
Kerr Dam-Ridge Road 115 kV	20	Mecklenburg	Dominion	Storage	Complete	Complete	In Progress	9/15/2021
Carson-Rogers Road 500 kV	300	Sussex	Dominion	Solar; Storage	Complete	Complete	In Progress	6/1/2022
Bakers Pond-Bell Ave 115 kV	75	Sussex	Dominion	Storage; Solar	Complete	Complete	In Progress	6/1/2022
Yadkin 115 kV	100	City of Chesapeake	Dominion	Storage	Complete	Complete	In Progress	12/1/2021
Gladys DP-Stonemill Switching Station 69 kV	60	Campbell	Dominion	Solar; Storage	Complete	Complete	In Progress	9/1/2020
Shockoe DP-Chatham 69 kV	60	Pittsylvania	Dominion	Solar; Storage	Complete	Complete	In Progress	9/1/2020
Clubhouse 230 kV	200	Greensville	Dominion	Solar; Storage	Complete	Complete	In Progress	6/30/2020
Hopewell-Surry 230 kV	150	Surry	Dominion	Solar; Storage	Complete	Complete	In Progress	9/29/2021
Jacksons Ferry 138 kV	127.2	Wythe	AEP	Storage	Complete	Complete	In Progress	12/1/2022
Harmony Village 230 kV	80	Middlesex	Dominion	Storage	Complete	Complete	In Progress	11/30/2020
Endless Caverns 115 kV	200	Rockingham	Dominion	Storage	Complete	Complete	In Progress	10/31/2023
Kings Dominion DP 115 kV	93.5	Caroline	Dominion	Storage	Complete	Complete	In Progress	12/31/2022
Brodnax-South Hill 115 kV	99.2	Mecklenburg	Dominion	Solar; Storage	Complete	Complete	In Progress	10/31/2021

New Road 230 kV	170	Loudoun	Dominion	Storage	Complete	Complete	In Progress	11/30/2021
Kings Dominion DP 115 kV	50	Caroline	Dominion	Solar; Storage	Complete	Complete	In Progress	12/16/2022
Carson-Rogers Rd 500 kV	394	Sussex	Dominion	Solar; Storage	Complete	Complete	In Progress	6/1/2022
Hayes-White Marsh 115 kV	150	Gloucester	Dominion	Solar; Storage	Complete	Complete	In Progress	12/31/2021
New Church 138 kV	19	Accomack	DPL	Storage	Complete	Complete	In Progress	12/31/2022
Four Rivers-Hanover 230 kV	435	Hanover	Dominion	Storage	Complete	Complete	In Progress	12/31/2022
Clubhouse-Sapony 230 kV	223.5	Dinwiddie	Dominion	Storage	Complete	Complete	In Progress	12/31/2022
Kidds Store-Fort Union 115 kV	127.9	Fluvanna	Dominion	Solar; Storage	Complete	Complete	In Progress	6/30/2022
Arnold's Corner-Dahlgren 230 kV	100	King George	Dominion	Storage	Complete	Complete	In Progress	10/1/2023
Elk Run-Gainesville 230 kV	75	Fauquier	Dominion	Storage	Complete	Complete	In Progress	10/1/2023
Plaintation Creek 69 kV	50	Northampton	ODEC	Storage; Solar	Complete	Complete	In Progress	6/1/2025
Wattsville 12 kV	9	Accomack	DPL	Storage	Complete	Complete	In Progress	12/31/2020
Wattsville 69kV	40	Accomack	DPL	Storage	Complete	Complete	In Progress	6/30/2021
Locks 34.5 kV	10	Dinwiddie	Dominion	Solar; Storage	Complete	Complete	In Progress	10/31/2022
Surry-Hopewell 230 kV	89	Surry	Dominion	Solar; Storage	Complete	Complete	In Progress	8/3/2023
Fork Union-Mt. Eagle 230 kV	130	Fluvanna	Dominion	Solar; Storage	Complete	Complete	In Progress	12/15/2023
Shockoe DP-Chatham 69 kV	60	Fluvanna	Dominion	Storage	Complete	Complete	In Progress	12/15/2022
Gladys DP-Stonemill 69 kV	60	Campbell	Dominion	Storage	Complete	Complete	In Progress	12/15/2022
Hopewell-Surry 230kV	150	Surry	Dominion	Storage	Complete	Complete	In Progress	6/30/2022
Ladysmith-CT-St. Johns 230 kV	180	Caroline	Dominion	Storage	Complete	Complete	In Progress	6/30/2022

Mewdow Brook-Strasburg 138 kV II	75	Frederick	APS	Solar; Storage	Complete	Complete	In Progress	6/30/2022
Ladysmith CT-St. Johns 230 kV	120	Caroline	Dominion	Storage	Complete	Complete	In Progress	6/30/2022
Carson-Rogers Rd 500 kV	500	Greensville	Dominion	Storage	Complete	Complete	In Progress	12/1/2021
Carson-Rogers Rd 500 kV	400	Greensville	Dominion	Storage	Complete	Complete	In Progress	12/1/2021
Arnold's Corner-Dahlgren 230 kV	200	King George	Dominion	Storage	Complete	Complete	In Progress	10/31/2023
Redbud-Gaylord 34.5 kV	36	Frederick	APS	Solar; Storage	Complete	Complete	In Progress	12/1/2023
Harmony Village 230 kV	100	Middlesex	Dominion	Storage	Complete	Complete	In Progress	12/31/2023
White Marsh 34.5 kV	19	Gloucester	Dominion	Storage	Complete	Complete	In Progress	7/1/2022
Cloverdale-Burlington Height 138 kV	100	Botetourt	AEP	Storage	Complete	Complete	In Progress	10/22/2023
Gainesville-Loudoun 230 kV	200	Prince William	Dominion	Storage	Complete	Complete	In Progress	10/22/2023
Endless Caverns 115 kV	300	Rockingham	Dominion	Storage	Complete	Complete	In Progress	10/30/2023
Remington CT 230 kV	100	Fauquier	Dominion	Storage	Complete	Complete	In Progress	12/1/2023
Heritage 500 kV	75	Brunswick	Dominion	Storage	Complete	Complete	In Progress	12/1/2023
Ladysmith CT 230 kV	50	Caroline	Dominion	Storage	Complete	Complete	In Progress	12/1/2023
Rogers Road 500 kV	75	Greensville	Dominion	Storage	Complete	Complete	In Progress	12/1/2023
Valley 230 kV	150	Augusta	Dominion	Solar; Storage	Complete	Complete	In Progress	12/31/2023
Grottoes 115 kV	150	Augusta	Dominion	Solar; Storage	Complete	Complete	In Progress	12/31/2023
Gretna 12.5 kV	7	Pittsylvania	Dominion	Storage	Complete	Complete	In Progress	12/30/2022
Northern Neck 34.5 kV	10	Richmond	Dominion	Storage	Complete	Complete	In Progress	12/30/2022
Grottoes 12.5 kV	19	Rockingham	Dominion	Storage	Complete	Complete	In Progress	12/31/2022
Fort Pickett 13.2 kV	14	Nottoway	Dominion	Storage	Complete	Complete	In Progress	12/30/2022
Poland Rd-Runway DP 230 kV	50	Loudoun	Dominion	Storage	Complete	Complete	In Progress	6/1/2023
Ladysmith CT-Mine Road 230 kV	200	Caroline	Dominion	Storage	Complete	Complete	In Progress	12/1/2023

Lexington-Dooms 230 kV	50	Augusta	Dominion	Storage	Complete	Complete	In Progress	12/29/2023
Suffolk 230 kV	50	City of Suffolk	Dominion	Solar; Storage	Complete	Complete	In Progress	9/1/2023
Evergreen Mills 230 kV	200	Loudoun	Dominion	Storage	Complete	Complete	In Progress	6/1/2023
Barterbrook-Stuarts Draft 115 kV	75	Augusta	Dominion	Storage	Complete	Complete	In Progress	10/1/2024
Remington-Gordonsville 230 kV	75	Culpeper	Dominion	Storage	Complete	Complete	In Progress	10/1/2024
St. Johns 115 kV	75	Hanover	Dominion	Storage	Complete	Complete	In Progress	10/1/2024
Buckner 34.5 kV	20	Louisa	Dominion	Solar; Storage	Complete	Complete	In Progress	10/21/2022
Grassfield 34.5 kV	20	City of Chesapeake	Dominion	Storage	Complete	Complete	NA	4/1/2022
Midlothian 34.5 kV	20	Chesterfield	Dominion	Storage	Complete	Complete	NA	11/15/2022
Powhatan 34.5 kV	17	Powhatan	Dominion	Solar; Storage	Complete	Complete	NA	6/1/2023
Plaza 34.5 kV	19.1	City of Richmond	Dominion	Storage	Complete	Complete	NA	12/1/2023
Plaza 34.5 kV	19.1	City of Richmond	Dominion	Storage	Complete	Complete	NA	12/1/2023
St Johns 13.2 kV	10	Caroline	Dominion	Storage	Complete	Complete	NA	12/31/2022
West Berwick 12 kV	2	City of Lynchburg	PPL	Solar; Storage	Complete	Complete	NA	6/21/2022
Wattsville 69 kV II	80	Accomack	DPL	Storage	Complete	Complete		12/1/2021
Trexlertown 12 kV	3	City of Lynchburg	PPL	Solar; Storage	Complete	Complete		6/21/2022
Wallops Island 69 kV	20	Accomack	ODEC	Solar; Storage	Complete	In Progress		12/1/2020
Colonial Trial 230 kV	160	Surry	Dominion	Storage	Complete	In Progress		6/30/2022
Brunswick-Gasburg 69 kV	50	Sussex	Dominion	Storage	Complete	In Progress		6/30/2023
Pamplin-Chase City 115 kV	150	Charlotte	Dominion	Storage	Complete	In Progress		6/30/2023

Twitty's Creek 115 kV	20	Charlotte	Dominion	Solar; Storage	Complete	In Progress		3/1/2022
Twitty's Creek 115 kV	20	Charlotte	Dominion	Solar; Storage	Complete	In Progress		6/1/2022
Twitty's Creek 115 kV	20	Charlotte	Dominion	Solar; Storage	Complete	In Progress		6/1/2022
Lake of the Woods DP-Wilderness DP 115 kV	150	Orange	Dominion	Storage	Complete	In Progress		6/30/2023
Sherwill 69 kV	75	Campbell	AEP	Solar; Storage	Complete	In Progress		6/30/2024
Dryburg 115 kV	45	Halifax	Dominion	Solar; Storage	Complete	In Progress		12/1/2023
Boykins-Murphy 115 kV	62.5	Southampton	Dominion	Solar; Storage	Complete	In Progress		12/1/2023
Briery DP-Clover 230 kV	100	Lunenburg	Dominion	Solar; Storage	Complete	In Progress		12/1/2024
Fentress 230 kV	127.5	City of Chesapeake	Dominion	Storage	Complete	In Progress		12/1/2024
Deep Creek 115 kV	100	City of Chesapeake	Dominion	Storage	Complete	In Progress		11/30/2023
Twitty's Creek 115 kV	20	Charlotte	Dominion	Solar; Storage	Complete	In Progress		6/1/2022
Bremo-Scottsville 138 kV	149.5	Buckingham	AEP	Storage	Complete	In Progress		10/31/2023
Palmer Spring 115 kV	101	Mecklenburg	Dominion	Storage	Complete	In Progress		12/31/2023
Palmer Springs 115 kV	101	Mecklenburg	Dominion	Storage	Complete	In Progress		12/31/2023
Rawlings-Carson 500 kV	436	Dinwiddie	Dominion	Storage	Complete	In Progress		12/31/2022
Curdsville DP-Willis Mt. 115 kV	120	Buckingham	Dominion	Storage	Complete	In Progress		12/31/2022
Boxwood-Riverville 138 kV	50	Amherst	AEP	Storage	Complete	In Progress		12/1/2023
Garner-Northern Neck 115 kV	75	Richmond	Dominion	Storage	Complete	In Progress		10/1/2024
Grit DP-Perth 115 kV	75	Pittsylvania	Dominion	Storage	Complete	In Progress		10/1/2024
Bakers Pond DP 115 kV	60	Prince George	Dominion	Solar; Storage	Complete	In Progress		10/1/2024

Mount Airy-Chatham 69 kV	50	Pittsylvania	Dominion	Solar; Storage	Complete	In Progress		10/1/2024
Lexington 115 kV	100	Rockbridge	Dominion	Storage	Complete	In Progress		6/1/2024
Caroline Pines 22 kV	20	Hanover	Dominion	Solar; Storage	Complete	In Progress		10/21/2022
Peninsula 115 kV	189.8	City of Hampton	Dominion	Storage	In Progress			1/1/2023
Chase City 12.5 kV	15	Mecklenburg	Dominion	Storage	In Progress			12/30/2022
Arnolds Corner 34.5 kV	7	King George	Dominion	Storage	In Progress			12/30/2022
Emporia-Pleasant Hill 115 kV	150	Greensville	Dominion	Solar; Storage	In Progress			10/1/2024
River Ridge 34.5 kV	20	Prince William	Dominion	Storage	In Progress			12/15/2021
Chickhominy-Surry 500 kV	325	Charles City	Dominion	Solar; Storage	In Progress			10/1/2024
Lexington 115 kV	200	Rockbridge	Dominion	Storage	In Progress			6/1/2024
Trabue-Midlothian 230 kV line	150	Chesterfield	Dominion	Storage	In Progress			4/15/2022
Colonial Trail-Hopewell 230 kV	100	Prince George	Dominion	Solar; Storage	In Progress			12/1/2024
Oak Hall-Perdue 69 kV	20	Accomack	ODEC	Solar; Storage	In Progress			6/1/2024
Nokesville-Vint Hill 230 kV	150	Prince William	Dominion	Storage	In Progress			8/10/2022
Crystal Hill - Halifax 115 kV	64.7	Halifax	Dominion	Solar; Storage	In Progress			6/30/2022
Sedge Hill - Person 230 kV	75.1	Halifax	Dominion	Solar; Storage	In Progress			6/30/2022
Gladstone 138 kV	100	Nelson	AEP	Storage	In Progress			9/1/2024
Rawlings-Clover 500 kV	150	Brunswick	Dominion	Storage	In Progress			7/1/2024
Rawlings-Clover 500 kV	150	Brunswick	Dominion	Storage	In Progress			7/1/2024
Page-Bethel 138 kV	100	Pulaski	APS	Solar; Storage	In Progress			6/30/2022
Amherst-Riverville 138 kV	115	Amherst	AEP	Storage	In Progress			12/1/2024
Reusens 12.47 kV	20	City of Lynchburg	AEP	Storage	In Progress			10/31/2022

Perkins Park 12.47 kV	20	City of Lynchburg	AEP	Storage	In Progress			10/31/2022
Greenwood DP - St. Johns DP 115 kV	70	Louisa	Dominion	Solar; Storage	In Progress			6/30/2024
Watkins Corner 34.5 kV	20	Southampton	Dominion	Storage	In Progress			4/29/2023
Floyd 138 kV	20	Floyd	AEP	Storage	In Progress			1/1/2024
Old Church 34.5 kV	25	Hanover	Dominion	Storage	In Progress			12/15/2025
Whitehouse-Lone Gum 138 kV	102.1	Bedford	AEP	Solar; Storage	In Progress			6/30/2022
Sedge Hill 230 kV	100	Halifax	Dominion	Storage	In Progress			12/31/2023
Chesterfield 230 kV	150	Chesterfield	Dominion	Storage	In Progress			12/31/2023
Clover 230 kV	150	Halifax	Dominion	Storage	In Progress			12/31/2025
Berry Hill 138 kV	55	Pittsylvania	AEP	Storage	In Progress			10/1/2024
Wurno 138 kV	120	Pulaski	AEP	Solar; Storage	In Progress			12/31/2023
Southwest 230 kV	150	Chesterfield	Dominion	Storage	In Progress			12/31/2023
Tyler 230 kV	150	Chesterfield	Dominion	Storage	In Progress			12/31/2023
Yorktown 230 kV	150	York	Dominion	Storage	In Progress			12/31/2023
Catharpin 230 kV	150	Prince William	Dominion	Storage	In Progress			12/31/2023
Loudoun 230 kV	150	Loudoun	Dominion	Storage	In Progress			12/31/2023
Clifton 230 kV	150	Fairfax	Dominion	Storage	In Progress			12/31/2023
Beaumeade 230 kV	150	Loudoun	Dominion	Storage	In Progress			12/31/2023
Stonewall 138 kV	150	Frederick	APS	Storage	In Progress			12/31/2023
Hurley 69 kV	75	Buchanan	AEP	Storage	In Progress			9/1/2024
Meadow Brook 138 kV	100	Frederick	APS	Storage	In Progress			12/31/2023
Birchwood 230 kV	100	King George	Dominion	Storage	In Progress			12/31/2023
Liberty 230 kV	150	Prince William	Dominion	Storage	In Progress			12/31/2023
Bristers 230 kV	100	Fauquier	Dominion	Storage	In Progress			12/31/2023
Possum Point 230 kV	150	Prince William	Dominion	Storage	In Progress			12/31/2023
Roundtable 230 kV	100	Loudoun	Dominion	Storage	In Progress			12/31/2023
Lanexa 230 kV	150	New Kent	Dominion	Storage	In Progress			12/31/2023
Matt Funk 138 kV	100	Roanoke	AEP	Storage	In Progress			12/31/2023
Smith Mountain 138 kV	75	Bedford	AEP	Storage	In Progress			12/31/2023
Spotsylvania 115 kV	75	Spotsylvania	Dominion	Storage	In Progress			12/31/2023

Ladysmith 230 kV	150	Caroline	Dominion	Storage	In Progress			12/31/2023
Landstown 230 kV	100	City of Virginia Beach	Dominion	Storage	In Progress			12/31/2023
Skiffs Creek 230 kV	150	James City	Dominion	Storage	In Progress			12/31/2023
Shelhorn 230 kV	100	Loudoun	Dominion	Storage	In Progress			12/31/2023
Buttermilk 230 kV	100	Loudoun	Dominion	Storage	In Progress			12/31/2023
Pacific 230 kV	100	Loudoun	Dominion	Storage	In Progress			12/31/2023
Reston 230 kV	100	Fairfax	Dominion	Storage	In Progress			12/31/2023
Rogers Road - Carson 500 kV	40	Sussex	Dominion	Storage	In Progress			12/2/2024
Rogers Road - Carson 500 kV	140	Sussex	Dominion	Storage	In Progress			12/2/2024
Ridge Road 115 kV	50	Mecklenburg	Dominion	Storage	In Progress			12/1/2024
Smithfield 230 kV	250	Isle of Wight	Dominion	Storage	In Progress			4/1/2023
Broadford 138 kV	250	Smyth	AEP	Storage	In Progress			11/15/2024
Lanexa - Dunnsville 230 kV	100	New Kent	Dominion	Storage	In Progress			12/31/2023
Garner Delivery Point - Lancaster 115 kV	50	Lancaster	Dominion	Storage	In Progress			12/1/2025
Chesterfield 230 kV	60	Chesterfield	Dominion	Storage	In Progress			12/1/2025
Rohrsburg 12 kV	3	City of Lynchburg	PPL	Solar; Storage	In Progress			6/21/2022
Axton 138 kV	350	Henry	AEP	Solar; Storage	In Progress			10/31/2025
Carson - Rogers Road 500 kV	500	Sussex	Dominion	Solar; Storage	In Progress			12/31/2023
Monarch I Interconnection 500 kV	400	Greensville	Dominion	Solar; Storage	In Progress			12/31/2023
Wythe - Glen Lyn 138 kV	150	Wythe	AEP	Solar; Storage	In Progress			10/31/2024
Chickahominy - Surry 500 kV	500	Charles City	Dominion	Storage	In Progress			12/1/2024
Sedge Hill - Mount Laurel 115 kV	51	Halifax	Dominion	Storage	In Progress			5/31/2024
Sedge Hill - Person 115 kV	70	Halifax	Dominion	Storage	In Progress			5/31/2024

Carson 230 kV	100	Dinwiddie	Dominion	Storage	In Progress			12/2/2024
Tech Drive 138 kV	80	Montgomery	AEP	Storage	In Progress			1/1/2024
Bakers Pond 115 kV	100	Prince George	Dominion	Solar; Storage	In Progress			12/31/2023
Bustleburg Tap - Fairfield DP 115 kV	140	Rockbridge	Dominion	Solar; Storage	In Progress			10/31/2024
Harrisonburg - Endless Caverns 230 kV	150	Rockingham	Dominion	Solar; Storage	In Progress			10/31/2024
Clubhouse - Jarratt 115 kV	80	Greensville	Dominion	Solar; Storage	In Progress			6/3/2024
Perth - Crystal Hill 115 kV	65	Halifax	Dominion	Solar; Storage	In Progress			6/3/2024
North Shenandoah – Merck 115 kV	70	Rockingham	Dominion	Solar; Storage	In Progress			6/3/2024
Suffolk - Earleys 230 kV	70	City of Suffolk	Dominion	Solar; Storage	In Progress			6/3/2024
Kidds Store - Sherwood 115 kV	110	Fluvanna	Dominion	Storage	In Progress			3/29/2024
Briery - Clover 230 kV	110	Prince Edward	Dominion	Storage	In Progress			3/29/2024
Rogers Road - Carson 500 kV	150	Greensville	Dominion	Storage	In Progress			3/25/2024
Brunswick Collector Bus - Wake 500 kV	500	Brunswick	Dominion	Storage	In Progress			3/29/2024
Scottsville - Bremo 138 kV	80	Buckingham	AEP	Storage	In Progress			3/29/2024
Double Toll Gate - Meadowbrook 138 kV	90	Frederick	APS	Solar; Storage	In Progress			10/31/2024
Broadford 138 kV	200	Smyth	AEP	Solar; Storage	In Progress			10/31/2025
Huffman 138 kV	150	Carroll	AEP	Solar; Storage	In Progress			10/31/2024
Edgemont 138 kV	94	Montgomery	AEP	Solar; Storage	In Progress			6/1/2024
Skimmer - Abert 69 kV	37	Amherst	AEP	Solar; Storage	In Progress			6/1/2024

Unionville - Locust 115 kV	80	Orange	Dominion	Solar; Storage	In Progress			11/15/2023
Unionville - Locust Grove 115 kV	40	Orange	Dominion	Solar; Storage	In Progress			11/15/2023
Remington 230 kV	100	Fauquier	Dominion	Storage	In Progress			5/31/2023
Hanover 230 kV	250	Hanover	Dominion	Storage	In Progress			5/31/2023
Tasley - Oak Hall 69 kV II	58.8	Accomack	ODEC	Storage	In Progress			4/1/2025
Chase City-Drakes Branch 115 kV	118.6	Mecklenburg	Dominion	Storage	In Progress			4/1/2025
Boydton Plank Road 115 kV	200	Mecklenburg	Dominion	Storage	In Progress			4/1/2025
Gary DP – Lunenburg 115 kV	125	Lunenburg	Dominion	Storage	In Progress			4/1/2025
Heritage 500 kV	270	Brunswick	Dominion	Storage	In Progress			4/1/2025
Chickahominy 230 kV	340	Charles City	Dominion	Storage	In Progress			4/1/2025
Danieltown DP– Brunswick 69 kV	46.8	Brunswick	Dominion	Storage	In Progress			4/1/2025
Palmer Springs 115 kV	80	Mecklenburg	Dominion	Storage	In Progress			4/1/2025
Curdsville DP-Willis Mt. 115 kV	200	Buckingham	Dominion	Storage	In Progress			4/1/2025
Morrisville 230 kV	200	Fauquier	Dominion	Storage	In Progress			4/1/2025
Gladys DP-Stonemill 69 kV	60	Campbell	Dominion	Storage	In Progress			12/15/2022
Chesterfield 230 kV	200	Chesterfield	Dominion	Storage	In Progress			6/10/2024
Hopewell - Surry 230 kV	150	Surry	Dominion	Storage	In Progress			10/31/2024
Louisa - North Anna 230 kV	90.8	Louisa	Dominion	Storage	In Progress			3/29/2024
Cunningham - Elmont 500 kV	149	Fluvanna	Dominion	Solar; Storage	In Progress			6/30/2026
Riverton 138	20	Warren	APS	Storage	In Progress			5/1/2024
Spring Creek – South Abingdon 138 kV	100	Washington	AEP	Storage	In Progress			7/1/2024
Hopewell 34.5kV	20	City of Hopewell	Dominion	Storage	In Progress			5/1/2023
Hopewell 34.5kV	20	City of Hopewell	Dominion	Storage	In Progress			5/1/2023

Hopewell 34.5kV	10	City of Hopewell	Dominion	Storage	In Progress			5/1/2023
Virginia Beach - Pendleton 115 kV	40	City of Virginia Beach	Dominion	Storage	In Progress			1/1/2025
Morrisville 230kV	90	Fauquier	Dominion	Storage	In Progress			7/31/2023
Morrisville 230kV	20	Fauquier	Dominion	Storage	In Progress			7/31/2023
Morrisville 230kV	20	Fauquier	Dominion	Storage	In Progress			7/31/2023
Morrisville 230kV	20	Fauquier	Dominion	Storage	In Progress			7/31/2023
Surry - Hopewell 230 kV	80	Surry	Dominion	Solar; Storage	In Progress			11/15/2024
SedgeHill - Person 230 kV	100	Halifax	Dominion	Solar; Storage	In Progress			6/1/2025
SedgeHill - Person 230 kV	160	Halifax	Dominion	Solar; Storage	In Progress			6/1/2025
Jubal Early - Pipers Gap 138 kV	20	Carroll	AEP	Solar; Storage	In Progress			6/1/2025
Jubal Early - Pipers Gap 138 kV	60	Carroll	AEP	Solar; Storage	In Progress			6/1/2025
Bismark-Doubs 500 kV	100	Frederick	Dominion	Solar; Storage	In Progress			12/31/2022
Locust Grove D.P. 34.5kV	20	Orange	Dominion	Storage	In Progress			2/28/2023
Vint Hill 34.5kV	20	Prince William	Dominion	Storage	In Progress			12/23/2022
Sycoline 12.5kV	20	Loudoun	Dominion	Storage	In Progress			12/23/2022
Bowman 12.5kV	20	Prince William	Dominion	Storage	In Progress			12/23/2022
Paradise 34.5kV	20	Prince William	Dominion	Storage	In Progress			12/23/2022
Railroad 34.5kV	20	Prince William	Dominion	Storage	In Progress			12/23/2022
Gretna-Mt. Airy 69kV	20	Pittsylvania	Dominion	Storage	In Progress			2/28/2023
Gretna-Mt. Airy 69kV	20	Pittsylvania	Dominion	Storage	In Progress			2/28/2023
Gretna-Mt. Airy 69kV	20	Pittsylvania	Dominion	Storage	In Progress			2/28/2023
Darbytown 230 kV	5	Henrico	Dominion	Storage	In Progress			12/31/2024
Darbytown 230 kV II	4	Henrico	Dominion	Storage	In Progress			12/31/2024
Darbytown 230 kV III	2	Henrico	Dominion	Storage	In Progress			12/31/2024
Peter's Mountain 138 kV	200	Giles	AEP	Storage	In Progress			12/31/2024

Penniman - Waller 230 kV	250	York	Dominion	Storage	In Progress			1/1/2025
James River 115 kV	52.5	Fluvanna	Dominion	Solar; Storage	In Progress			2/1/2025
Red House DP 115 kV	44.1	Campbell	Dominion	Solar; Storage	In Progress			2/1/2025
Central VA-Twitty 115 kV	31.5	Charlotte	Dominion	Solar; Storage	In Progress			2/1/2025
Smithfield-Surry 230 kV	132	Isle of Wight	Dominion	Solar; Storage	In Progress			2/1/2025
Kidds Store - Fork Union 115 kV II	57	Accomack	Dominion	Solar; Storage	In Progress			2/1/2025
Remington CT 230 kV	100	Fauquier	Dominion	Storage	In Progress			12/1/2023
Heritage 500 kV	75	Brunswick	Dominion	Storage	In Progress			12/1/2023
Ladysmith CT 230 kV	50	Caroline	Dominion	Storage	In Progress			12/1/2023
Poland Rd-Runway DP 230 kV	50	Loudoun	Dominion	Storage	In Progress			12/1/2023
Lanexa 230kV	28.8	New Kent	Dominion	Storage	In Progress			12/31/2025
Ladysmith- Elmont 230kV	180	Caroline	Dominion	Storage	In Progress			12/31/2024
Todds Tavern-Spotsylvania/Goldsdale 115kV	110	Spotsylvania	Dominion	Storage	In Progress			12/31/2024
Chesterfield- Centralia 115kV	35	Chesterfield	Dominion	Storage	In Progress			12/31/2025
Deep Creek 115 kV	100	City of Chesapeake	Dominion	Storage	In Progress			11/30/2023
Chancellor 115 kV	200	Spotsylvania	Dominion	Storage	In Progress			6/30/2025
Suffolk- Sunbury 230kV	50	City of Suffolk	Dominion	Storage	In Progress			12/31/2025
Claytor 138 kV	50	Pulaski	AEP	Storage	In Progress			12/31/2025
Chickahominy 230kV	43.2	Charles City	Dominion	Storage	In Progress			12/31/2025
East Danville 139 kV	100	Pittsylvania	AEP	Storage	In Progress			12/31/2025
Crittenden 230 kV	100	City of Suffolk	Dominion	Storage	In Progress			12/31/2025
Crystal Hill DP- Perth 115kV	69	Halifax	Dominion	Solar; Storage	In Progress			9/30/2025
Red Eye 138 kV	40	Campbell	AEP	Storage	In Progress			9/30/2023

Owl Trap Switching Station 115kV	40	Gloucester	Dominion	Storage	In Progress			9/10/2024
Reedy Creek- Kinderton 115kV	50	Mecklenburg	Dominion	Storage	In Progress			12/31/2025
Harmony Village 230kV	68	Middlesex	Dominion	Storage	In Progress			12/31/2025
Iron Bridge 230kV	50.4	Chesterfield	Dominion	Storage	In Progress			12/31/2025
Cloverdale - Joshua Falls 765 kV	125	Bedford	AEP	Solar; Storage	In Progress			12/31/2023
Bremo-Cartersville 230 kV II	115	Cumberland	Dominion	Storage	In Progress			6/30/2026
Chase City-Herbert 115 kV	115	Mecklenburg	Dominion	Solar; Storage	In Progress			12/20/2024
Remington-Gordonsville 230kV	150	Culpeper	Dominion	Storage	In Progress			9/1/2026
Buckingham- Farmville 230kV	85	Cumberland	Dominion	Storage	In Progress			9/1/2026
Cunningham - Elmont 500 kV III	149	Fluvanna	Dominion	Storage; Solar	In Progress			6/30/2026
Cunningham - Elmont 500 kV IV	149	Fluvanna	Dominion	Storage	In Progress			6/30/2026
Kidds Store - Fork Union 115 kV II	0	Fluvanna	Dominion	Storage	In Progress			6/30/2026
Sanders DP - Westmoreland 230 kV	65	Westmoreland	Dominion	Solar; Storage	In Progress			12/2/2024
Westover - Westfork 69 kV	60	Pittsylvania	AEP	Solar; Storage	In Progress			12/2/2024
Chase City 115kV	50	Mecklenburg	Dominion	Storage	In Progress			12/31/2025
Pinewood- St Johns 115kV	100	Caroline	Dominion	Storage	In Progress			6/1/2025
Moran DP – Flatcreek 115 kV	130	Spotsylvania	Dominion	Storage	In Progress			12/31/2024
Buckhorn 138 kV	80	Tazewell	AEP	Storage	In Progress			12/31/2024
Kings Fork – Chuckatuck 230 kV	150	City of Suffolk	Dominion	Storage	In Progress			9/30/2025
Four Rivers 230kV	996	Hanover	Dominion	Storage	In Progress			6/1/2025
Keen Mountain 138 kV	80	Buchanan	AEP	Storage	In Progress			6/1/2025

Earleys- Suffolk 230kV	130	City of Suffolk	Dominion	Solar; Storage	In Progress			10/1/2025
Ladysmith 230 kV	62.5	Caroline	Dominion	Storage	In Progress			3/21/2025
Ladysmith 230 kV II	125	Caroline	Dominion	Storage	In Progress			3/21/2025
Gladys DP - Stonemill 69 kV	40	Campbell	Dominion	Storage	In Progress			12/3/2025
Surry - Yadkin 500 kV	450	Isle of Wight	Dominion	Solar; Storage	In Progress			10/1/2025
Oak Hall-Hallwood 69 kV	20	Accomack	ODEC	Solar; Storage	Withdrawn			6/1/2024
Total:	**31,639.3**							

APPENDIX G

Enabling Legislation (Amended 2017)

Enabling Legislation (Amended 2017)

§ 45.2-1902. (Effective October 1, 2021; Expires July 1, 2025) Virginia Solar Energy Development and Energy Storage Authority established; purpose.

The Virginia Solar Energy Development Authority is continued as the Virginia Solar Energy Development and Energy Storage Authority. The Authority constitutes a political subdivision of the Commonwealth. The Authority is established for the purposes of (i) facilitating, coordinating, and supporting the development, either by the Authority or by other qualified entities, of the solar energy and energy storage industries and solar energy and energy storage projects by developing programs that increase the availability of financing for solar energy projects and energy storage projects; (ii) facilitating the increase of solar energy generation systems and energy storage projects on public and private sector facilities in the Commonwealth; (iii) promoting the growth of the Commonwealth's solar and energy storage industries; (iv) providing a hub for collaboration between entities, both public and private, to partner on solar energy projects and energy storage projects; and (v) positioning the Commonwealth as a leader in research, development, commercialization, manufacturing, and deployment of energy storage technology. The Authority may also consult with research institutions, businesses, nonprofit organizations, and stakeholders as the Authority deems appropriate. The Authority has only those powers enumerated in this article.

§ 45.2-1903. (Effective October 1, 2021; Expires July 1, 2025) Membership; terms; vacancies; expenses.

A. The Authority shall have a total membership of 15 nonlegislative citizen members appointed as follows: eight members to be appointed by the Governor; four members to be appointed by the Speaker of the House of Delegates; and three members to be appointed by the Senate Committee on Rules. All members of the Authority shall be citizens of the Commonwealth. Members may include representatives of solar businesses, solar customers, renewable energy financiers, state and local government solar customers, institutions of higher education who have expertise in energy technology, and solar research academics.

B. Except as otherwise provided in this article, all appointments shall be for terms of four years each. No member shall be eligible to serve more than two successive four-year terms. After expiration of an initial term of three years or less, two additional four-year terms may be served by such member if appointed thereto. Appointments to fill vacancies, other than by expiration of a term, shall be made for the unexpired terms. Any appointment to fill a vacancy shall be

made in the same manner as the original appointment. The remainder of any term to which a member is appointed to fill a vacancy shall not constitute a term in determining the member's eligibility for reappointment.

C. The Authority shall appoint from its membership a chairman and a vice-chairman, each of whom shall serve in such capacity at the pleasure of the Authority. The chairman, or in his absence the vice-chairman, shall preside at each meeting of the Authority. The meetings of the Authority shall be held on the call of the chairman or whenever a majority of the members so request. A majority of members of the Authority serving at any one time shall constitute a quorum for the transaction of business.

D. Members shall serve without compensation. However, all members may be reimbursed for all reasonable and necessary expenses incurred in the performance of their duties as provided in §§ 2.2-2813 and 2.2-2825. Such expenses shall be paid from funds appropriated to the Authority by the General Assembly.

E. Members of the Authority shall be subject to the standards of conduct set forth in the State and Local Government Conflict of Interests Act (§ 2.2-3100 et seq.) and may be removed from office for misfeasance, malfeasance, nonfeasance, neglect of duty, or misconduct in the manner set forth therein.

F. Except as otherwise provided in this article, members of the Authority shall be subject to the provisions of the Virginia Freedom of Information Act (§ 2.2-3700 et seq.).

§ 45.2-1904. (Effective October 1, 2021; Expires July 1, 2025) Partnerships.

A. The Authority may establish public-private partnerships with entities pursuant to the Public-Private Education Facilities and Infrastructure Act of 2002 (§ 56-575.1 et seq.) to increase the number of solar energy generation systems on or located adjacent to public and private facilities in the Commonwealth. Any partnership established pursuant to this section shall stipulate that the Authority and the developers shall share the costs of the installation and operation of solar energy facilities and equipment.

B. The Authority may provide a central hub for appropriate entities, both public and private, to enter into partnerships that result in solar energy generation projects being developed in the Commonwealth. The Authority may act as a good faith broker in such matters to facilitate appropriate partnerships, including public-private partnerships.

§ 45.2-1905. (Effective October 1, 2021; Expires July 1, 2025) Federal loan guarantees.

A. The Authority, on behalf of the Commonwealth, may apply to the U.S. Department of Energy for federal loan guarantees authorized or made available pursuant to Title XVII of the federal Energy Policy Act of 2005, P.L. 109-58; the federal American Recovery and Reinvestment Act of

2009, P.L. 111-5; or other similar federal legislation to facilitate the development of solar energy projects.

B. Upon obtaining a federal loan guarantee for a solar energy project pursuant to subsection A, the Authority, subject to any restrictions imposed by federal law, may allocate or assign all or any portion thereof to a qualified third party on terms and conditions the Authority finds appropriate. Any action of the Authority relating to the allocation and assignment of such loan guarantee shall be exempt from the provisions of the Administrative Process Act (§ 2.2-4000 et seq.) pursuant to subdivision B 4 of § 2.2-4002. Any decision of the Authority pursuant to this section shall be final and not subject to review or appeal.

§ 45.2-1906. (Effective October 1, 2021; Expires July 1, 2025) Powers and duties of the Authority.

In addition to other powers and duties established under this article, the Authority has the power and duty to:

1. Adopt, use, and alter at will an official seal;

2. Make bylaws for the management and regulation of its affairs;

3. Maintain an office at any place within the Commonwealth it designates;

4. Accept, hold, and administer moneys, grants, securities, or other property transferred, given, or bequeathed to the Authority, absolutely or in trust, from any source, public or private, for the purposes for which the Authority is established;

5. Make and execute contracts and all other instruments and agreements necessary or convenient for the exercise of its powers and functions;

6. Employ, in its discretion, consultants, attorneys, architects, engineers, accountants, financial experts, investment bankers, superintendents, managers, and any other employees and agents necessary and fix their compensation to be payable from funds made available to the Authority;

7. Invest its funds as permitted by applicable law;

8. Receive and accept from any federal or private agency, foundation, corporation, association, or person grants, donations of money, or real or personal property for the benefit of the Authority, and receive and accept from the Commonwealth or any other state, from any municipality, county, or other political subdivision thereof, or from any other source, aid or contributions of either money, property, or other things of value, to be held, used, and applied for the purposes for which such grants and contributions may be made;

9. Enter into agreements with any department, agency, or instrumentality of the United States or of the Commonwealth and with lenders and enter into loans with contracting parties for the purpose of planning, regulating, and providing for the financing or assisting in the financing of any project;

10. Do any lawful act necessary or appropriate to carry out the powers granted or reasonably implied in this article;

11. Identify and take steps to mitigate existing state and regulatory or administrative barriers to the development of the solar energy and energy storage industries, including facilitating any permitting processes;

12. Enter into interstate partnerships to develop the solar energy industry, solar energy projects, and energy storage projects;

13. Collaborate with entities, including institutions of higher education, to increase the training and development of the workforce needed by the solar and energy storage industries in the Commonwealth, including industry-recognized credentials and certifications;

14. Conduct any other activities as may seem appropriate to increase solar energy generation in the Commonwealth and the associated jobs and economic development and competitiveness benefits, including assisting investor-owned utilities in the planned deployment of at least 400 megawatts of solar energy projects in the Commonwealth by 2020 through entering into agreements in its discretion in any manner provided by law for the purpose of planning and providing for the financing or assisting in the financing of the construction or purchase of such solar energy projects authorized pursuant to § 56-585.1;

15. Promote collaborative efforts among the Commonwealth's public and private institutions of higher education in research, development, and commercialization efforts related to energy storage;

16. Monitor relevant developments in energy storage technology and deployment nationally and globally and disseminate relevant information and research results; and

17. Identify and work with the Commonwealth's industries and nonprofit partners in advancing efforts related to the development and commercialization of energy storage.

§ 45.2-1907. (Effective October 1, 2021; Expires July 1, 2025) Director; staff; counsel to the Authority.

A. The Director shall serve as Director of the Authority and shall administer the affairs and business of the Authority in accordance with the provisions of this article and subject to the policies, control, and direction of the Authority. The Director may obtain non-state-funded

support to carry out any duties assigned to the Director. Funding for such support may be provided by any source, public or private, for the purposes for which the Authority is established. The Director shall maintain and is custodian of all books, documents, and papers of or filed with the Authority. The Director may cause copies to be made of all minutes and other records and documents of the Authority and may give certificates under seal of the Authority to the effect that such copies are true copies, and any person dealing with the Authority may rely on such certificates. The Director also shall perform other duties prescribed by the Authority in carrying out the purposes of this article.

B. The Department shall serve as staff to the Authority.

C. The Office of the Attorney General shall provide counsel to the Authority.

§ 45.2-1908. (Effective October 1, 2021; Expires July 1, 2025) Annual report.

On or before October 15 of each year, the Authority shall submit an annual summary of its activities and recommendations to the Governor and the Chairmen of the House Committee on Appropriations, the Senate Committee on Finance and Appropriations, the House Committee on Labor and Commerce, and the Senate Committee on Commerce and Labor.

§ 45.2-1909. (Effective October 1, 2021; Expires July 1, 2025) Confidentiality of information.

A. The Authority shall hold in confidence the personal and financial information supplied to it or maintained by it concerning the siting and development of solar energy projects and energy storage projects.

B. Nothing in this section shall prohibit the Authority, in its discretion, from releasing any information that has been transformed into a statistical or aggregate form that does not allow the identification of the person who supplied particular information.

C. Information supplied by or maintained on any person or entity applying for or receiving an allocation of any federal loan guarantee, as well as specific information relating to the amount of, or the identity of the recipient of, such distribution, shall be subject to disclosure in accordance with the Virginia Freedom of Information Act (§ 2.2-3700 et seq.).

§ 45.2-1910. (Effective October 1, 2021; Expires July 1, 2025) Declaration of public purpose; exemption from taxation.

A. The exercise of the powers granted by this article shall be in all respects for the benefit of the citizens of the Commonwealth and for the promotion of their welfare, convenience, and prosperity.

B. The Authority shall be deemed to be performing an essential governmental function in the exercise of the powers conferred upon it by this chapter, and the property of the Authority and its income and operations shall be exempt from taxation or assessments upon any property acquired or used by the Authority under the provisions of this article.

§ 45.2-1911. (Effective October 1, 2021; Expires July 1, 2025) Sunset.

The provisions of this article shall expire on July 1, 2025.

APPENDIX H

Virginia Solar Energy Development and Energy Storage Authority Members

Virginia Solar Energy Development and Energy Storage Authority Members

Member/Organization	Area Represented	Appointed By	Term Expires
Paul Duncan GSD Energy Consultants	Non legislative Citizen	Governor	6/30/25
John Ockerman CEO Ockerman Automation Consulting, Inc.	Non legislative Citizen	Governor	6/30/23
Damian Pitt Associate Professor, VCU	Non legislative Citizen	Governor	6/30/22
Careth *Cody* Apperson Nystrom Managing Director, SJF Ventures	Non legislative Citizen	Governor	6/30/22
Cliona Mary Robb Director, Thompson McMullan, PC	Non legislative Citizen	Governor	6/30/23
Rumy J. Mohta CEO, ATLAS Branding and Commercial Financing	Non legislative Citizen	Governor	6/30/25
Colleen A. Lueken, PhD AES Energy Storage, Director of Market Analytics	Non legislative Citizen	Governor	6/30/24
Will Gathright Tumalow, Inc., Founder	Non legislative Citizen	Governor	6/30/25
Jon F. Hillis CEO, SolUnesco	Non legislative Citizen	Speaker of the House	6/30/22
John H. Rust, Jr. Commissioner CoA-FFX	Non legislative Citizen	Speaker of the House	6/30/22
Harrison Godfrey (Harry) Executive Director Virginia Advanced Energy Economy	Non legislative Citizen	Speaker of the House	6/30/25

Member/Organization	Area Represented	Appointed By	Term Expires
Kenneth G. Hutcheson Old Dominion Public Affairs	Non legislative Citizen	Senate Committee on Rules	6/30/22
Angela King Assistant City Attorney II City of Hampton	Non legislative Citizen	Speaker of the House	6/30/25
Katharine Bond VP, Public Policy & State Affairs	Non legislative Citizen	Senate Committee on Rules	6/30/23
Michael Herbert Co-Founder/Managing Partner Delorean Power	Non legislative Citizen	Senate Committee on Rules	6/30/24

APPENDIX I

Virginia Solar Energy Development and Energy Storage Authority Bylaws

Virginia Solar Energy Development and Energy Storage Authority

Bylaws

ARTICLE I. APPLICABILITY

Section 1. General.

The provisions of these Bylaws are applicable to all proceedings of the Virginia Solar Energy Development and Energy Storage Authority (the Authority) to the extent that the same are not inconsistent with the Code of Virginia (Code) or Executive Orders applicable to these proceedings. Whenever the provisions of these Bylaws are in conflict with the provisions of the Code or an applicable Executive Order, the latter shall control.

Section 2. Authority and Limitations.

The Authority is constituted under § 67-1500 of the Code as a body corporate and a political subdivision of the Commonwealth of Virginia. The Authority is specifically charged with the duties and responsibilities set forth in Title 67, Chapter 15, of the Code, primarily for the purpose of facilitating, coordinating, and supporting the development, either by the Authority or by other qualified entities, of the solar energy and energy storage industry, solar energy and energy storage projects, and associated supply chain vendors, among other such duties.

ARTICLE II. AUTHORITY OBJECTIVES

Section 1. General.

The Virginia Solar Energy Development and Energy Storage Authority is created to facilitate, coordinate, and support the development of the solar energy industry and solar-powered electric energy facilities in the Commonwealth. The Authority is directed to do so by developing programs to increase the availability of financing for solar energy projects, facilitate the increase of solar energy generation systems on public and private sector facilities in the Commonwealth, promote the growth of the Virginia solar industry, and provide a hub for collaboration between entities to partner on solar energy projects.

The Authority is charged with, among other tasks (i) facilitating, coordinating, and supporting the development, either by the Authority or by other qualified entities, of the solar energy and energy storage industries and solar energy and energy storage projects by developing programs that increase the availability of financing for solar energy projects and energy storage projects;

(ii) facilitating the increase of solar energy generation systems and energy storage projects on public and private sector facilities in the Commonwealth; (iii) promoting the growth of the Virginia solar and energy storage industries; (iv) providing a hub for collaboration between entities, both public and private, to partner on solar energy projects and energy storage projects; and (v) positioning the Commonwealth as a leader in research, development, commercialization, manufacturing, and deployment of energy storage technology.

ARTICLE III. MEMBERS AND STAFF

Section 1. Appointment of Members and Terms

All appointments shall be in accordance with § 67-1502, of the Code. Any appointment to fill a vacancy shall be made in the same manner as the original appointment. The remainder of any term to which a member is appointed to fill a vacancy shall not constitute a term in determining the member's eligibility for reappointment.

Section 2. Election of Chair and Vice-Chair.

The Authority shall appoint from its membership a chairman and a vice-chairman, both of whom shall serve in such capacities at the pleasure of the Authority.

Vacancies in the position of Chair or Vice-Chair shall be filled for the remainder of the term by voice vote or roll call vote of the Authority at the next meeting following the occurrence of the vacancy.

Section 3. Authority Staff and Requests for Staff Assistance

The Department of Mines, Minerals and Energy (DMME) shall serve as staff to the Authority. The Director of the DMME shall serve as Director of the Authority and shall administer the affairs and business of the Authority in accordance with the provisions of § 67-1500.

The Director shall perform such other duties as prescribed by the Authority in carrying out the purposes of this chapter.

Any Authority member may request assistance from staff provided the request has been coordinated through the Chair or Vice-Chair of the Authority.

ARTICLE IV. MEETINGS

Section 1. Regular Meetings.

The meetings of the Authority shall be held on the call of the Chairman or whenever a majority of the members so request, at such time and place as the Authority may determine. All meetings consisting of more than two members to discuss business of the Authority, whether in-person, telephonically, or by other electronic communication, shall be open to the public and shall be preceded by the notice requirements set forth in the Virginia Freedom of Information Act, § 2.2-3707 of the Code. Authority members who wish to share or request information related to Authority business to or from more than one other member should do so through Authority staff.

A majority of members of the Authority serving at any one time shall constitute a quorum for the transaction of business. No business requiring a vote or final decision of the Authority may be conducted in the absence of a quorum, as defined in Section 6 below.

Section 2. Annual Meetings.

The last regular meeting of the calendar year shall be designated as an annual meeting. Elections of officers shall be held at the Annual Meeting.

Section 3. Committee Meetings.

The Authority may establish committees from time to time as needed to carry out the work of the Authority; provided, however, that all meetings of a committee consisting of more than two members of the Authority are open to the public and be preceded by the notice requirements set forth in the Virginia Freedom of Information Act, § 2.2-3707 of the Code.

Section 4. Special Meetings.

The Chair or any three members of the Authority may call a special meeting for a specific purpose or purposes. No business shall be transacted at such special meeting except that expressly sent out in the notice of the special meeting. Special meetings consisting of more than two members of the Authority shall be open to the public and be preceded by the notice requirements set forth in the Virginia Freedom of Information Act, § 2.2-3707 of the Code.

Section 5. Notice of Meetings.

In all cases, the public shall be notified of regular and special meetings of the Authority at a time and in a manner consistent with the requirements of the Virginia Freedom of Information Act, § 2.2-3707 of the Code.

Section 6. Quorum.

For any meeting of the Authority, a simple majority of the members of the Authority shall constitute a quorum. If a quorum has not been achieved, the meeting of the Authority may proceed; provided, however, that voting on matters before the Authority shall be postponed until a meeting of the Authority at which a quorum is present.

Section 7. Conduct of Meetings.

The Chair of the Authority shall conduct the meetings of the Authority and shall rule on the interpretation and application of the Code and these bylaws.

The Vice-Chair of the Authority shall preside over meetings of the Authority in the absence of the Chair. In the event that neither the Chair nor the Vice-Chair of the Authority shall be in attendance at a meeting where a quorum is nonetheless present, any member of the Authority may call the meeting to order, and the members present shall elect a Chair pro tempore to preside over the meeting. Where a quorum is not present, a vote of the majority of those members present shall determine the Chair pro tempore.

All actions and decisions of the Authority shall be made upon the motion of a member, duly seconded by another member and approved by a majority of the members who are present and voting.

The Chair shall put the question submitted to the Authority for a voice vote and shall call for a vote only after determining that there are no more Authority members who wish to speak, or upon approval of a motion to close debate.

Any member who may not participate in the Authority's consideration of a matter under the Va. Conflicts of Interest Act must comply with the disclosure requirements of the Act and not participate in the discussion or vote on the matter.

If it appears to the Chair, upon the voice vote being taken, that the members of the Authority are divided on any question, the Chair shall determine the vote of the members by roll call. A tie vote on any matter defeats the motion or issue upon which the vote is taken. At the conclusion of the vote on the motion, the Chair shall announce whether the motion has been adopted or defeated.

Section 8. Agenda.

The proposed agenda for any meeting shall be determined by the Chair in consultation with staff. In addition, any members of the Authority may suggest items to be included on the agenda.

The agenda for regular meetings of the Authority will normally include the following: (1) review and approval of the last minutes of the Authority; (2) a status report on the work plan and action items agreed to by the Authority; (3) a status report on federal agency actions that may affect solar energy and energy storage development in Virginia; and (4) other information of interest to the Authority.

An opportunity shall be provided at each meeting of the Authority for public comment. Any person who desires to speak will be asked to provide his or her name and the matter to be addressed prior to each meeting at which the public is able to comment.

Section 9. Amendments.

The bylaws of the Authority may be amended at any regular meeting of the Authority at which a quorum is present by a majority vote.

Section 10. Rules of Order

Informal rules of order shall govern all matters of procedure unless objected to by any Authority member. If such an objection occurs, then "Robert's Rules of Order, Newly Revised" shall be the parliamentary authority for all matters of procedure not specifically covered by these bylaws.

APPENDIX J

Summary of State Corporation Commission Cases in its 9/1/2021 Report to the General Assembly

Summary of State Corporation Commission Cases in its 9/1/2021 Report to the General Assembly

Renewable Energy Cases		
Case & Va. Code	**Topic**	**Status**
PUR-2020-00122 § 56-585.1 A 6	Dominion US-3 Solar projects (RAC update)	3/30/2021 approved an annual update to the RAC for solar project
PUR-2020-00123 § 56-585.1 A 6	Dominion US-4 Solar project (RAC update)	3/30/2021 approved an annual update to the RAC for solar project
PUR-2020-00124 § 56-585.1:12	Multi-Family Solar Regulations (Dominion, KU/ODP)	12/23/2020 SCC adopted regs for subscription-based multi-family shared solar program
PUR-2020-00125 § 56-594.3	Shared Solar Regulations (Dominion, KU/ODP)	12/23/2020 SCC adopted regs for subscription-based shared solar program
PUR-2020-00134 § 56-585.5 D	2020 RPS Plan Filing (Dominion)	4/30/2021 approved 1st annual plan for VCEA RPS resources including construction of 3 solar facilities (82 MW) and six PPAs (416 MW). Directed future plans to include least cost option and environmental justice impacts.
PUR-2020-00135 § 56-585.5.D	2020 RPS Plan Filing (APCo)	4/30/2021 approved 1st annual plan for VCEA RPS resources which did not include specific resource proposals. Directed future plans to include least cost option and environmental justice impacts
PUR-2020-00170 § 56-585.1 A 5	Rider RPS (Dominion)	7/1/2021 approved to recover projected and actual costs related to compliance with mandatory RPS Program.
PUR-2020-00235 § 56-580 D	Solar Project (Cavalier Solar A, LLC)	5/27/2021 approved Cavalier to construct 240 MW solar facility in Surry County and Isle of Wight County as well as transmission lines to connect to grid.
PUR-2021-00048 § 56-585.2 E	RPS-RAC (APCo)	5/3/2021 APCo seeks approval to revise to recover residual, incremental cost related to APCo's voluntary RPS program that was in place prior to VCEA passage
PUR-2021-00085 § 56-580 D	Solar Project (Axton Solar, LLC)	4/28/2021 Axton seeks approval to construct a 201.1 MW solar facility in Henry and Pittsylvania Counites.
PUR-2021-00089 § 56-585.5 G	Accelerated Renewable Energy Buyers (Dominion, APCo)	5/12/2021 SCC established proceeding to determine if rules are necessary to implement VCEA provisions related to accelerated renewable energy buyers
PUR-2021-00118 § 56-585.1 A 6	Dominion US-3 Solar Projects (RAC update)	8/2/2021 seeks approval of annual update to its RAC
PUR-2021-00119 § 56-585.1 A 6	Dominion US-4 Solar project (RAC update)	8/2/2021 seeks approval of annual update to its RAC
PUR-2021-00138 § 56-585.1 A 6	Dominion Rider TRG update 100% Renewable tariff	7/1/2021 annual update for Rider TRG. Requests no change to the approved rate or portfolio of resources. This limits customers purchasing renewable energy from CSPs. About 2,400 customers have enrolled.

Energy Storage Cases		
Case & Va. Code	**Topic**	**Status**
PUR-2020-00120 § 56-585.5 E 5	Energy Storage Regulations	12/18/2020 approved regulations related to energy storage targets addressing BTM incentives, non-wires alternatives programs, peak demand reduction programs, and permitting of non-utility energy storage facilities
PUR-2021-00035	Energy Storage Project Pigeon Run Solar, LLC	8/13/2021 SCC approved application to construct, own & operate 20 MW battery storage system in Campbell Co.
PUR-2021-00041	Energy Storage Project Shockoe Solar, LLC	8/13/2021 SCC approved application to construct, own & operate 20 MW battery storage system in Pittsylvania Co.
Environmental Cases		
Case & Va. Code	**Topic**	**Status**
PUR-2020-00003 § 56-585.1 A 5	Dominion Rider E (update)	9/4/2020 approved update to recover coal-ash related costs for Chesterfield and Bremo Power Stations
PUR-2020-00169 § 56-585.1 A 5	Dominion Rider RGGI	8/4/2021 approved projected and actual costs related to purchase of allowances through RGGI program
PUR-2020-00258 § 56-585.1 A 5	APCo environmental RAC	8/23/2021 partially approved costs of state and federal environmental regulations at Amos and Mountaineer generating units in WV.
PUR-2021-00013 § 56-585.1 A 5	Dominion Rider E (update)	1/19/2021 seeks approval of annual update to RAC
PUR-2021-00045 § 10.1-1402.03	Dominion Rider CCR	2/26/2021 seeks approval to recover costs related to SB 1355 in 2019 session related to ash removal from several power stations
Retail Access Cases		
Case & Va. Code	**Topic**	**Status**
PUR-2020-00165 § 56-585.5 F	RPS Cost Allocation Proceeding (APCo)	12/21/2020 approved a placeholder tariff to recover non-bypassable costs associated with § 56-585.5 F, net of benefits, from customers purchasing supply from CSPs
PUR-2020-00114	Aggregation Pilot (Dominion)	12/3/2020, issued an Order providing additional notice of pilot for non-residential customers that previously sought to aggregate through § 56-577 A 4 would be permitted to purchase from CSP subject to 200 MW cap
PUR-2020-00164 § 56-585.5 F	RPS Cost Allocation Proceeding (Dominion)	9/23/2021 dismissed Rider NBC due to VCEA resources being recovered in a single mechanism and due to issues being addressed in subsequent proceedings. Determined that "net of costs" requires CSP customer RECs to be counted towards VCEA RPS compliance if such RECs meet VCEA standards.
Integrated Resource Plan		
Case & Va. Code	**Topic**	**Status**
PUR-2020-00035 § 56-585.5 F	Dominion IRP	2/1/2021 directed Dominion in future IRPs to include additional analysis to address deficiencies in the 2020 IR).