

Virginia Solar Energy
Development
Authority
Annual Report

November 18, 2016

Virginia Solar Energy Development Authority
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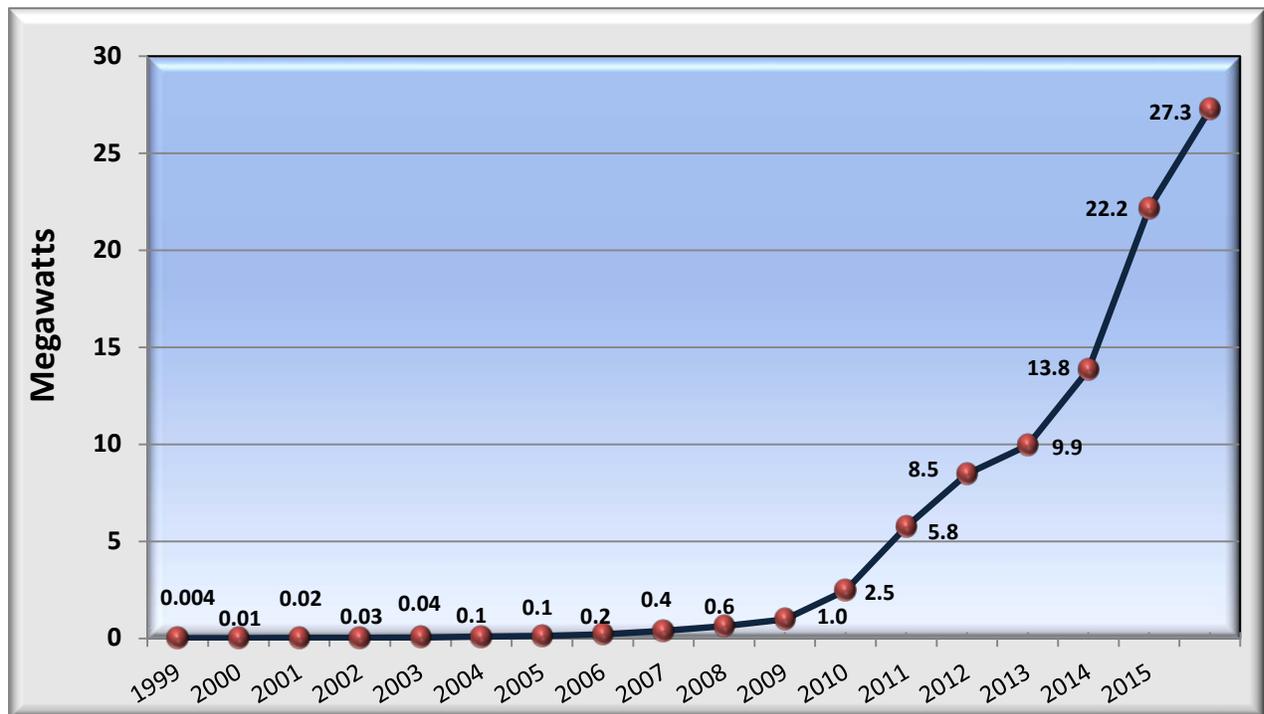
I. Overview

In 2015, the Virginia General Assembly created the Virginia Solar Energy Development Authority (“VSEDA” or “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 aims 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 can be found in **Appendix A**.

The Authority is composed of 11 non-legislative citizen members: six members were appointed by the Governor, three members by the Speaker of the House of Delegates, and two members were appointed by the Senate Committee on Rules. A listing of the appointed VSEDA members can be found in **Appendix B**.

2015 was the inaugural year for VSEDA. It was also a year of significant growth for solar development in the Commonwealth of Virginia.

Distributed solar generation (net metered) grew from approximately 1,900 installations totaling 13.8 megawatts at the beginning of 2015, to 3,200 installations totaling 27.3 megawatts at the end of September of 2016.



Growth in Net Metered Solar Generation

While distributed solar once made up the vast majority of total installed capacity, utility-scale solar has surpassed distributed projects with the completion of the 80 megawatt **Amazon Solar Farm US East** in Accomack County owned by Dominion Energy, Inc., a subsidiary of Dominion Resources Inc.

- In addition to the 80-megawatt project in Accomack, Dominion Energy, Inc. also announced a major expansion of its solar alliance with Amazon Web Services (AWS), Inc. on November 17, 2016 to add an additional 180 megawatts of solar generating capacity in five Virginia counties. Construction of the facilities will be enabled through long-term power purchase agreements between Dominion Energy, Inc., and an affiliate of Amazon's cloud computing business, AWS. The solar facilities are expected to enter service in late 2017.
 - Four 20-megawatt projects being acquired from Virginia Solar LLC in the following Virginia counties:
 - Buckingham County
 - Powhatan County
 - [New Kent County](#)
 - Sussex County
 - A 100 MW project in Southampton County, Virginia.
- **Dominion Virginia Power** also has a number of other utility-scale projects in various stages of development. Dominion has:
 - Installed over 6.5 megawatts of distributed solar as part of their Solar Partnership Program. Dominion is authorized to construct and operate up to 30 megawatts of company-owned solar facilities on leased rooftops or on the grounds of commercial businesses and public properties throughout their service area
 - Received approval from the State Corporation Commission (SCC) for three projects totaling 56 megawatts, which are now under construction
 - Applied for approval to build a 20 the megawatt Remington project in Fauquier County in partnership with Microsoft and the Commonwealth
 - Announced an 18 megawatt solar energy facility at Naval Air Station Oceana in Virginia Beach, in partnership with the Commonwealth of Virginia. As part of the Governors Solar Initiative, the Commonwealth, in partnership with Dominion Virginia Power, has committed to meeting eight percent of the electric

requirements of state facilities, or 110 megawatts, from solar. The Naval Air Station Oceana project will help achieve this goal.

- **Old Dominion Electric Cooperative (ODEC)** awarded two contracts to Hecate Energy to deliver the full output of two solar projects totaling 30 megawatts to be located in Northampton and Clarke Counties. Hecate applied to the Department of Environmental Quality (DEQ) for permitting under DEQ's Permit by Rule program and permits were awarded in August and September 2016.
- **Central Virginia Electric Cooperative** plans to build two 5 megawatt solar electric generating facilities along the Interstate 64 corridor.
- **Two municipal utilities** are moving forward with plans for multi-megawatt solar projects:
 - **The Town of Bedford** plans to advertise for a "solar franchise". The franchise will give a developer the right to develop a solar facility with the town agreeing to buy the electricity. The anticipated size of the project will be three megawatts.
 - **The City of Danville** is working with a developer to build a six megawatt solar project, with the city purchasing the output. This project is included in the Permit by Rule projects listed above, and the developer is seeking Qualified Energy Conservation Bond funding through the **VirginiaSAVES** Green Community Program.
- **Notices of Intent** to apply for permits under DEQ's Permit buy Rule program have been submitted for an additional twenty-four projects totaling 813 megawatts.

This rapid growth of the utility-scale solar industry in Virginia has the potential to bring significant benefits to the Commonwealth. It can also have negative consequences if not done responsibly. Continued engagement and support between all stakeholders is essential to ensure that Virginia develops its solar energy resource in a sustainable manner, which can support the growth in high-tech and high-paying jobs in the energy sector.

While utility-scale solar has the greatest potential for rapidly growing solar capacity, smaller distributed solar installations enabled through third-party power purchase arrangements (PPAs) are important avenues to growth for the overall solar energy market in Virginia. For example, Albemarle County Public Schools is the first public school district in Virginia to use solar energy under a PPA at six of the district's schools. The 1 Megawatt solar photovoltaic system will use over 3,000 panels to meet 22% of the six schools' annual electricity requirements. Similar projects have also enabled Eastern Mennonite University and the University of Richmond to meet a portion of their power requirements using solar energy.

A detailed list of known solar projects installed or under development as of this writing is included in **Appendix C**. These projects include net metered projects, utility projects that have been announced, completed or are under construction, and projects by independent developers who have submitted Notices of Intent to apply for a Permit by Rule from the Department of Environmental Quality.

An additional list of projects can be found in **Appendix D**. This Appendix includes projects listed in the generation interconnection queue for PJM Interconnection (PJM), the regional transmission organization in which Virginia participates.

Solar and other generators at transmission level voltages 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. It should be noted that many of these projects may also be listed in **Appendix C**.

II. VSEDA Activities to Date

VSEDA held their first meeting on December 3, 2015 in the State Capitol.

Governor Terence McAuliffe personally welcomed the Authority, thanking the Members for their service and expressing his utmost support and enthusiasm for continuing to build a greater solar industry in Virginia. The Governor firmly believes that energy policy will be a cornerstone of a New Virginia Economy, and that solar energy is one of the most critical components of this. He explained that in discussions with companies like Google, Microsoft and Amazon, he has heard a number of times that these companies would not bring any assets to states that could not provide renewable energy. He tasked VSEDA to "...think big, be bold, take chances, take risks, [and] don't be afraid to fail" in performing their mission.

As a first order of business, the Authority discussed nominations for VSEDA Chair and Vice-Chair. Mr. Barrett Hardiman was nominated to serve as Chair, and Mrs. Cliona Robb was nominated as Co-Chair. Both nominees were unanimously elected by the members present.

Following the election of officers, the Authority reviewed proposed bylaws that had been pre-drafted by Authority staff. After a brief review, two minor amendments were proposed and amended bylaws were unanimously approved by the Authority. The Authority bylaws are included in **Appendix E**.

As members of a public body, the VSEDA were required to receive training on the Virginia Conflict of Interest and Freedom of Information Acts. A Senior Assistant Attorney General from the Office of the Attorney General provided this training to the Members, who were also advised that they are required to file an annual Conflict of Interest Act Disclosure.

VSEDA Members were provided overviews from the office of the Secretary Commerce and Trade on the relevant goals from the 2014 Virginia Energy Plan, including updates regarding workforce development objectives and energy diversification goals. DMME staff briefed the VSEDA Members on a number of current projects and initiatives to support solar development planned or currently underway in the Commonwealth.

Discussion was had on whether there was possible financing available for the Authority. VSEDA's enabling legislation was not passed with an appropriation of funds, but, if in the future VSEDA is granted an appropriation, this funding would likely be housed within DMME (as DMME currently does for other similarly designed Authorities). There may be future opportunities for creative financing, in-kind incentives, or unique partnerships including, but not limited to, the Virginia Public-Private Educational Facilities Infrastructure Act (PPEA). Other funding opportunities may exist at the Federal level as well.

VSEDA Members discussed perceived barriers to increased solar energy deployment in Virginia, such as the lack of robust third-party Power Purchase Agreement projects; Virginia's voluntary renewable portfolio standard; an absence of state tax credits; net metering capacity caps; prohibitions on non-utility community solar programs; soft costs (such as consumer acquisition and other non-equipment costs); a lack of standardized guidelines for zoning, permitting, etc., between localities; and relatively low electric rates compared to neighboring states and regional averages.

While these issues may or may not negatively impact solar deployment in the Commonwealth, VSEDA members are not ready to take a policy stance or make recommendations on methods to remove perceived barriers. It should be noted that there are at least three other groups looking at issues surrounding solar for Virginia, including a Joint Subcommittee tasked with evaluating legislation, including solar legislation, carried over from the 2016 legislative session, an Advisory Committee made up from utilities, advocacy, trade, and other solar stakeholders assisting the Joint Subcommittee, and the Virginia Distributed Solar Collaborative. The VSEDA members feel it is important to hear from these and other interests before making specific recommendations on state policy. These and other groups will be invited to come before VSEDA at future meetings to inform members on their activities

Members discussed workforce development as related to the solar industry, discussing both the possible barriers to increased workforce development as well as opportunities to make workforce development a key part of the Authority's mission. It was agreed that while Virginia may not have the most robust solar workforce development programs, the Commonwealth would be able to leverage or take advantage of existing workforce development programs that are relevant to the solar industry.

Members further discussed what the Authority was well-positioned to focus on in the future. These ideas included a larger focus on how Virginia solar will help fit into the Commonwealth's plan for addressing the new Clean Power Plan and an emphasis on facilitating more residential, commercial, and utility-scale projects.

VSEDA Members heard presentations from fellow members and outside organizations on a wide variety of topics meant to help bring them up to speed on relevant issues and opportunities that will help in their future deliberations. Presentations included:

Perspectives on Solar Development

- ❖ In an effort to provide effective background on the current state of solar energy in Virginia, two Board members representing investor-owned utilities and the Virginia solar industry made presentations to the Authority offering differing perspectives on solar development in the Commonwealth.

Increasing Market Penetration of Residential Solar in Virginia

- ❖ Three JMU Students briefed the members on their Senior Capstone project which looked at solar energy installations in Virginia and the reasons driving citizens to adopt solar. They also compared total solar generation and solar jobs in Virginia, North Carolina and Maryland, and compared state policies driving the solar markets in these states.

Overview of the Governor's Solar Initiative for State Agencies

- ❖ VSEDA staff recapped the current status of solar deployment in the Commonwealth and discussed the Governor's call for 8% (110 megawatts) of state facility electric needs to be met from solar – 75% being utility-owned and operated, and 25% through 3rd party Power Purchase Agreements for systems located on state facilities. Also discussed was DMME's development of a Request for Proposals for 3rd party solar PPA projects, and possible financial incentives that might be used to reduce the costs to participating agencies. DMME will be working to overcome procurement challenges associated with PPA's and will deploy this option as authorized.

Virginia Office of Public-Private Partnerships (P3) Solar Initiative

- ❖ The Director for the Virginia Office of Public-Private Partnerships introduced VSEDA members to the history and mission of the Office of Public Private Partnerships (P3). He discussed how the P3 office and their ability under Virginia law to suspend some of the hard and fast rules of the Virginia Public Procurement Act, can help share or transfer risk, and how it can be applied to large solar energy project as is the case with large transportation infrastructure projects.
- ❖ Also discussed was a high-level screening P3 performed for the Department of Transportation on its potential to deploy solar facilities on its rights of way of facilities, and how this led to a partnership with DMME, and the subsequent engagement of the Department of Corrections and other agencies with high power demands who might benefit from solar

Clean Energy Development and Services (CEDS) Project to Support Solar

- ❖ JMU presented an interim report describing the efforts they and their contract support have made to identify those state properties held by various Commonwealth agencies that would be most appropriate for different kinds of solar deployment projects. Activities include:
 - Developing a comprehensive inventory and predevelopment analysis of facilities using data gathered from various sources, and then generating technical overview documents that correspond to some of the better sites likely be more attractive to solar developers in an RFP.
 - Examining both rooftop and ground-mounted solar facilities, and identifying advantages and disadvantages of each kind.
 - Looking at fixed mount versus tracking systems. It was pointed out that while fixed mount have historically been the more common choice, the modeling is showing that declining solar PV costs are helping to make tracking PV installations more cost effective because of the increased energy production.

Incentivizing Utilities to Invest in Distributed Solar

Anthony Smith, PhD, President and CEO of Secure Futures, LLC, presented ideas for a possible new, collaborative business model that can help to overcome major hurdles to encouraging solar development and that incentivizes utilities to invest in distributed solar at both the residential and commercial scale.

Mr. Smith discussed how under the current regulatory ground rules, distributed solar results in a net loss for utilities because their business model is to earn a return on investment for

generation capacity. The proposed new model involves looking for opportunities for the utilities to invest in, and receive a return on investment for solar distributed generation owned by others, rather than the traditional cost of service model for central generation facilities. Mr. Smith believes that by offering the utility a below market rate market return on their investment in distributed solar, complimented by a ratepayer return less than they are currently investing for central generation, the combined return would be twelve percent, which is 20 percent higher than the return on investment for central generation facilities.

By utilities becoming investment partners in distributed solar projects owned and operated by homeowners or third-party private developers, Mr. Smith contends this new model can result in benefits for all parties:

- Utilities receive a higher return on investments
- Lower cost to solar customers
- Lower stranded costs for non-participants
- Increased business opportunities for the solar industry and jobs for Virginia.

III. Future Goals and Activities

As stated in Section II, VSEDA members do not feel they are ready at this time to take a policy stance or make recommendations on methods to remove perceived barriers. Instead they have developed the following list of Future Goals and Activities they plan to address over the next year:

- Develop a recommendation by summer 2017 for a funding appropriation in 2018 General Assembly session to help enable the following VSEDA goals and activities.
- Continue to engage with stakeholders to identify avenues for increased solar deployment to meet the recommendations from the Virginia Energy Plan to:
 - Facilitate partnerships between Virginia's electric utilities, government and private generation developers to install 15MW of solar energy generation at state and local government facilities
 - Facilitate the installation of an additional 15MW of solar energy generation at commercial, industrial, and residential facilities
- The Commonwealth should continue to identify and remove barriers to the use of Power Purchase Agreements for deployment of solar at state facilities, and to the use of state land for third-party solar development

- Support outreach to local officials to assist them in addressing land use or other issues that affect the development of solar while also protecting the interests of the locality
- Explore modeling and case studies on local considerations for solar projects, approved or otherwise, and the economic impacts stemming from the conversion of agricultural land to solar
- Continue to investigate, analyze, and raise awareness about perceived barriers to expanding solar in Virginia, and explore possible remedies
- Explore possible pathways to net metering reform and expansion to enable a more sustainable construct
- Evaluate programs that can expand access to solar energy for all customers in Virginia
- Collaborate with relevant stakeholders to determine how expanded solar deployment can contribute to the development and implementation of Virginia’s carbon reduction goals
- Continue to explore and facilitate the use of creative financing mechanisms that can expedite and expand solar deployment, including but not limited to the use of Qualified Energy Conservation Bonds through programs such as the **VirginiaSAVES** Green Community Program.
- Maintain and update information on installed solar capacity, economics and environmental impacts
- Provide technical support to state and local economic development entities and identify financial incentives that may be available to help support solar development and create Virginia jobs
- Support the expanded use of partnerships, such as public-private partnerships, between state agencies, utilities, and third parties, including to help meet the Governor’s eight percent renewable energy goal for state government operations.

APPENDIX A

Enabling Legislation

Code of Virginia

Title 67. Virginia Energy Plan

Chapter 15. Virginia Solar Energy Development Authority

§ 67-1500. (Expires July 1, 2025) Definitions.

As used in this chapter, unless the context requires a different meaning:

"Authority" means the Virginia Solar Energy Development Authority created pursuant to this chapter.

"Developer" means any private developer of solar energy projects.

"Solar energy project" means an electric generation facility located within the Commonwealth and includes interests in land, improvements, and ancillary facilities.

2015, cc. 90, 398.

§ 67-1501. (Expires July 1, 2025) Authority created; purpose.

The Virginia Solar Energy Development Authority is created as a body corporate and a political subdivision of the Commonwealth and as such shall have, and is vested with, all of the politic and corporate powers as are set forth in this chapter. The Authority is established 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 by developing programs that 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, both public and private, to partner on solar energy projects. The Authority may also consult with research institutions, businesses, nonprofit organizations, and stakeholders as the Authority deems appropriate. The Authority shall have only those powers enumerated in this chapter.

2015, cc. 90, 398.

§ 67-1502. (Expires July 1, 2025) Membership; terms; vacancies; expenses.

- A. The Authority shall be composed of 11 nonlegislative citizen members appointed as follows: Six members shall be appointed by the Governor; three members shall be appointed by the Speaker of the House of Delegates; and two members shall be appointed by the Senate Committee on Rules. All members of the Authority shall reside

in the Commonwealth. Members may include representatives of solar businesses, solar customers, renewable energy financiers, state and local government solar customers, and solar research academics.

- B. Except as otherwise provided herein, 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 initial appointments of members by the Governor shall be as follows: two members shall be appointed for terms of four years, two members shall be appointed for terms of three years, and two members shall be appointed for terms of two years. The initial appointments of members by the Speaker of the House of Delegates shall be as follows: one member shall be appointed for a term of four years, one member shall be appointed for a term of three years, and one member shall be appointed for a term of two years. The initial appointments of members by the Senate Committee on Rules shall be as follows: one member shall be appointed for a term of four years, and one member shall be appointed for a term of three years. Thereafter all appointments shall be for terms of four years.
- D. 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. The chairman, or in his absence the vice-chairman, shall preside at all meetings 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.
- E. 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 such funds as may be appropriated to the Authority by the General Assembly.
- F. 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.

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

2015, cc. 90, 398.

§ 67-1503. (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 these matters to facilitate appropriate partnerships, including public-private partnerships.

2015, cc. 90, 398.

§ 67-1504. (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 Energy Policy Act of 2005, 42 U.S.C. § 16511 et seq., the 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 federal loan guarantees for solar energy projects pursuant to subsection A, the Authority, subject to any restrictions imposed by federal law, may allocate or assign all or portions thereof to qualified third parties, on such terms and conditions as the Authority finds are appropriate. Actions of the Authority relating to the allocation and assignment of such loan guarantees 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. Decisions of the Authority shall be final and not subject to review or appeal.

2015, cc. 90, 398.

§ 67-1505. (Expires July 1, 2025) Powers and duties of the Authority.

In addition to such other powers and duties established under this chapter, the Authority shall have 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 such place or places within the Commonwealth as it may designate;
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 created;
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 such other employees and agents as may be 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 state, and from any municipality, county, or other political subdivision thereof and 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 herein granted or reasonably implied;
11. Identify and take steps to mitigate existing state and regulatory or administrative barriers to the development of the solar energy industry, including facilitating any permitting processes;
12. Enter into interstate partnerships to develop the solar energy industry and solar

energy projects;

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

2015, cc. 90, 398.

§ 67-1506. (Expires July 1, 2025) Director; staff; counsel to the Authority.

- A. The Director of the Department of Mines, Minerals and Energy shall serve as Director of the Authority and shall administer the affairs and business of the Authority in accordance with the provisions of this chapter 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 this support may be provided by any source, public or private, for the purposes for which the Authority is created. The Director shall maintain, and be 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 all persons dealing with the Authority may rely on such certificates. The Director also shall perform such other duties as prescribed by the Authority in carrying out the purposes of this chapter.
- B. The Department of Mines, Minerals and Energy shall serve as staff to the Authority.
- C. The Office of the Attorney General shall provide counsel to the Authority. 2015, cc. 90, 398.

§ 67-1507. (Expires July 1, 2025) Annual report.

On or before October 15 of each year, beginning in 2016, the Authority shall submit an annual summary of its activities and recommendations to the Governor and the Chairmen of the House Appropriations Committee, the Senate Finance Committee, and the House and Senate Commerce and Labor Committees.

2015, cc. 90, 398.

§ 67-1508. (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.
- 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 persons or entities applying for or receiving allocations of federal loan guarantees, as well as specific information relating to the amount and identity of recipients of such distributions, shall be subject to disclosure in accordance with the Virginia Freedom of Information Act (§ 2.2-3700 et seq.).

2015, cc. 90, 398.

§ 67-1509. (Expires July 1, 2025) Declaration of public purpose; exemption from taxation.

- A. The exercise of the powers granted by this chapter 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 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 chapter.

2015, cc. 90, 398.

APPENDIX B

Virginia Solar Energy Development Authority Members

Virginia Solar Energy Development Authority Members

Member/Address	Area Represented	Terms Served	Term Expires
William D. Carmack CFO, SW VA Higher Education Center	Non-legislative Citizen	Governor Appointment 2-year term effective 7/1/15	6/30/17
Michael Barrett Hardiman (Chair) Director of Government Relations Luck Companies	Non-legislative Citizen	Governor Appointment 4-year term effective 7/1/15	6/30/19
Sylvain Marsillac, PhD Professor, Dept. of Electrical & Computer Engineering, Old Dominion University	Non-legislative Citizen	Governor Appointment 3-year term effective 7/1/25	6/30/18
Careth Cody Apperson Nystrom Managing Director, SJF Ventures	Non-legislative Citizen	Governor Appointment 3-year term effective 7/1/15	6/30/18
Cliona Mary Robb (Vice Chair) Partner, Christian & Barton, LLP	Non-legislative Citizen	Governor Appointment 4-year term effective 7/1/15	6/30/19
Dawone Robinson Natural Resources Defense Council	Non-legislative Citizen	Governor Appointment 2-year term effective 7/1/15	6/30/17
Jon F. Hillis CEO, SolUnesco	Non-legislative Citizen	Speaker of the House Appointment	6/30/19
John H. Rust, Jr. Commissioner CoA-FFX	Non-legislative Citizen	Speaker of the House Appointment	6/30/18
Ryan L. Dunn Executive Vice President of Corporate and Government Affairs Virginia Chamber of Commerce	Non-legislative Citizen	Speaker of the House Appointment	6/30/17
Kenneth G. Hutcheson Director of Government Affairs Williams Mullen	Non-legislative Citizen	Senate Committee on Rules Appointment	6/30/18
Katharine Bond Director of Public Policy Dominion Resources	Non-legislative Citizen	Senate Committee on Rules Appointment	6/30/17

APPENDIX C

Known Solar Projects in Virginia

The following tables list solar energy projects and capacity installed or under development in Virginia.

Distributed (Net Metered) Solar

System Owner	Location	Capacity (MW)
3,476 Distributed Individual Utility Customers	Distributed Across State	
	Total:	27.3

Behind-the-Meter - Not Net Metered.

System Owner	Location	Capacity (MW)
Norfolk Naval "Monkey Bottom"	Norfolk Naval Base	2
Dept. Military Affairs	Ft. Pickett	0.55
	Total:	2.55

Large Scale - Utility Owned

System Owner	Location	Capacity (MW)
Dominion - Scott Solar*	Powhatan County	17
Dominion - Whitehouse Solar*	Louisa County	20
Dominion - Woodland Solar Center*	Isle of Wight County	19
Remington (energy only to COV)	Fauquier County	20
Naval Air Station Oceana (energy & RECs to COV)	Virginia Beach	18
*Under Construction **Project Complete	Total:	94

Large Scale - Non-Utility Projects

Owner/Developer	Location	Capacity (MW)
Dominion Energy, Inc./Community Energy Solar**	Accomack County	80
Virginia Solar	Louisa County	88.2
SunPower Corporation	James City County	35
SolUnesco	Caroline	15
SolUnesco	Orange County	61.5
SolUnesco	Albemarle Co.	11
SolUnesco	Henry County	20
SunPower Corporation	Southampton	91
Sun Energy 1	Hanover	20
Solar Access Development Group	Culpepper	20
Dominion Energy, Inc./Scott II Solar LLC	Powhatan	20
Twittys Creek Solar LLC	Charlotte	15
Dominion Energy, Inc./Sappony Solar LLC	Sussex	20
Dominion Energy, Inc./Correctional Solar LLC*	New Kent	20
Dominion Energy, Inc./Southampton Solar LLC	Southampton	100
Bluestone Farm Solar, LLC	Mecklenburg	49.9
SolUnesco	Mecklenburg	76.8
TurningPoint Energy	Pittsylvania	6
Tradewind Energy Chesapeake Solar LLC	Chesapeake	20
Tradewind Energy Myrtle Solar LLC	Suffolk	15
Tradewind Energy Centerville Pike Solar	Chesapeake	15
Ecoplexus	Isle of Wight County	14
SunTech Solar Solutions	Accomack	20
Coronal Development Essex Solar Center	Essex	20
Dominion Energy, Inc./Virginia Solar LLC – Buckingham Solar I LLC*.	Buckingham	20
SolUnesco	Greensville	60
*Permit received from DEQ **Project Complete	Total:	933.4

Projects Announced by Cooperatives

Cooperative	Location	Capacity (MW)
Old Dominion Electric Cooperative*	Northampton	20
Old Dominion Electric Cooperative*	Clarke County	10
Central Virginia Electric Cooperative	Goochland	5
Central Virginia Electric Cooperative	??	5
BARC Electric Cooperative	Fauquier county	0.55
*Permit received from DEQ	Total:	40.55

Projects Announced by Municipal Utilities

Municipality	Capacity (MW)
Town of Bedford	3
City of Danville	6
TOTAL:	9

Dominion Solar Partnership Projects

Project Site	Location	Capacity (MW)
Canon	Gloucester	0.50
Old Dominion University	Norfolk	0.13
Capital One	Chester	0.50
Virginia Union University	Richmond	0.05
Prologis Concorde Center	Sterling	0.75
Randolph-Macon College	Ashland	0.05
Philip Morris Park 500	Chester	2.00
Western Branch High School	Chesapeake	0.81
Merck	Elkton	1.51
University of Virginia	Charlottesville	0.38
	Total:	6.68

Third-Party Power Purchase Agreements

Project Site	Location	Capacity (MW)
Eastern Mennonite University	Harrisonburg	0.092
Washington and Lee University	Lexington	0.39
University of Richmond	Richmond	0.187
Albemarle High School	Charlottesville	0.112
Baker-Butler Elementary (Charlottesville)	Charlottesville	0.199
Brownsville Elementary	Crozet	0.107
Monticello High School (Charlottesville)	Charlottesville	0.219
Sutherland Middle School (Charlottesville)	Charlottesville	0.224
Greer Elementary (Charlottesville)	Charlottesville	0.056
Lylburn Downing Middle School (Lexington)	Lexington	0.084
	Total:	1.67

Total Megawatts Currently Installed: 174

Megawatts Under Development: 941

APPENDIX D

Solar Projects in the PJM Generation Interconnection Queue

Project Name	MW	County	In Service Date	Feasibility Study	System Impact Study	Facility Impact Study
Boykins-Handsome 115kV	100	Washington	2016 Q3	Complete	Complete	In Progress
Hopewell-Surry 230kV	80	Prince George	2016 Q2	Complete	Complete	In Progress
Brink-Trego 115kV	19.8	Greensville	2017 Q4	Complete	Complete	In Progress
Brink-Trego 115kV	19.8	Greensville	2017 Q4	Complete	Complete	In Progress
Saltville-Holston 34.5kV - Phase I	5	Smyth	2017 Q2	Complete	Complete	not required
Saltville-Holston 34.5kV - Phase II	5	Smyth	2017 Q4	Complete	Complete	not required
Boykins 115kV	60	Southampton	2018 Q4	Complete	Complete	
Doubs 230kV	80	Frederick	2019 Q2	Complete	In Progress	
Westmoreland 34.5kV	20	Westmoreland	2016 Q3	Complete	In Progress	
Old Church 34.5kV	20	Hanover	2016 Q3	Complete	In Progress	
Chickahominy 34.5kV	20	Unknown	2016 Q4	Complete	In Progress	
Culpeper 34.5kV	15	Unknown	2017 Q4	Complete	In Progress	
Franklin 115kV	91	Southampton	2018 Q4	Complete	In Progress	
Brink-Trego 115kV	20	Greensville	2018 Q1	Complete	In Progress	
Bakers Pond-Ivor 115kV	85	Southampton	2018 Q4	Complete	In Progress	
Brink 115kV	80	Greensville	2018 Q3	Complete	In Progress	
Chase City 115kV	49.9	Mecklenburg	2018 Q4	Complete	In Progress	
Culpeper 34.5kV	20	Culpeper	2017 Q4	Complete	In Progress	
Culpeper 34.5kV	20	Culpeper	2017 Q4	Complete	In Progress	
Chase City-Gary 115kV	80	Mecklenburg	2018 Q2	Complete	In Progress	
Unionville 115kV	20	Orange	2018 Q1	Complete	In Progress	
Arnold's Corner 34.5kV	20	King George	2017 Q3	Complete	In Progress	
Black Branch-Chase City 115kV #1	20	Mecklenburg	2018 Q3	Complete	In Progress	
Black Branch-Chase City 115kV #2	20	Mecklenburg	2018 Q3	Complete	In Progress	
Black Branch-Chase City 115kV #3	20	Mecklenburg	2018 Q3	Complete	In Progress	
Beechwood 115kV	20	Mecklenburg	2018 Q2	Complete	In Progress	
Chase City 34.5kV	36	Mecklenburg	2018 Q2	Complete	In Progress	
Clubhouse-Lakeview 230kV	100	Greensville	2019 Q4	Complete	In Progress	
Hopewell-Surry 230kV	167.5	Surry	2018 Q2	Complete	In Progress	
Clubhouse-Freeman 115kV	40	Greensville	2017 Q4	Complete	In Progress	
Myrtle-Windsor 115kV	50	Isle of Wight	2017 Q4	Complete	In Progress	
Clubhouse-Freeman 115kV	40	Greensville	2017 Q4	Complete	In Progress	
Louisa-South Anna 230kV	88.2	Louisa	2018 Q4	Complete	In Progress	
Reams 115kV	80	Dinwiddie	2019 Q2	Complete	In Progress	
Waverly #2 DP 115kV	50	Sussex	2019 Q2	Complete	In Progress	
Handsome 115kV	75	Southampton	2018 Q4	Complete	In Progress	
Emporia-Trego 115kV	80	Greensville	2018 Q4	Complete	In Progress	
Hopewell-Surry 230kV	240	Prince George	2017 Q2	Complete	In Progress	
Laurel 69kV	85	Sussex	2019 Q2	Complete	In Progress	
Tasley 69kV	10	Accomack	2017 Q2	Complete	In Progress	
Correctional 34.5kV	20	New Kent	2016 Q3	Complete	Not Required	Not Required
Sapony 34.5kV	20	Sussex	2017 Q3	Complete	Not Required	Not Required
Powhatan 34.5kV	20	Powhatan	2017 Q3	Complete	Not Required	Not Required
Remington 34.5kV	19.8	Fauquier	2017 Q3	Complete	Not Required	Not Required
Buckingham 34.5kV	19.8	Buckingham	2017 Q3	Complete	Not Required	Not Required
Stockton 34.5kV	20	Henry	2018 Q2	In Progress		
Crittenden 34.5kV	10	Isle of Wight	2017 Q4	In Progress		
Pendleton 34.5kV	17.6	City of Virginia Beach	2017 Q4	In Progress		
Twittys Creek 34.5kV	15	Charlotte	2017 Q4	In Progress		

Altavista-Mt. Airy 69kV	50	Pittsylvania	2019 Q4	In Progress		
Mountain Run-Rex DP 115kV	100	Culpeper	2019 Q4	In Progress		
King's Fork 34.5kV	15	City of Suffolk	2017 Q4	In Progress		
Fentress 34.5kV	15	City of Chesapeake	2017 Q4	In Progress		
Hickory 34.5kV	20	City of Chesapeake	2017 Q4	In Progress		
Harmony Village-Shackleford 115kV	50	King and Queen	2019 Q4	In Progress		
Stuarts Draft 23kV	20	Augusta	2018 Q4	In Progress		
Perth 115kV	60	Halifax	2018 Q2	In Progress		
Locust Grove-Paytes 115kV	62.5	Orange	2018 Q2	In Progress		
Perth 115kV	20	Halifax	2018 Q2	In Progress		
Smith Mountain-Bearskin 138kV	100	Pittsylvania	2017 Q4	In Progress		
Halifax-Mt. Laurel 115kV	51	Halifax	2018 Q3	In Progress		
Chase City 115kV	49.9	Mecklenburg	2018 Q4	In Progress		
Old Church 34.5kV	17	King William	2018 Q4	In Progress		
Westmoreland 34.5kV	20	Westmoreland	2018 Q4	In Progress		
Gretna DP 69kV	50	Pittsylvania	2018 Q4	In Progress		
Chatham 69kV	15	Pittsylvania	2018 Q3	In Progress		
Tasley 69kV	20	Accomack	2019 Q1	In Progress		
Tasley 69kV	14	Accomack	2017 Q2	In Progress		
Megawatts Total	3,063.80					

APPENDIX E

Bylaws

Virginia Solar Energy Development Authority

Bylaws

ARTICLE I. APPLICABILITY

Section 1. General.

The provisions of these Bylaws are applicable to all proceedings of the Virginia Solar Energy Development 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 industry, solar energy projects, and associated supply chain vendors, among other such duties.

ARTICLE II. AUTHORITY OBJECTIVES

Section 1. General.

The Virginia Solar Energy Development 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) identifying existing state and regulatory or administrative barriers to, or opportunities for, the development of the solar energy industry; (ii) collaborating with entities such as higher education institutions to increase the training and

development of the workforce needed by the solar industry in Virginia, including industry-recognized credentials and certifications; (iii) applying to the U.S. Department of Energy for loan guarantees for such projects; and (iv) performing any other activities as may seem appropriate to increase solar energy generation in Virginia 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.

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 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.