

COMMONWEALTH OF VIRGINIA



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STATE CORPORATION COMMISSION

October 29, 2014

BY ELECTRONIC MAIL

The Honorable John S. Edwards
Member, Senate of Virginia
Patron of SB 580
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The Honorable John C. Watkins
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The Honorable Terry G. Kilgore
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Chairman, House Committee on Commerce and Labor
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BY ELECTRONIC MAIL AND USPS

Susan Clarke Schaar
Clerk of the Senate of Virginia
P.O. Box 396
Richmond, VA 23218
sschaar@senate.virginia.gov

Dear Sirs and Madam:

This correspondence provides the background and conclusions of a letter study requested by the Virginia Senate and performed by the Commission Staff.

Background

On March 13, 2014, the Clerk of the Senate sent a letter to the State Corporation Commission ("Commission") at the request of the Senate Committee on Commerce and Labor ("Commerce & Labor") to study the subject matter contained in Senator Edwards' proposed SB 580 (Attachment 1). As introduced, SB 580 required the Commission to establish and

maintain a market-based renewable energy registration and tracking system to facilitate the creation and transfer of renewable energy certificates ("RECs") consistent with and to operate in conjunction with the trading system developed by PJM Interconnection, LLC ("PJM") referred to as PJM Generation Attribute Tracking System. SB 580 further required the Commission to establish requirements for documentation and verification of RECs by licensed electric suppliers and other renewable energy generators that create and receive certificates for compliance with renewable energy portfolio goals.

The Staff's Study Process

In developing a response on the study of SB 580, the Commission Staff ("Staff") received input from Dominion Virginia Power ("DVP"), MeadWestvaco ("MWV"), Secure Futures and PJM-Environmental Information Services ("PJM-EIS"), an affiliate of the regional transmission organization PJM whose function is to track all generation within PJM's regional footprint and associated RECs attributed to such generation using its established and functioning Generation Attribute Tracking System ("GATS"). PJM-EIS also provides reporting and tracking services of both emissions data and RECs. Services are administered by PJM-EIS through GATS, which is owned and operated by PJM-EIS.

This collaborative effort resulted in the development of an administrative process, similar to the administrative process used in some states served by PJM, to enable renewable generators in Virginia to participate via GATS in the REC market within PJM. As part of the Virginia administrative process, the Staff, with contributions from DVP, MWV, Secure Futures and PJM-EIS established criterion and parameters for the registration and tracking of eligible generators and qualifying RECs in business rules, which are supportable by all of the participants and the Staff, and could be accommodated by PJM-EIS, and subsequently submitted to the Commission for consideration ("proposed business rules") (Attachment 2).

The Proposed Business Rules Work With the PJM-EIS Administrative Process

The proposed business rules partners with an administrative process for the registration and tracking of RECs consistent with and operating in conjunction with the PJM GATS system. The foundation of this administrative process is PJM-EIS, a wholly owned subsidiary of PJM Technologies, Inc., formed to provide regional environmental and emissions attributes reporting and tracking services to its subscribers in support of renewable energy portfolio standards ("RPS") and other information disclosure requirements. PJM-EIS owns and administers the GATS, which is capitalized independently of PJM and supported solely by GATS users who subscribe and enter into a user agreement to access and use the system. This subscriber agreement defines the user fee structure, terms of use and business guidelines. Any qualifying generator or licensed electric supplier may contact PJM-EIS, subscribe and register its energy output and associated RECs. Upon satisfying the eligibility requirements for facility certification within the proposed business rules, or receiving a certification exemption from the Commission, PJM-EIS will assign a Virginia certification number to track the generator's renewable energy output and associated RECs fueled by a renewable energy source. GATS will apply the Virginia certification numbers automatically for most generators indicating that the generator is Virginia

eligible; that is, eligible for its RECs to be retired for compliance with the Virginia RPS. Such RECs also may be traded within the PJM REC market to satisfy other state RPS compliance if the RECs meet the required eligibility conditions as defined by those states.

The administrative process outlined above along with the facility eligibility requirements in the proposed business rules enables renewable generators in Virginia as well as licensed electric suppliers that create and receive certificates for compliance with renewable energy goals to actively participate within the PJM REC market. The Commission and its Staff believe that teaming with PJM-EIS and using the GATS is the effective way to establish a transparent process for the registering and tracking of RECs. The Commission and its Staff also believe that the administrative process, in conjunction with the proposed business rules, will efficiently and cost-effectively fulfill the intent of the proposed SB 580 and eliminate the need to establish a separate registry and tracking system for use in Virginia, as suggested by the proposed legislation. Hence, it appears a separate tracking system in Virginia will not be necessary as the PJM-EIS GATS tool is perfectly adequate for providing transparency that SB 580 was intended to address.

Conclusion

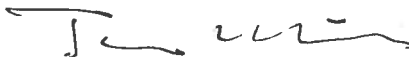
The Commission and its Staff believe that the Commission-based registry and tracking process proposed in SB 580 is not necessary at this time and submits, alternatively, the administrative process and proposed business rules to Commerce & Labor for consideration. The proposed business rules, in conjunction with the administrative process, will efficiently and cost-effectively fulfill the intent of SB 580 and eliminate the need to establish a separate registry and tracking system through the Commission as suggested in the proposed legislation. When appropriate, the Staff will work with PJM-EIS to modify its GATS to incorporate Virginia's eligibility requirements and proposed business rules and then proceed to implement them as soon as practicable.

Please let us know if you need additional information or assistance.

Respectfully submitted,



Judith Williams Jagdmann, Chairman



James C. Dimitri, Commissioner



Mark C. Christie, Commissioner

Attachments

Attachment 1

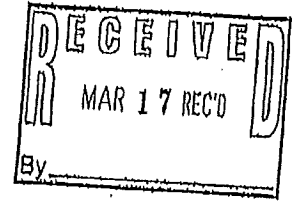
COMMONWEALTH OF VIRGINIA

SUSAN CLARKE SCHAAR
CLERK OF THE SENATE
P.O. BOX 380
RICHMOND, VIRGINIA 23210



SENATE

March 13, 2014



James C. Dimitri, Commissioner
State Corporation Commission
1300 E. Main Street
Richmond, VA 23218

Dear Mr. Dimitri:

This is to inform you that, pursuant to Rule 20 (c) of the Rules of the Senate of Virginia, the Senate Committee on Commerce and Labor has referred the subject matter contained in SB 580 to the State Corporation Commission for study. It is requested that the appropriate committee chair and bill patron receive a written report, with a copy to this office, by November 1, 2014.

With kind regards, I am

Sincerely yours,

A handwritten signature in cursive script that reads "Susan Clarke Schaar".

Susan Clarke Schaar

SCS:dhl

cc: Sen. Richard L. Saslaw, Chair, Senate Committee on Commerce and Labor
Sen. John S. Edwards, Patron of SB 580
Franklin D. Munyan, Division of Legislative Services

2014 SESSION

SB 580 Electric utility regulation; renewable energy portfolio standard program, etc.

Introduced by: John S. Edwards | [all patrons](#) ... [notes](#) | [add to my profiles](#)

SUMMARY AS INTRODUCED:

Renewable energy portfolio standard program; renewable energy certificate registration and tracking system. Requires the State Corporation Commission to establish a system for registering and tracking renewable energy certificates in order to facilitate the creation and transfer of such certificates. To the extent practicable, the system shall be consistent with and operate in conjunction with the system developed by PJM Interconnection LLC. The system shall include a registry of information regarding available renewable energy certificates and renewable energy certificate transactions. The measure establishes limits on the duration of a renewable energy certificate. The Commission is also directed to establish requirements for documentation and verification of renewable energy certificates by licensed energy suppliers and renewable energy generators, including net energy metering program participants. The measure eliminates provisions for double or triple credit toward meeting the renewable energy portfolio standard for energy derived from specific renewable energy sources, except that a utility will receive double credit toward meeting the standard for energy derived from onshore wind obtained via power purchase agreements entered into prior to January 1, 2013.

FULL TEXT

- [01/10/14 Senate: Presented and ordered printed 14103257D pdf](#)
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HISTORY

- [01/10/14 Senate: Presented and ordered printed 14103257D](#)
 - [01/10/14 Senate: Referred to Committee on Commerce and Labor](#)
 - [02/03/14 Senate: Passed by indefinitely in Commerce and Labor with letter \(16-Y 0-N\)](#)
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2014 SESSION

14103257D

SENATE BILL NO. 580

Offered January 10, 2014

A BILL to amend and reenact § 56-585.2 of the Code of Virginia, relating to electric utility regulation; renewable energy portfolio standard program; implementation of a registration and tracking system for renewable energy certificates.

Patron-- Edwards

Referred to Committee on Commerce and Labor

Be it enacted by the General Assembly of Virginia:

1. That § 56-585.2 of the Code of Virginia is amended and reenacted as follows:

§ 56-585.2. Sale of electricity from renewable sources through a renewable energy portfolio standard program.

A. As used in this section:

"Qualified investment" means an expense incurred in the Commonwealth by a participating utility in conducting, either by itself or in partnership with institutions of higher education in the Commonwealth or with industrial or commercial customers that have established renewable energy research and development programs in the Commonwealth, research and development activities related to renewable or alternative energy sources, which expense (i) is designed to enhance the participating utility's understanding of emerging energy technologies and their potential impact on and value to the utility's system and customers within the Commonwealth; (ii) promotes economic development within the Commonwealth; (iii) supplements customer-driven alternative energy or energy efficiency initiatives; (iv) supplements alternative energy and energy efficiency initiatives at state or local governmental facilities in the Commonwealth; or (v) is designed to mitigate the environmental impacts of renewable energy projects.

"Renewable energy" shall have the same meaning ascribed to it in § 56-576, provided such renewable energy is (i) generated in the Commonwealth or in the interconnection region of the regional transmission entity of which the participating utility is a member, as it may change from time to time, and purchased by a participating utility under a power purchase agreement; provided, however, that if such agreement was executed on or after July 1, 2013, the agreement shall expressly transfer ownership of renewable attributes, in addition to ownership of the energy, to the participating utility; (ii) generated by a public utility providing electric service in the Commonwealth from a facility in which the public utility owns at least a 49 percent interest and that is located in the Commonwealth, in the interconnection region of the regional transmission entity of which the participating utility is a member, or in a control area adjacent to such interconnection region; or (iii) represented by renewable energy certificates. "Renewable energy" shall not include electricity generated from pumped storage, but shall include run-of-river generation from a combined pumped-storage and run-of-river facility.

"Renewable energy certificate" means either (i) a certificate issued by an affiliate of the regional transmission entity of which the participating utility is a member, as it may change from time to time, or any successor to such affiliate, and held or acquired by such utility, that validates the generation of renewable

energy by eligible sources in the interconnection region of the regional transmission entity or (ii) a certificate issued by the Commission pursuant to subsection J and held or acquired by a participating utility, that validates a qualified investment made by the participating utility.

"Renewable energy generator" includes a person that owns and operates, or contracts with other persons to own, operate, or both, an electrical generating facility that uses as its total source of fuel renewable energy as defined in § 56-576, without regard to whether the facility is net energy metered under a program authorized by § 56-594 or is interconnected with a participating utility's transmission and distribution facilities without being net energy metered.

"Total electric energy sold in the base year" means total electric energy sold to Virginia jurisdictional retail customers by a participating utility in calendar year 2007, excluding an amount equivalent to the average of the annual percentages of the electric energy that was supplied to such customers from nuclear generating plants for the calendar years 2004 through 2006.

B. Any investor-owned incumbent electric utility may apply to the Commission for approval to participate in a renewable energy portfolio standard program, as defined in this section. The Commission shall approve such application if the applicant demonstrates that it has a reasonable expectation of achieving 12 percent of its base year electric energy sales from renewable energy sources during calendar year 2022, and 15 percent of its base year electric energy sales from renewable energy sources during calendar year 2025, as provided in subsection D.

~~C. It is in the public interest for utilities that seek to have a renewable energy portfolio standard program to achieve the goals set forth in subsection D, such goals being referred to herein as "RPS Goals." A utility shall receive double credit toward meeting the renewable energy portfolio standard for energy derived from sunlight, from onshore wind, or from facilities in the Commonwealth fueled primarily by animal waste, and triple credit toward meeting the renewable energy portfolio standard for energy derived from offshore wind obtained via power purchase agreements entered into prior to January 1, 2013.~~

D. Regarding any renewable energy portfolio standard program, the total electric energy sold by a utility to meet the RPS Goals shall be composed of the following amounts of electric energy or renewable thermal energy equivalent from renewable energy sources, as adjusted for any sales volumes lost through operation of the customer choice provisions of subdivision A 3 or A 4 of § 56-577:

RPS Goal I: In calendar year 2010, 4 percent of total electric energy sold in the base year.

RPS Goal II: For calendar years 2011 through 2015, inclusive, an average of 4 percent of total electric energy sold in the base year, and in calendar year 2016, 7 percent of total electric energy sold in the base year.

RPS Goal III: For calendar years 2017 through 2021, inclusive, an average of 7 percent of total electric energy sold in the base year, and in calendar year 2022, 12 percent of total electric energy sold in the base year.

RPS Goal IV: For calendar years 2023 and 2024, inclusive, an average of 12 percent of total electric energy sold in the base year, and in calendar year 2025, 15 percent of total electric energy sold in the base year.

A utility may not apply renewable energy certificates issued pursuant to subsection J to meet more than 20 percent of the sales requirement for the RPS Goal in any year.

A utility may apply renewable energy sales achieved or renewable energy certificates acquired during the periods covered by any such RPS Goal that are in excess of the sales requirement for that RPS Goal to the sales requirements for any future RPS Goal.

E. A utility participating in such program shall have the right to recover all incremental costs incurred for the purpose of such participation in such program, as accrued against income, through rate adjustment clauses as provided in subdivisions A 5 and A 6 of § 56-585.1, including, but not limited to, administrative costs, ancillary costs, capacity costs, costs of energy represented by certificates described in subsection A, and, in the case of construction of renewable energy generation facilities, allowance for funds used during construction until such time as an enhanced rate of return, as determined pursuant to subdivision A 6 of § 56-585.1, on construction work in progress is included in rates, projected construction work in progress, planning, development and construction costs, life-cycle costs, and costs of infrastructure associated therewith, plus an enhanced rate of return, as determined pursuant to subdivision A 6 of § 56-585.1. This subsection shall not apply to qualified investments as provided in subsection K. All incremental costs of the RPS program shall be allocated to and recovered from the utility's customer classes based on the demand created by the class and within the class based on energy used by the individual customer in the class, except that the incremental costs of the RPS program shall not be allocated to or recovered from customers that are served within the large industrial rate classes of the participating utilities and that are served at primary or transmission voltage.

F. A utility participating in such program shall apply towards meeting its RPS Goals any renewable energy from existing renewable energy sources owned by the participating utility or purchased as allowed by contract at no additional cost to customers to the extent feasible. A utility participating in such program shall not apply towards meeting its RPS Goals renewable energy certificates attributable to any renewable energy generated at a renewable energy generation source in operation as of July 1, 2007, that is operated by a person that is served within a utility's large industrial rate class and that is served at primary or transmission voltage, except for those persons providing renewable thermal energy equivalents to the utility. A participating utility shall be required to fulfill any remaining deficit needed to fulfill its RPS Goals from new renewable energy supplies at reasonable cost and in a prudent manner to be determined by the Commission at the time of approval of any application made pursuant to subsection B. A participating utility may sell renewable energy certificates produced at its own generation facilities located in the Commonwealth or, if located outside the Commonwealth, owned by such utility and in operation as of January 1, 2010, or renewable energy certificates acquired as part of a purchase power agreement, to another entity and purchase lower cost renewable energy certificates and the net difference in price between the renewable energy certificates shall be credited to customers. Utilities participating in such program shall collectively, either through the installation of new generating facilities, through retrofit of existing facilities or through purchases of electricity from new facilities located in Virginia, use or cause to be used no more than a total of 1.5 million tons per year of green wood chips, bark, sawdust, a tree or any portion of a tree which is used or can be used for lumber and pulp manufacturing by facilities located in Virginia, towards meeting RPS goals, excluding such fuel used at electric generating facilities using wood as fuel prior to January 1, 2007. A utility with an approved application shall be allocated a portion of the 1.5 million tons per year in proportion to its share of the total electric energy sold in the base year, as defined in subsection A, for all utilities participating in the RPS program. A utility may use in meeting RPS goals, without limitation, the following sustainable biomass and biomass based waste to energy resources: mill residue, except wood

chips, sawdust and bark; pre-commercial soft wood thinning; slash; logging and construction debris; brush; yard waste; shipping crates; dunnage; non-merchantable waste paper; landscape or right-of-way tree trimmings; agricultural and vineyard materials; grain; legumes; sugar; and gas produced from the anaerobic decomposition of animal waste.

G. The Commission shall promulgate such rules and regulations as may be necessary to implement the provisions of this section including a requirement that participants verify whether the RPS goals are met in accordance with this section.

H. Each investor-owned incumbent electric utility shall report to the Commission annually by November 1 identifying:

1. The utility's efforts, if any, to meet the RPS Goals, specifically identifying:

a. A list of all states where the purchased or owned renewable energy was generated, specifying the number of megawatt hours or renewable energy certificates originating from each state;

b. A list of the decades in which the purchased or owned renewable energy generating units were placed in service, specifying the number of megawatt hours or renewable energy certificates originating from those units; and

c. A list of fuel types used to generate the purchased or owned renewable energy, specifying the number of megawatt hours or renewable energy certificates originating from each fuel type;

2. The utility's overall generation of renewable energy; and

3. Advances in renewable generation technology that affect activities described in subdivisions 1 and 2.

I. The Commission shall post on its website the reports submitted by each investor-owned incumbent electric utility pursuant to subsection H.

J. The Commission shall issue to a participating utility a number of renewable energy certificates for qualified investments, upon request by a participating utility, if it finds that an expense satisfies the conditions set forth in this section for a qualified investment, as follows:

1. By March 31 of each year, the participating utility shall provide an analysis, as reasonably determined by a qualified independent broker, of the average for the preceding year of the publicly available prices for Tier 1 renewable energy certificates and Tier 2 renewable energy certificates, validating the generation of renewable energy by eligible sources, that were issued in the interconnection region of the regional transmission entity of which the participating utility is a member;

2. In the same annual analysis provided to the Commission, the participating utility shall divide the amount of the participating utility's qualified investments in the applicable period by the average price determined pursuant to subdivision 1;

3. The number of renewable energy certificates to be issued to the participating utility shall equal the product obtained pursuant to subdivision 2; and

4. The Commission shall review and validate the analysis provided by the participating utility within 90 days of submittal of its analysis to the Commission. If no corrections are made by the Commission, then the analysis shall be deemed correct and the renewable energy certificates shall be deemed issued to the participating utility.

Each renewable energy certificate issued to a participating utility pursuant to this subsection shall represent the equivalent of one megawatt hour of renewable energy sales achieved when applied to an RPS Goal.

K. Qualified Investments shall constitute reasonable and prudent operating expenses of a participating utility. Notwithstanding subsection E, a participating utility shall not be authorized to recover the costs associated with qualified investments through rate adjustment clauses as provided in subdivisions A 5 and A 6 of § 56-585.1. In any proceeding conducted pursuant to § 56-585.1 or other provision of this title in which a participating utility seeks recovery of its qualified investments as an operating expense, the participating utility shall not be authorized to earn a return on its qualified investments.

L. A participating utility shall not be eligible for a research and development tax credit pursuant to § 58.1-439.12:08 with regard to any expense incurred or investment made by the participating utility that constitutes a qualified investment pursuant to this section.

M. The Commission shall establish and maintain a market-based renewable energy registration and tracking (RT) system to facilitate the creation and transfer of renewable energy certificates. To the extent practicable, the RT system shall be consistent with and operate in conjunction with the trading system developed by PJM Interconnection LLC referred to as PJM-GATS. The RT system shall track renewable energy certificates earned in a year that is consistent with the PJM-GATS planning year of June 1 through May 31. The Commission may contract with a for-profit or a nonprofit entity to assist in the administration of the renewable energy trading system. The market-based renewable energy RT system shall include a registry of pertinent information regarding all:

1. Available renewable energy certificates; and

2. Renewable energy certificate transactions among electric suppliers in the Commonwealth, including (i) the creation and application of renewable energy certificates, (ii) the number of renewable energy certificates sold or transferred, and (iii) the price paid for the sale or transfer of renewable energy certificates.

N. The market-based renewable energy RT system registry shall provide current information to electric suppliers and the public on the status of renewable energy certificates created, sold, or transferred in the Commonwealth. Registry information shall be available by computer network access through the Internet.

O. A renewable energy certificate shall exist for two years from the date created, unless a renewable energy certificate is retired before the expiration of two years by:

1. The electric supplier that received the certificate;

2. A nonaffiliated entity of the electric supplier that purchased the certificate from the electric supplier receiving the certificate or to whom the electric supplier otherwise transferred the certificate; or

3. Demonstrated noncompliance by the generating facility with requirements established by the Commission pursuant to subsection P.

P. The Commission, by regulation, shall establish requirements for documentation and verification of renewable energy certificates by licensed electric suppliers and other renewable energy generators that create and receive certificates for compliance with the RPS Goals.

Attachment 2

PROPOSED

Proposed Business Rules for Issuing VA-Approved Renewable Energy Certificates

- GATS will automatically certify as eligible for use toward the VA RPS generation from facilities located in the PJM Region using the VA-Eligible fuel types listed below (except as described under item 3):

VA-Eligible Fuel Types	Non-Eligible Fuel Types
<ul style="list-style-type: none"> • LFG Captured Methane - Landfill Gas • FCR Fuel Cell - Renewable Fuel • GEO Geothermal • WAT Hydro - Conventional • OC1 Ocean • AB Biomass - Agriculture Crops • OBG Biomass - Other Biomass Gases • OBL Biomass - Other Biomass Liquids • OBS Biomass - Other Biomass Solids • PW Biomass - Poultry Waste • RCT Renewable Cogen Thermal • SLW Biomass - Sludge Waste • SW Biomass - Swine Waste • SUN Solar - Photovoltaic • STH Solar - Thermal • MSW Solid Waste - Municipal Solid Waste • TDF Solid Waste - Tire Derived Fuel • WH Waste Heat • WND Wind • BLQ Wood - Black Liquor • WDL Wood - Wood Waste Liquids • WDS Wood - Wood/Wood Waste Solids 	<ul style="list-style-type: none"> • CMG Captured Methane - Coal Mine Gas • BIT Coal - Bituminous and Anthracite • LIG Coal - Lignite • SC Coal - Coal-based Synfuel • SUB Coal - Sub-Bituminous • WC Coal - Waste/Other • EE Energy Efficiency • DSR Demand-Side Response • FCN Fuel Cell - Non-Renewable Fuel • BFG Gas - Blast-Furnace Gas • NG Gas - Natural Gas • OG Gas - Other • PG Gas - Propane • NUC Nuclear • DFO Oil - Distillate Fuel Oil • JF Oil - Jet Fuel • KER Oil - Kerosene • PC Oil - Petroleum Coke • RFO Oil - Residual Fuel Oil • WO Oil - Waste/Other Oil • OTH Other • HPS Pumped Storage

- For generators that are eligible in VA, GATS will apply a unique state certification number to the certificates created for that generator using the format VA-#####-fueltype, where '#####' is a unique number and 'fueltype' is one of the two- or three-characters codes from the table above.
- If it is not possible for PJM EIS to determine if a facility is eligible in VA, any other VA certifications will be applied by the GATS Administrators on an exception basis as directed by the VA SCC.
Additional requirements of VA regarding eligibility:

- Solar thermal energy systems must have been constructed after January 1, 2013 and must be located in the Commonwealth.

- Renewable Cogen Thermal must be from a renewable-fueled combined heat and power generation facility that is constructed, or renovated and improved, after January 1, 2012, located in Virginia, and utilized in industrial processes other than the combined heat and power generation facility.
 - Renewable energy certificates (RECs) associated with any capacity or energy purchased by a utility under a power purchase agreement after July 1, 2013, shall be expressly transferred to the utility, unless the contract between the generator and the utility specifically addresses the ownership of the RECs.
 - RECs associated with capacity or energy generated by a public utility serving the Commonwealth must be from facilities located within VA, within the PJM interconnection region, or within a control area adjacent to PJM if such public utility owns at least a 49 percent interest in such facility.
 - Biomass material restricted to a limit of 1.5 million tons per year of green wood for all projects combined that are located in Virginia using wood as fuel beginning operation after January 1, 2007.
4. For existing renewable generators already registered in PJM GATS for other states to post electric RECs, VA certification will be applied retroactively to associated generation in calendar year 2014 and thereafter. Also, electric and thermal RECs acquired by a utility and residing in the utility's GATS account for renewable energy generated prior to January 1, 2014 will have VA certification applied for the periods covered by any prior RPS goal (i.e., calendar years 2010 through 2013). For newly registered generators with PJM-EIS GATS, VA certification will be applied to any electric or thermal REC created during the compliance year when approval is obtained.
 5. RPS compliance in VA will be on a calendar-year basis. Electric and thermal RECs created for renewable energy generated in 2014 and thereafter, must be used for RPS compliance within the subsequent five calendar years. RECs acquired by the utilities for renewable energy generated prior to 2014 do not expire and can be used for any subsequent calendar year.
 6. Electric and thermal RECs used by a public utility to comply with VA RPS must also record the associated price or value of such RECs at retirement level, and such posting will be only available to the VA SCC.
 7. Renewable energy certificates for "Qualified investments" in renewable energy research and development programs may be issued by the State Corporation Commission pursuant to § 56-585.2 J of the Code of Virginia and held or acquired by a participating utility, separately and apart from those created in GATS.
 8. Renewable thermal energy may be posted by the generator to GATS after conversion to MWH using the provided definition and formula of "Renewable thermal energy equivalent" in § 56-576 of the Code and approved by the VA SCC.

ATTACHMENT A

From Appendix B of the GATS Operating Rules (Revision 7, December 2011):

Category	Energy Source Code	Fuel Type (Short Description)	Fuel Type (Description)
Captured Methane	CMG	Captured Methane - Coal Mine Gas	Coal Mine Methane Gas
	LFG	Captured Methane - Landfill Gas	Landfill Gas
Coal	BIT	Coal - Bituminous and Anthracite	Bituminous Coal and Anthracite Coal
	LIG	Coal - Lignite	Lignite Coal
	SC	Coal - Coal-based Synfuel	Coal-based Synfuel and include briquettes, pellets, or extrusions, which are formed by binding materials and processes that recycle material
	SUB	Coal - Sub-Bituminous	Sub-Bituminous Coal
	WC	Coal - Waste/Other	Anthracite Culm, Bituminous Gob, Fine Coal, Lignite Waste, Waste Coal
Energy Efficiency	EE	Energy Efficiency	Energy efficiency technologies, management practices, or strategies that reduce electrical consumption by customers
Demand Response	DSR	Demand-Side Response	Demand response technologies that shift electrical load from periods of higher demand to periods of lower demand
Fuel Cell	FCN	Fuel Cell - Non-Renewable Fuel	An electrochemical device that converts a non-renewable fuel's chemical energy directly into electricity, heat and water without combustion
	FCR	Fuel Cell - Renewable Fuel	An electrochemical device that converts a renewable fuel's chemical energy directly into electricity, heat and water without combustion
Gas	BFG	Gas - Blast-Furnace Gas	Blast-Furnace Gas
	NG	Gas - Natural Gas	Natural Gas
	OG	Gas - Other	Butane, Coal Processes, Coke-Oven, Refinery, and other processes
	PG	Gas - Propane	Propane

Category	Energy Source Code	Fuel Type (Short Description)	Fuel Type (Description)
Geo-thermal	GEO	Geothermal	Geothermal
Hydro	WAT	Hydro - Conventional	Conventional hydroelectric turbine
Nuclear	NUC	Nuclear	Uranium, Plutonium, Thorium
Ocean	OC1	Ocean	Ocean Thermal, Ocean Tidal, Ocean Wave
Oil	DFO	Oil - Distillate Fuel Oil	All Diesel and No. 1, No. 2, and No. 4 Fuel Oils
	JF	Oil - Jet Fuel	Jet Fuel
	KER	Oil - Kerosene	Kerosene
	PC	Oil - Petroleum Coke	Petroleum Coke
	RFO	Oil - Residual Fuel Oil	No. 5 and No. 6 Fuel Oils and Bunker C Fuel Oil
	WO	Oil - Waste/Other Oil	Butane (Liquid), Crude Oil, Liquid Byproducts, Oil Waste, Propane (Liquid), Re-Refined Motor Oil, Sludge Oil, Tar Oil
Other	OTH	Other	Other (Batteries, Chemicals, Coke Breeze, Hydrogen, Pitch, Sulfur, Tar Coal, and miscellaneous technologies)
Other Biomass	AB	Biomass - Agriculture Crops	Agriculture Crop Byproducts/Straw/Energy Crops
	OBG	Biomass - Other Biomass Gases	Digester Gas, Methane, and other biomass gases
	OBL	Biomass - Other Biomass Liquids	Ethanol, Fish Oil, Liquid Acetonitrile Waste, Medical Waste, Tall Oil, Waste Alcohol, and other biomass liquids not specified
	OBS	Biomass - Other Biomass Solids	Animal Manure and Waste, Solid Byproducts, and other solid biomass not specified
	PW	Biomass - Poultry Waste	Biomass – Poultry Waste
	SLW	Biomass - Sludge Waste	Sludge Waste
	SW	Biomass – Swine Waste	Biomass – Swine Waste
Pumped Storage	HPS	Pumped Storage	Pumped Storage
Renewable Cogen Thermal	RCT	Thermal from Cogeneration	Useful thermal energy (steam) from a renewable fueled cogeneration facility that is used in an industrial process.

Category	Energy Source Code	Fuel Type (Short Description)	Fuel Type (Description)
Solar	SUN	Solar - Photovoltaic	Photovoltaic
	STH	Solar - Thermal	Solar Thermal
Solid Waste	MSW	Solid Waste - Municipal Solid Waste	Municipal Solid Waste
	TDF	Solid Waste - Tire Derived Fuel	Tire derived fuel
Waste Heat	WH	Waste Heat	Heat that is a by-product of an industrial process and which is used in the direct production of electricity at the facility of a customer
Wind	WND	Wind	Wind
Wood	BLQ	Wood - Black Liquor	Black Liquor
	WDL	Wood - Wood Waste Liquids	Red Liquor, Sludge Wood, Spent Sulfite Liquor, and other wood related liquids not specified
	WDS	Wood - Wood/Wood Waste Solids	Paper Pellets, Railroad Ties, Utility Poles, Wood Chips, and other wood solids

ATTACHMENT B
Virginia Renewable Energy Resource Criteria

Excerpts from §§ 56-576 and 56-585.2

§ 56-576. Definitions.

"Renewable energy" means energy derived from sunlight, wind, falling water, biomass, sustainable or otherwise, (the definitions of which shall be liberally construed), energy from waste, landfill gas, municipal solid waste, wave motion, tides, and geothermal power, and does not include energy derived from coal, oil, natural gas, or nuclear power. Renewable energy shall also include the proportion of the thermal or electric energy from a facility that results from the co-firing of biomass.

"Renewable thermal energy" means the thermal energy output from (i) a renewable-fueled combined heat and power generation facility that is (a) constructed, or renovated and improved, after January 1, 2012, (b) located in the Commonwealth, and (c) utilized in industrial processes other than the combined heat and power generation facility or (ii) a solar energy system, certified to the OG-100 standard of the Solar Ratings and Certification Corporation or an equivalent certification body, that (a) is constructed, or renovated and improved, after January 1, 2013, (b) is located in the Commonwealth, and (c) heats water or air for residential, commercial, institutional, or industrial purposes.

"Renewable thermal energy equivalent" means the electrical equivalent in megawatt hours of renewable thermal energy calculated by dividing (i) the heat content, measured in British thermal units (BTUs), of the renewable thermal energy at the point of transfer to a residential, commercial, institutional, or industrial process by (ii) the standard conversion factor of 3.413 million BTUs per megawatt hour.

§ 56-585.2. Sale of electricity from renewable sources through a renewable energy portfolio standard program.

A. As used in this section:

"Qualified investment" means an expense incurred in the Commonwealth by a participating utility in conducting, either by itself or in partnership with institutions of higher education in the Commonwealth or with industrial or commercial customers that have established renewable energy research and development programs in the Commonwealth, research and development activities related to renewable or alternative energy sources, which expense (i) is designed to enhance the participating utility's understanding of emerging energy technologies and their potential impact on and value to the utility's system and customers within the Commonwealth; (ii) promotes economic development within the Commonwealth; (iii) supplements customer-driven alternative energy or energy efficiency initiatives; (iv) supplements alternative energy and energy efficiency initiatives at state or local governmental facilities in the Commonwealth; or (v) is designed to mitigate the environmental impacts of renewable energy projects.

"Renewable energy" shall have the same meaning ascribed to it in § 56-576, provided such renewable energy is (i) generated in the Commonwealth or in the interconnection region of the regional transmission entity of which the participating utility is a member, as it may change from time to time, and purchased by a participating utility under a power purchase agreement; provided, however, that if such agreement was executed on or after July 1, 2013, the agreement shall expressly transfer ownership of renewable attributes, in addition to ownership of the energy, to the participating utility; (ii) generated by a public utility providing electric service in the Commonwealth from a facility in which the public utility owns at least a 49 percent interest and that is located in the Commonwealth, in the interconnection region of the regional transmission entity of which the participating utility is a member, or in a control area adjacent to such interconnection region; or (iii) represented by renewable energy certificates. "Renewable energy" shall not include electricity generated from pumped storage, but shall include run-of-river generation from a combined pumped-storage and run-of-river facility.

"Renewable energy certificate" means either (i) a certificate issued by an affiliate of the regional transmission entity of which the participating utility is a member, as it may change from time to time, or any successor to such affiliate, and held or acquired by such utility, that validates the generation of renewable energy by eligible sources in the interconnection region of the regional transmission entity or (ii) a certificate issued by the Commission pursuant to subsection J and held or acquired by a participating utility, that validates a qualified investment made by the participating utility.

D. Regarding any renewable energy portfolio standard program, the total electric energy sold by a utility to meet the RPS Goals shall be composed of the following amounts of electric energy or renewable thermal energy equivalent from renewable energy sources, as adjusted for any sales volumes lost through operation of the customer choice provisions of subdivision A 3 or A 4 of § 56-577:

RPS Goal I: In calendar year 2010, 4 percent of total electric energy sold in the base year.

RPS Goal II: For calendar years 2011 through 2015, inclusive, an average of 4 percent of total electric energy sold in the base year, and in calendar year 2016, 7 percent of total electric energy sold in the base year.

RPS Goal III: For calendar years 2017 through 2021, inclusive, an average of 7 percent of total electric energy sold in the base year, and in calendar year 2022, 12 percent of total electric energy sold in the base year.

RPS Goal IV: For calendar years 2023 and 2024, inclusive, an average of 12 percent of total electric energy sold in the base year, and in calendar year 2025, 15 percent of total electric energy sold in the base year.

A utility may not apply renewable energy certificates issued pursuant to subsection J to meet more than 20 percent of the sales requirement for the RPS Goal in any year.

A utility may apply renewable energy sales achieved or renewable energy certificates acquired during the periods covered by any such RPS Goal that are in excess of the sales requirement for that RPS Goal to the sales requirements for any future RPS Goals in the five calendar years after the renewable energy was generated or the renewable energy certificates were created, except that a utility shall be able to apply renewable energy certificates acquired by the utility prior to January 1, 2014.

F. A utility participating in such program shall apply towards meeting its RPS Goals any renewable energy from existing renewable energy sources owned by the participating utility or purchased as allowed by contract at no additional cost to customers to the extent feasible. A utility participating in such program shall not apply towards meeting its RPS Goals renewable energy certificates attributable to any renewable energy generated at a renewable energy generation source in operation as of July 1, 2007, that is operated by a person that is served within a utility's large industrial rate class and that is served at primary or transmission voltage, except for those persons providing renewable thermal energy equivalents to the utility. A participating utility shall be required to fulfill any remaining deficit needed to fulfill its RPS Goals from new renewable energy supplies at reasonable cost and in a prudent manner to be determined by the Commission at the time of approval of any application made pursuant to subsection B. A participating utility may sell renewable energy certificates produced at its own generation facilities located in the Commonwealth or, if located outside the Commonwealth, owned by such utility and in operation as of January 1, 2010, or renewable energy certificates acquired as part of a purchase power agreement, to another entity and purchase lower cost renewable energy certificates and the net difference in price between the renewable energy certificates shall be credited to customers. Utilities participating in such program shall collectively, either through the installation of new generating facilities, through retrofit of existing facilities or through purchases of electricity from new facilities located in Virginia, use or cause to be used no more than a total of 1.5 million tons per year of green wood chips, bark, sawdust, a tree or any portion of a tree which is used or can be used for lumber and pulp manufacturing by facilities located in Virginia, towards meeting RPS goals, excluding such fuel used at electric generating facilities using wood as fuel prior to January 1, 2007. A utility with an approved application shall be allocated a portion of the 1.5 million tons per year in proportion to its share of the total electric energy sold in the base year, as defined in subsection A, for all utilities participating in the RPS program. A utility may use in meeting RPS goals, without limitation, the following sustainable biomass and biomass based waste to energy resources: mill residue, except wood chips, sawdust and bark; pre-commercial soft wood thinning; slash; logging and construction debris; brush; yard waste; shipping crates; dunnage; non-merchantable waste paper; landscape or right-of-way tree trimmings; agricultural and vineyard materials; grain; legumes; sugar; and gas produced from the anaerobic decomposition of animal waste.

G. The Commission shall promulgate such rules and regulations as may be necessary to implement the provisions of this section including a requirement that participants verify whether the RPS goals are met in accordance with this section.

H. Each investor-owned incumbent electric utility shall report to the Commission annually by November 1 identifying:

1. The utility's efforts, if any, to meet the RPS Goals, specifically identifying:
 - a. A list of all states where the purchased or owned renewable energy was generated, specifying the number of megawatt hours or renewable energy certificates originating from each state;
 - b. A list of the decades in which the purchased or owned renewable energy generating units were placed in service, specifying the number of megawatt hours or renewable energy certificates originating from those units; and

- c. A list of fuel types used to generate the purchased or owned renewable energy, specifying the number of megawatt hours or renewable energy certificates originating from each fuel type;
2. The utility's overall generation of renewable energy; and
3. Advances in renewable generation technology that affect activities described in subdivisions 1 and 2.

I. The Commission shall post on its website the reports submitted by each investor-owned incumbent electric utility pursuant to subsection H.

J. The Commission shall issue to a participating utility a number of renewable energy certificates for qualified investments, upon request by a participating utility, if it finds that an expense satisfies the conditions set forth in this section for a qualified investment, ...