

Energy Workgroup Report
Governor's Climate Change and Resiliency Update Commission
August 27, 2015

I. Introduction and Background

The Energy Workgroup of the Climate Change and Resiliency Update Commission was established to “focus on how to lower the state’s carbon footprint related to energy generation.” The charge to the Workgroup included “identifying implementable actions and should include specific recommendations for policy and process changes.” It was anticipated that the Workgroup would not consider the state’s work on the federal Clean Power Plan, which is a regulatory process that the state is negotiating outside the scope of the Commission.

The Workgroup met four times (January, April, May and July 2015) outside of the three meetings of the full Commission (September 2014, December 2014 and April 2015). During the Workgroup meetings, discussions were wide ranging but centered primarily on (1) policies that can be implemented with immediate impact and (2) barriers to help move the Commonwealth toward a more diverse and less carbon-intensive energy system. The workgroup focused on recommendations that would deliver greater access to clean energy resources including renewable energy and energy efficiency.

II. Recommendation #1: *Establish a renewable energy procurement target for the Commonwealth’s agencies*

A) Goal

The Energy Workgroup recommends that the McAuliffe Administration set a State agency procurement requirement through Executive Order for renewable energy. Some members of the Workgroup have suggested that the requirement would include a target that state agencies purchase 30% of their energy from renewable resources by 2025. Another member suggested that the requirement should be 25% renewable energy procurement by 2025.

B) Overview

The procurement target would be structured similarly to Governor McAuliffe’s Executive Order Number Thirty One, which states that the Commonwealth “is seeking to reduce electricity consumption in state facilities by 15% by 2017, using 2009-2010 as a baseline.” While Virginia has a voluntary renewable energy goal calling for 15 percent of 2007 baseline electric production to come from renewable sources by 2025, the Commonwealth does not currently have a state renewable energy procurement policy in place.

Such policies are in place at the federal level and in other states. For example, President Obama issued a presidential memorandum establishing a goal that directs federal agencies to derive 20% of its energy from renewable sources by 2020.¹ This goal included an interim target

¹ <https://www.whitehouse.gov/the-press-office/2013/12/05/presidential-memorandum-federal-leadership-energy-management>.

of 10% from renewable sources by 2015. In addition, the presidential memorandum established a variety of mechanisms in which to achieve this target, including:

1. Installing agency-funded renewable energy on-site at federal facilities and retain renewable energy certificates;
2. Contracting for energy that includes the installation of a renewable energy project on-site at a federal facility or off-site and the retention of renewable energy certificates for the term of the contract;
3. Purchasing electricity and corresponding renewable energy certificates; and
4. Purchasing renewable energy certificates.

Such mechanisms could similarly be utilized in Virginia and they should be identified in the Executive Order establishing the Commonwealth's renewable energy procurement target.

C) Action Items

Governor McAuliffe should issue an Executive Order requiring that all state agencies procure a defined percentage of renewable energy as part of their purchase of electricity. Some members of the workgroup have suggested that the overall target should be 30% renewable energy procurement by 2025. Another member suggested that the requirement should be 25% renewable energy procurement by 2025. In addition, based on the significant opportunity for more growth in the renewable energy sector in Virginia, the Executive Order should include more immediate interim goals. One such suggestion is that state agencies should procure 5% of their energy from renewable energy sources by the end of 2016. In addition, the program should provide a mechanism that would allow local governments to opt in and participate should they wish.

III. Recommendation #2: *Create pilot programs for innovative mechanisms to reduce carbon emissions and improve resiliency.*

A) Goal

Governor McAuliffe should encourage the development of new and existing energy technologies that address climate change through creative public policy initiatives including but not limited to incentives that encourage the deployment of these technologies through pilot programs, public private partnerships, and other means. The technologies that will benefit from expanding market opportunities might include, among others: 1) combined heat and power (CHP or cogeneration) in public, commercial and industrial sectors; 2) solar cells and storage batteries (separate or in combination); 3) clean-energy micro-grids; 4) distributed renewable energy; and other technologies.

B) Overview

The purpose of a pilot program would be to integrate climate risk and resiliency into core development planning and implementation. Pilot programs should aim to establish incentives for scaling-up activities that demonstrate measurable success in addressing climate change challenges or new technologies that might be successful in addressing these challenges in the

Commonwealth of Virginia. Virginia's policies, regulatory environment and incentives should acknowledge and not thwart the proven benefits of many of these technologies (combined heat and power (CHP) systems, distributed renewable energy, among others) thus supporting sustainable technologies that already exist in the market.

a. CHP and Distributed Energy

CHP systems and many distributed renewable energy generation systems are directly connected to customers. This allows onsite electricity production and eliminates transmission and distribution losses. In fact, these systems are generally owner operated and not subject to traditional regulation. However they do require timely interconnection agreements with the local utility in order to operate in synchronized or in parallel to the local grid. These CHP and distributed renewable systems do have the ability to offer excess power for resale back to the grid, but are primarily designed to meet the needs of the end customer. CHP and distributed renewable energy systems also contribute to grid reliability, can allow buildings to produce some of their electricity thus reducing stress on the grid and, during peak power use, displacing part of the need for more costly power generation. Virginia is home to many ideal properties that could benefit from CHP deployment and distributed renewable energy generation, including local and federal buildings, medical centers, laboratories, research facilities and educational institutions, to name a few.

b. Public-Private Partnerships

Virginia policies should encourage public-private partnerships (PPP), in the area of energy infrastructure. PPP introduces private sector technology and innovation in providing better public services through improved operational efficiency. Such partnerships could expand market opportunities and incentivize the private sector to create new, clean energy projects. Costs and risks associated with CHP and renewable energy projects are likely to vary from one project to another, but the formation of a PPP provides the processes needed to manage both costs and risks. In order to maximize PPP potential, Virginia must develop a clear set of incentives and policies to achieve the optimal sustainable solution.

c. Clean Energy Pilot Programs

Virginia should strongly consider pilots or other incentives to further develop emerging technologies such as the combination of solar cells with storage batteries. Lithium ion batteries are becoming a lower cost platform for energy storage, and the number of solar panel installations continues to surge. A solar-battery pilot program, under a PPP, is likely to provide an affordable and gradual way for Virginia to take advantage of the solar-battery trend, which has captured the attention of many companies.

C) Action Items

Going forward, Virginia policymakers should consider the following actions and pathways to advance CHP, distributed renewable energy generation, solar-battery development, and other opportunities:

- Evaluate CHP, distributed renewable energy generation, and solar-batteries as energy efficiency strategies to help meet energy and emissions reduction goals;
- Review critical infrastructure and energy resiliency needs in conjunction with the potential role of CHP, distributed renewable energy generation, or solar-batteries;
- Examine new facility and facility modernization planning policies for proper evaluation of CHP, distributed renewable energy generation, or solar-battery options;
- Consider CHP, distributed renewable energy generation, and solar-battery as key resources to meet renewable energy portfolio targets or goals; and
- Create governmental funding mechanisms to encourage local governments, public sector universities and hospitals and other entities to create PPPs with the energy industry for CHP, distributed renewable energy generation, solar-battery options, or other clean-energy developments.

IV. Recommendation #3: *Create of a Climate Change Officer within the Department of Environmental Quality.*

A) Goal

The Energy Workgroup recommends creating the permanent position of Climate Change Officer within the Virginia Department of Environmental Quality (DEQ).

B) Overview

The Energy Workgroup recommends creating the Climate Change Officer as a permanent position within DEQ. There is precedent to support taking this action. New York State has an entire “Office of Climate Change” that was “created to lead the development, in concert with other DEC [Department of Environmental Conservation] programs and New York State agencies, of programs and policies that mitigate greenhouse gas (GHG) emissions and help New York communities and individuals adapt when changes in our climate cannot be avoided.”

C) Action Items

The DEQ Climate Change Officer shall be created as a permanent position with the following duties:

a. Annual Emissions Inventory

The DEQ Climate Change Officer would be charged with calculating an annual emissions inventory—in tons per year—of greenhouse gas pollution emitted from the energy sector in-state. The inventory should be publicized through a simple-to-read “online dashboard” on the website of the Department of Environmental Quality, and in other formats as needed to ensure that the information can be easily understood by lay persons. The inventory should be

designed to allow policy leaders and concerned citizens alike to track whether the Commonwealth is:

- (1) slowing the rate of emissions and also reducing the total amount of greenhouse gas pollution emitted (i.e., tons per year of greenhouse gas pollution);
- (2) slowing the rate of greenhouse gas emissions but still increasing the total amount of actual, annual pollution in greenhouse gases; or
- (3) increasing both the rate of growth and total annual emissions.

b. Energy Efficiency Funding

Although the Virginia Department of Mines, Minerals and Energy (DMME) has maintained an energy efficiency program, this Workgroup recommends that the DEQ Climate Change Officer take a lead role in ensuring increased state funding for Energy Efficiency public policy development and that increased funding for Energy Efficiency leads to measured and verified electricity savings. In the alternative, the DEQ Climate Change Officer may wish to work with DMME on achieving the goals of increasing state funding for energy efficiency and ensuring that savings are measured and verified.