

SECTION 12 - RECOMMENDATIONS

STRATEGIC GROWTH IN THE ENERGY SECTOR

1. Accelerate the Development of Renewable Energy Sources in the Commonwealth to Ensure a Diverse Fuel Mix and Promote Long-Term Economic Health

A. *Work to ensure the diversity of the Commonwealth's generation fuel mix.*

- Virginia must not become over-reliant on a select number of fuel sources. Diversity in fuel mix will provide a hedge against volatility and spread the risk among varied sources of generation. This diversity must include an increase in the development of zero-emitting renewable sources, as well as on the largely untapped potential of energy efficiency. This path will lead to economic prosperity through increased jobs and environmental health through lower harmful emissions.

B. *Establish the Virginia Solar Energy Development Authority based on the model of the Virginia Offshore Wind Development Authority.*

- 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 by June 30, 2017. Additionally, the Authority should facilitate the installation of an additional 15MW of solar energy generation at commercial, industrial, and residential facilities by the same target date of June 30, 2017.

C. *Create an environment that welcomes significant growth in renewable generation in the Commonwealth, from small-scale distributed generation to commercial and utility-scale deployment.*

- Increase the rated generating capacity for renewable that can be owned and operated by customer-generators from 1 percent to 3 percent of an electricity distribution company's adjusted Virginia peak-load forecast for the previous year.
- Increase the caps for residential and non-residential generating systems from 20 kilowatts for residential and 500 kilowatts for commercial, with standby charges for systems over 10 kilowatts, to 40 kilowatts and 1 megawatt, respectively, with standby charges for systems over 20 kilowatts.
- Develop rules to permit neighborhood and office park-sized distributed solar generation. These facilities could be treated as a single customer for the purposes of standby charges, but said charges could be spread evenly among contributors.
- Make third-party Power Purchase Agreements (PPA) available throughout all utility service territories in Virginia. Double the current cap on total megawatt installation

through PPA's from 50 MW to 100 MW, as well as the installation-specific cap from 1MW to 2MW.

D. Allow subscription participation in community solar programs.

- Develop a mechanism to allow individuals to pool resources to have their utility build an off-site solar installation on the group's behalf. The utility will provide a mechanism for on-bill financing to allow the group to pay for the development of the solar installation.

E. Strongly encourage and aggressively support the timely development of offshore wind in Virginia.

- The Administration is committed to the full and swift development of the current Virginia Wind Energy Area. Both the General Assembly and the Governor stressed that the planning and development of any and all offshore wind energy generating facilities is in the public interest of the citizens of the Commonwealth. DMME and DEQ should use their full authorities to facilitate the build out of the 113,000 acre Virginia Wind Energy Area. Furthermore, additional opportunities to gain federal permission to develop offshore wind beyond the Virginia Wind Energy Area should be pursued with vigor.

F. Establish Virginia as the ideal manufacturing, operational and supply chain hub for offshore wind development in the mid-Atlantic region and provide support and resources to accelerate development of Virginia's offshore wind resources.

- Assess the industry's needs for manufacturing, operational logistics, environmental and regulatory support; identify and address any gaps; and publicize the asset strengths and other unique advantages that differentiate the Commonwealth as the best location for a mid-Atlantic offshore wind hub. The Virginia Offshore Wind Development Authority should lead and accomplish this strategy by June 30, 2015.

2. Make Virginia a Leader in Energy Efficiency to Reduce Consumption and Spur Economic Growth

A. Establish the Virginia Board on Energy Efficiency.

- The 2007 Virginia Energy Plan established a voluntary goal of reducing energy consumption at the retail level by 10% by 2022, against a 2006 baseline. The State Corporation Commission analyzed this goal and determined that it was feasible. While there is anecdotal evidence that work toward achieving this goal is underway, there is a lack of a comprehensive understanding, along with easily identifiable data, as to where the Commonwealth currently stands in meeting the 10% goal.

Establish the Board on Energy Efficiency to develop a strategic plan to achieve the voluntary goal of reducing energy consumption by 10 percent by 2020, accelerating the 2007 Virginia Energy Plan goal by two years. The Board will be appointed by the Governor and will be comprised of a cross-section of energy efficiency industry stakeholders. The Board will be convened within 90 days of the release of the Virginia Energy Plan. The Board will oversee the implementation of the strategic

plan and provide guidance to accomplish plan goals. The Board will publish progress reports on implementation on a bi-annual basis.

Specific duties of the Board will be to develop a strategic plan that includes:

- Development, within 12 months, a measurement and verification method to compile and track energy consumption at the retail, residential, and commercial levels to determine where Virginia currently sits in achieving the 10 percent voluntary goal.
- Identification of market, regulatory and policy barriers and opportunities to help both the private sector and regulated utilities work together to meet the 10 percent goal.
- A review of best practices in cost recovery and shared-savings mechanisms that may help accelerate utility adoption of energy efficiency.
- Recommendations to address market, regulatory and policy barriers and opportunities.
- Develop of a plan to coordinate outreach efforts throughout all regions of the State and with all necessary stakeholders to ensure a consistent communications and messaging strategy focused on increasing energy efficiency education and participation.
- Identification of creative financing tools that can be used at both the generation and demand side levels and make recommendations for their implementation.
- Recommendation of any new programs or policy changes that would support energy efficiency building upgrades for low income Virginians – particularly in Southside and Southwest Virginia.
- Review of existing Virginia-specific energy efficiency studies to determine if a comprehensive report on Virginia efficiency potential is necessary.

The Board will also create a grant response team from its members to work with private and public sector entities to develop grant proposals to respond quickly to potential funding opportunities that further the work of the Board or State energy office.

B. Aggressively implement energy efficiency in State government.

- Create, within the administration, a Chief Energy Efficiency Officer to oversee the aggressive implementation of energy efficiency measures in state agencies, including Energy Performance Contracting (EPC).
- Streamline and standardize the EPC process by developing a master packet that agencies can use to guide them through the process and ensure no unnecessary barriers slow down the project.
- Accomplish the goal of reducing electricity consumption in State facilities by 15 percent through EPC by 2017.
- Reinstigate a commissioning/re-commissioning pilot program in State facilities.

C. Develop a marketing, outreach and preliminary assistance program to engage local municipalities in Energy Performance Contracting (EPC).

- In the Commonwealth, municipalities and counties are permitted to do EPC, and are not bound by the same set of regulations attending to State agencies. There are scores of local governments—small, medium, and large, town, city and county—that are good candidates for EPC.

There are four broad tasks valuable to offer local governments and consistent with the scope of this contract:

- Education about the pros and cons of energy performance contracting
- Assistance in prequalifying governments initially interested in the concept
- Assistance in getting prequalified governments out to bid and in selecting qualified Energy Service Companies (ESCOs)
- Preliminary owner's agent assistance, through the investment audit stage

The Commonwealth should develop an initiative to promote increased adoption of EPC in local governments. Through DMME, the Commonwealth should work with local and regional stakeholders, as well as organizations focused on energy efficiency, to execute this program.

The Governor could highlight this initiative through an energy efficiency tour to regions of the state that are centers of best practices, as well as localities that would benefit most from EPC.

D. Create a central State facility energy data registry and dashboard to track energy consumption at all State agencies.

- Energy Management Systems (EMS) and their associated cost savings and sustainability opportunities are increasingly vital to enterprise cost control and competitive strategies. The emergence of relatively inexpensive computing, data storage, and cloud deployment options have already transformed many industries, and are now poised to do the same for enterprise energy management. Applying technological advances to create smart buildings offers the opportunity to utilize data-driven energy management solutions on a cost-effective basis, which will provide predictable and unprecedented energy, operational, and capital expenditure savings.

E. Engage social entrepreneurs in exploring and implementing innovative models, such as pay for performance, in order to test new and innovative ways to cut energy bills and to finance energy efficiency upgrades in existing multi-family residential properties.

- Social entrepreneurship is uniquely positioned to aid government in addressing energy efficiency in two primary ways:
 - Better leveraging public and private resources
 - Testing and developing impact-making solutions

In partnership with government, social entrepreneurs can augment their ability to generate and implement transformative, cost-effective solutions to the most challenging societal challenges facing the Commonwealth, our nation and the world

3. Go Global with Coal Technology

- A. *Build a proactive outreach program focused on coal-related companies to inform and educate about possible opportunities for their products in international markets.*
- As the coal industry in Virginia continues to face challenges domestically, it is important for companies in the coal supply chain to explore potential markets for their products that have not traditionally been exploited. Many companies are unaware of the international market potential for their products or that the Commonwealth has developed programs to assist in the marketing of Virginia businesses to international markets.
 - The Commonwealth should develop a robust outreach program that proactively seeks out coal supply chain companies that may have potential for success in international markets. The program should be crafted similar to the “Going Global Defense Initiative” and work to:
 - Identify businesses that may have export potential and are unaware of existing programs in the Commonwealth to assist in tapping international markets.
 - Conduct educational seminars to introduce these companies to international trade and the export market. The seminars will also include a review of programs run by Virginia that can assist in tapping export markets.
 - Provide a forum for businesses to think creatively about how their products may be valuable to industries in other markets that are not specifically coal-related.
 - Bring in experts from markets that are targets for coal and mining supply chain products. These experts will provide an overview of market potential and give Virginia businesses personalized exposure to the technical expertise of a potentially attractive market.
 - Provide a forum for businesses that have successfully utilized Virginia programs to tap international markets to relay experiences, lessons learned, and best practices.
- B. *Conduct an “export tour” in Southwest Virginia to highlight the importance and potential of international trade for the coal supply chain.*
- The Administration will hold roundtable discussions in various parts of Southwest Virginia to place an emphasis on the need to tap into international markets to diversify the client base. This tour will place a spotlight on expertise and products sold by industries and companies to supply the coal mining industry in Virginia.
- C. *Conduct coal supply chain-specific trade missions to the most high-potential international markets for mining-related products.*

- The Commonwealth should identify international markets that are specifically attractive for Virginia businesses in the coal industry supply chain
- D. *Increase technical assistance provided to businesses that are committed to growing their international presence.*
- Many small businesses in the coal supply chain do not have the resources to appropriately market themselves or conduct the necessary research to understand their potential clients. Virginia's current support in these areas is limited for coal supply chain companies. This support should be expanded to provide more robust assistance to give these businesses the most favorable environment in which to succeed.
- E. *Support continued funding of research and development to enable the deployment of clean coal technologies on a commercial scale.*

4. Pursue the Development of Virginia's Offshore Gas and Oil Resources

- A. *Current Virginia statute on offshore energy development favors permitting the production of offshore oil and natural gas resources 50 miles or more off of the coastline. It is critical that the development of these resources be conducted in a safe manner that is protective of Virginia's coastal environment and its broad economic and ecologic base.*
- B. *Fully support the development of oil and natural gas resources off of Virginia's coast, contingent upon a revenue sharing agreement being reached between the federal government and the Commonwealth of Virginia.*
- C. *Advocate for the inclusion of Virginia's portion of the Mid-Atlantic Planning Area in the U.S. Department of the Interior's 2017-2022 Five-Year Outer Continental Shelf Oil and Gas Leasing Program.*
- D. *Conduct a readiness study to determine Virginia's ability to sustain any potential offshore gas and oil exploration and development industry.*
- Virginia should evaluate the adequacy of port infrastructure to ensure that the Commonwealth is fully prepared and capable of supporting this industry, can provide a timely and comprehensive response to oil spills, and can address the concerns raised by fishing and tourism interests. In addition, address the concerns raised by the military about conflicting uses to ensure that the portion of the Mid-Atlantic Planning Area south of the Virginia-Maryland border and beyond 50 miles from Virginia's coastline is included in the U.S. Department of the Interior's 2017-2022 Five Year Outer Continental Shelf Oil and Gas Leasing Program.
 - The Department of Mines, Minerals and Energy will conduct a study on Virginia's readiness for offshore drilling, including spill preparedness, and report the findings of this study to the Governor, the Secretary of Commerce and Trade, and the Secretary of Natural Resources, by April 15, 2015.

E. *Support efforts at the federal level to ensure that revenue-sharing between the federal government and Virginia will be a component of any future potential gas and oil development off the Virginia coast.*

- In the alternative, advocate for regional revenue sharing among participating Mid-Atlantic States' offshore energy development lease.

EXPAND BEST-IN-CLASS INFRASTRUCTURE

5. Expand, Improve, and Increase the Reliability of Virginia's Energy Infrastructure

a. *Support legislative and regulatory policy, such as special utility rates, to allow Virginia's natural gas utilities to more proactively approach expansion of intrastate infrastructure into unserved and underserved areas; and support improvements and expansion of interstate natural gas pipeline infrastructure to increase capacity in currently restricted market areas, such as Central and Tidewater Virginia to improve the ability to attract new businesses and stimulate economic development in these regions.*

- Facilitate regional discussions among economic development agencies, utilities, interstate pipelines and other key stakeholders to reach consensus on long-term plans for the strategic development of the appropriate energy infrastructure to support economic growth and business development.
 - Encourage and facilitate increased interaction between compressed natural gas fueling station operators, fleet owners and natural gas suppliers to identify the most strategic locations for facilities that offer adequate pressure for compression and access for vehicles.
 - Study the strategic location of pipeline, bunker, and an LNG fueling station within or near the Port of Virginia footprint to allow the servicing of terrestrial LNG and CNG vehicles as well as container ships that operate on LNG fuel. This facility would not be designed with specifications of sufficient scope to allow its use for export of LNG, but only for onsite fueling.
- b. *Support nuclear energy generation, research, education and workforce development and recognize nuclear energy's important role in the Commonwealth's diverse electricity generation portfolio.*
- Recognize and support the Virginia Nuclear Energy Consortium efforts to make the Commonwealth a national and global leader in nuclear energy and serving as an interdisciplinary study, research, and information resource for the Commonwealth on nuclear energy issues.
 - Regulatory certainty is important given the long-lead decisions required for the continued safe and efficient operation of existing nuclear assets and the substantial capital commitments associated with constructing new nuclear units. Virginia's energy policy should view nuclear assets in light of their capacity to deliver reliability,

availability and source diversity for a general portfolio that achieves emission reductions required by pending federal regulations.

- Leverage Virginia international corporate outreach and intergovernmental efforts to support the Virginia-based nuclear design, repair, and installation industries. Virginia is home to global leaders in the nuclear energy sector, such as AREVA, Babcock and Wilcox, Bechtel and Newport News Shipbuilding. In addition, dozens of other companies, located all across Virginia, provide services, supplies and support to nuclear facilities inside the Commonwealth and globally. The nuclear energy sector drives Virginia's economy in every region, creating high-skilled jobs, supporting research and generating revenues at the State and local level.
- Virginia is home to two of only 31 nuclear engineering programs in the U.S. (VCU and Virginia Tech.) The Commonwealth should strengthen Virginia's existing nuclear science engineering and research programs to provide the pipeline of highly-educated and highly-skilled workers necessary to continue creating high-paying jobs for Virginians and to sustain our nuclear industry in the long term.
- c. *Create flexible financing mechanisms to help to put in place key additional energy assets and support priority energy programs.*
 - Objectives of the funding mechanism would include: provision of low-cost financing for energy program delivery and projects to expand or improve energy infrastructure, including renewable energy systems, energy conservation and efficiency and alternative fuels; an increase local economic activity and create jobs; and leverage of private funding and markets.
 - Use of Virginia's Qualified Energy Conservation Bond (QECB) allocation and other funding sources could provide low-cost financing options for: Energy Performance Contracting (EPC) to improve building energy efficiency; deployment of energy efficiency measures and programs, and renewable energy systems; and alternative transportation refueling infrastructure.
- d. *In collaboration with Secure Commonwealth and the Climate Change and Resiliency Commission, refine and focus the Commonwealth's Energy Assurance Plan; and implement a pilot demonstration of affordable virtual hardening of critical infrastructure.*
 - The vulnerability of the electric, communications, and water infrastructure to natural disaster has recently been tragically demonstrated, and its susceptibility to malicious attack is well known. This susceptibility is both physical and electronic, requiring practical means of cyber security as well as hardening assets. A substantial study of resilience and security preparedness was made in 2012 by SAIC for DMME,¹ analyzing the Commonwealth's vulnerability and risks, and laying out options for preparing and responding to both physical and cyber security threats.

¹ *Energy Assurance Plan*, 21 September 2012, VA Department of Mines, Minerals and Energy

ADVANCED VEHICLE TECHNOLOGY & ALTERNATIVE FUELS

6. Accelerate the Development of Advanced Vehicle Technology and the Use of Alternative Fuels for Vehicles in the Commonwealth

A. *State agencies and localities should purchase vehicles that use non-traditional sources to meet the transportation needs of the Commonwealth's public sector.*

- The State will facilitate this through the expansion of the Commonwealth Alternative Fuels Program. This Program, begun in 2012, facilitates the purchasing or converting of vehicles for fueling with natural gas or propane. The goal is to advance the first 100 vehicles within by October 1, 2015 and deploy at least 300 vehicles by the end of the Administration. This goal will be accomplished by DMME and DGS utilizing Federal Congestion Mitigation and Air Quality (CMAQ) funding to support the incremental costs of appropriate alternative fuel vehicles, and engaging agencies and localities in this effort.

B. *The Commonwealth will work to create and promote additional public private partnerships to double the total deployment of all types of alternative fuel refueling infrastructure for State fleet and public motoring use.*

- Virginia is a national leader in effective and mutually beneficial public-private partnerships. Using this expertise, the Administration will proactively communicate and collaborate with private partners to advance a greater availability of alternative fueling stations. This could involve leveraging State vehicle fleets to provide the volume of vehicles needed for the financial viability of building new fueling infrastructure. Virginia now has around 400 alternative fuel stations for biodiesel, natural gas, ethanol, electricity, and hydrogen, including nearly 250 electric vehicle-charging stations. The Commonwealth should work to double the number of alternative fuel fueling stations to reach 800 by the close of the Administration.

C. *Virginia should work to publicly recognize high-impact alternative fuel vehicle fleets for their emissions reductions and fuel savings by creating a Governor's Green Fleet Award.*

- This annual award and recognition will showcase State agencies that are public sector leaders in shifting their fleets to alternative fuel vehicles.

D. *Virginia should facilitate consumer and business adoption of efficient alternative fuel vehicle technologies by making incentives available for the purchase of low or zero emissions vehicles to bolster the pace of transition.*

- Purchasers of alternative fuel, zero emission vehicles will be eligible for a \$1,000-\$2,500 tax credit or grant. The tax credit will be available for up to 2,000 alternative fuel, low- or zero-emission vehicles per year and will expire after 10,000 of these vehicles have been purchased in the Commonwealth. Incentives for alternative fuels, zero-emission vehicles at this level is an effective tool used to increase deployment of these vehicles while allowing citizens to leverage and take benefit from the ongoing federal \$7,500 incentive.

E. Virginia should identify State resources to fund alternative fuel education and deployment programs.

- A modest funding allocation for alternative fuel educational outreach and deployment programs can be effectively leveraged with private sector and federal dollars to create significant education and deployment penetration in Virginia. By participating with targeted State investments in the areas of outreach, education, and deployment, Virginia can contribute and lead a path forward that reflects the priorities of the Commonwealth.

F. The Commonwealth should support the continued use of Gas Gallon Equivalent (GGE) for Compressed Natural Gas when it is used as an on-road vehicle motor fuel.

- This standard unit of measure is used nationwide and gives consumers an understandable and useful comparison to gasoline and provides equity in taxing and dispensing.

TALENT DEVELOPMENT IN THE ENERGY SECTOR

7. Expand and Foster an Educational Environment to Prepare the Next Generation of Virginia's Energy Workforce

- A. Expand and accelerate participation in the Troops to Energy program, training veterans to work in the energy industry.*
- B. Collaborate with community colleges and four-year institutions to train the next generation of Science Technology engineering and Mathematics (STEM) workers in the energy sector.*
- C. Establish annual goals and identify opportunities to increase Satewide attainment rates of credentials that align with employer needs.*
- D. Align energy workforce supply to current and anticipated employer demands by constructing career pathways and training solutions for future workers.*