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STATE CORPORATION COMMISSION

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| STATE CORPORATION COMMISSION | ) | Case No. PUE-2009-00023 |
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| In the matter of: determining achievable, cost-effective energy conservation and demand-response targets that can realistically be accomplished in the Commonwealth through demand-side management portfolios administered by each generating utility identified by Chapters 752 and 855 of the 2009 Acts of the Virginia General Assembly | ) | |

CORRECTED BRIEF OF RESPONDENTS
SOUTHERN ENVIRONMENTAL LAW CENTER,
VIRGINIA CHAPTER OF THE SIERRA CLUB, AND APPALCHIAN VOICES

## I. Introduction

The Southern Environmental Law Center, on behalf of itself, the Virginia Chapter of the Sierra Club and Appalachian Voices (collectively, "Environmental Respondents") submits the pre-filed testimony of Jeff Loiter of Optimal Energy, Inc. and William Steinhurst of Synapse Energy Economics, along with this supporting brief for filing in the above-captioned matter. As detailed in the attached testimonies, Environmental Respondents urge that large-scale, utility-run energy efficiency programs in Virginia can supply 12% of Virginia's needed electric power by 2022. Energy efficiency can and should be thought of as an energy resource that stands alongside new generation as an option for supplying base load power to the Commonwealth. It is

not only achievable on a large scale, but it is also reliable[1] and extremely cost-effective. Furthermore, tapping into this energy source will help rein in Virginia's reliance on carbon-heavy, polluting, and increasingly expensive fossil-fuel fired generation to meet its electricity needs.

## II. Legislative Background

The General Assembly has charged this Commission with making findings and issuing an associated report focusing on the determination of the "achievable, cost-effective energy conservation and demand response targets that can realistically be accomplished in the Commonwealth through demand-side management portfolios administered by each electric generating utility in the Commonwealth." *See* 2009 Va. Acts of Assembly, Chapters 855 & 752 (Senate Bill 1348 & House Bill 2531).

The Commonwealth has taken several incremental steps in promoting energy efficiency and demand response (collectively "demand-side management," or "DSM") in the past few years. In 2006, the General Assembly directed the Department of Mines, Minerals and Energy to develop a 10-year energy plan ("the Virginia Energy Plan" or "VEP") for the Commonwealth, which recommended that energy conservation be employed as a critical part of meeting Virginia's future energy needs. In 2007, the General Assembly endorsed a voluntary goal of reducing the projected retail consumption of electric energy in Virginia by 2022 by an amount equal to ten percent of the amount of Virginia's 2006 retail electricity consumption, and charged

[1] *See* e.g., Virginia Energy Plan ("VEP") at 61 ("Energy efficiency and conservation programs can be viewed as an energy resource in energy planning. Many energy-efficiency and conservation measures can be deployed to reduce demand much more rapidly and less expensively than supply-side options can increase production.").

the Commission with reporting on the attainability of that goal and related issues. The Commission then confirmed that this goal was achievable.

In September 2008, the American Council for an Energy Efficient Economy (ACEEE) issued a report finding that a mid-case portfolio of energy efficiency investments could enable Virginia to supply 19% of its projected energy needs in 2025 through energy efficiency, rather than new generation. *See* ACEEE, Energizing Virginia: Efficiency First, Report No. E085, (Sept. 19, 2008) (Virginia ACEEE Report). The Governor's Commission on Climate Change embraced this goal in December 2008, formally recommending that Virginia "achieve reductions in electricity consumption through a mandatory energy efficiency standard equivalent to the medium case of the [Virginia ACEEE Report] (19% of projected electricity needs by 2025)." *See* Final Report, Governor's Commission on Climate Change, Recommendation 1A (Dec. 15, 2008).

During the 2009 legislative session, spurred by these actions, the General Assembly passed an incentives bill that established a new rate recovery mechanism that enables Virginia's utilities to recover costs not just for generating new electricity, but also for reducing energy consumption through utility-run energy efficiency programs. *See* 2009 Va. Acts of Assembly, Chapter 824 (House Bill 2506). Notably, the legislature defined "energy efficiency program" to exclude programs that merely shift energy use to different time periods, and fail to cut overall energy use. The bill provides that:

> 'Energy efficiency program' means a program that reduces the total amount of electricity that is required for the same process or activity implemented … Energy efficiency programs include equipment, physical, or program change designed to produce measured and verified reductions in the amount of electricity required to perform the same function and produce the same or a similar outcome. . . . Energy efficiency programs include demand response, combined heat and power and waste heat recovery, curtailment, or

other programs that are designed to reduce electricity consumption *so long as they reduce the total amount of electricity that is required for the same process or activity.*

Va. Code Ann. § 56-576 (2009) (emphasis added). Thus, an energy efficiency measure is one that enables the consumer to engage in the same activities using less electricity.[2]

Moreover, in separate legislation passed during the 2009 session, the legislature charged the Commission with determining, among other questions, the amount of cost-effective energy efficiency and demand response that Virginia's electric utilities can realistically accomplish through DSM programs.[3]

## III. Specific Legal and Policy Issues

In their testimony, SELC witnesses Loiter and Steinhurst answer the nine questions from the Order and address related issues. In this supporting brief, Environmental Respondents highlight selected policy arguments that are supported by the testimony, as well as legal issues raised by their testimony.

### A. Energy Efficiency is a Reliable, Abundant, Cost-Effective and Readily Available Energy Resource.

As the testimony of Loiter and Steinhurst show, there are four basic attributes of energy efficiency in Virginia.

- Abundant. There is enormous untapped potential for energy efficiency in Virginia. As detailed in the conservative analysis by Mr. Loiter, it is realistic for Virginia utilities to meet 12% of their projected demand through energy efficiency alone by 2022. Loiter, 4. (Since deregulation in the 1990s, Virginia

[2] Sealing off leaks in air conditioning ducts, for example, enables a consumer to achieve the same indoor air temperature while using fewer kilowatt hours (kWh). Swapping out conventional, incandescent traffic lights for LED (Light-Emitting Diode) lights enables a city or town to provide the same service, using fewer kWh.
[3] *See* 2009 Va. Acts of Assembly, Chapters 855 & 752 (Senate Bill 1348 & House Bill 2531).

utilities have invested little to nothing in large-scale energy efficiency programs. *See* VEP at 62. ) The 12% target translates into a reduction in peak demand of greater than 3,900 MW, while demand response—not included in the 12% figure—can provide additional peak-use reductions of nearly 1,700 MW. Loiter, 4. Further down the line, within a 15-20 year timeframe, Virginia can likely reduce 20% of its projected energy use through energy efficiency. Loiter, 5, 20-22.

- Readily Available. Energy efficiency is available to us now—not later. Despite the fact that Virginia is relatively new to large-scale utility-run energy efficiency, within four years of launch, Virginia can achieve savings of 1.3% of base load each year through energy efficiency, setting Virginia on the path to meeting the 12% long term goal. Loiter, 6-8.
- Reliable. While marshalling the energy efficiency resources that exist in Virginia may present issues different than those that come with traditional efforts to supply new generation, those differences do not mean that energy efficiency is any less reliable than conventional supply-side generation. In fact, as our expert testimony explains, it is more reliable. Steinhurst, 14-19. *See also* Loiter, e.g., 4-6. Virginia utilities can put together energy efficiency programs that deliver substantial direct kWh reductions from permanent energy efficiency improvements that can be measured and verified, and thereby relied upon as energy sources in their integrated resource planning (IRP) process.
- Affordable. Energy efficiency provides electric utility customers the same service at a lower price than new generation. Energy can be "generated" through energy

efficiency programs at a cost of around 3 cents per kWh, which is far less than the 9.3 cents per kWh that, as of early 2008, Virginia Electric Power (Dominion) estimated it would cost to generate power from its new Wise County coal-fired power plant, Loiter, 29, 17 (referencing SCC Final Order in PUE-2007-00066 (March 31, 2008) at 12). And, of course, this looks even more cost-effective in light of the subsequent double-digit rate increases for which both Dominion and Appalachian Power have since applied to the Commission.[4] When a utility devotes its engineering talent and expertise to finding 500 MW in energy efficiency savings, rather than to building a new 500 MW power plant, its customers in effect pay for the same amount of capacity, but at a third of the cost. Customers that directly participate in the energy efficiency programs will see their monthly bills go down, Steinhurst, 25-26, 36-38; Loiter, 29-30. More importantly, the system-wide impact of tapping into the cheapest form of "generation" for a significant amount of Virginia's energy needs will mean that non-participating customers also benefit from lower bills going forward as compared to business as usual. Steinhurst, 42-47; Loiter, 29-30.

**B. Virginia Can Be a Leader in Energy Efficiency.**

The only thing Virginia needs to achieve energy efficiency targets that would place it among the leaders in energy efficiency are appropriate policies and strong efforts by its

[4] *See* "Business briefs for May 16," Richmond Times-Dispatch (May 16, 2009) ("Appalachian Power Co. wants to raise residential rates about 13 percent to recover the costs of fuel and equipment to reduce air emissions and improve reliability."); Anita Kumar, "Dominion Pursues Another Rate Hike," Washington Post (April 1, 2009) at B01 ("Dominion Virginia Power is seeking to raise electricity rates 6.9 percent during the next 14 months to pay for equipment, salaries, plant construction and conservation projects. The request comes a year after the state's largest energy provider raised rates by 18 percent to cover fuel costs, the largest one-time rate increase in three decades.").

utilities. Loiter, 14-18. Recent legislative actions, such as the 2009 energy efficiency incentives bill, have helped set the stage for utilities to roll out large-scale energy efficiency programs. Much of SELC witness Steinhurst's testimony discusses issues related to the crafting and implementing of energy efficiency policies. *See also* Loiter, 28-32. Moreover, SELC witness Loiter's testimony dispels the notion that there is anything about Virginia that precludes it from immediately and aggressively meeting energy efficiency targets. Specifically, Loiter's testimony shows neither Virginia's climate, energy prices, nor historical lack of large-scale energy efficiency investment offer any reason that Virginia cannot join the growing list of states that are pursuing energy efficiency for significant portions of their energy needs. Loiter, 14-18. To the contrary, these very same qualities tend to make energy efficiency more, not less, viable for the Commonwealth. Loiter, 14-18.

**C. The Distinction between Demand Response and Energy Efficiency is Significant.**

Demand response is similar to energy efficiency, but is focused on containing peak demand by shifting time of use, rather than offsetting the need for new base load capacity. *See generally*, Steinhurst, 5-8, 23-26; Loiter, 3-4, 10-11. An example of a demand response measure, made possible by the installation of smart meters, is programming air conditioning units in a residential area to communicate with each other and stagger the time that they switch on as the outside temperature rises, to reduce the height of the demand curve. Ultimately, though, the same amount of energy is generally used over time despite implementation of demand response measures.

The associated savings to ratepayers from demand response programs are smaller—they benefit from a deferral of the need to build more peaking plants, but ultimately use and pay for

about the same amount of energy. To contain long-term costs to the ratepayers as a whole, it is far more important to offset base load, rather than peaking, capacity. And of course, as explained above, energy efficiency provides significantly greater multi-year bill savings to participating customers.

On the other hand, demand response is smart business practice for utilities, regardless of whether they are granted incentives, because it allows them to avoid paying for the high-cost resources that are only called upon when the system is under maximum strain.

### D. Anticipated Regulation of Greenhouse Gases Makes Energy Efficiency All the More Important.

With the regulation of carbon dioxide and other greenhouse gases ("GHGs") looming, the role of energy efficiency in meeting forecasted demand for electricity cost-effectively is magnified. Steinhurst, 14-18. As observed in the Virginia Energy Plan:

> The potential for carbon regulation . . . creates a risk that Virginia's low-cost generation resources may cost more in the future. Adding energy efficiency and conservation to the mix reduces this risk. . . . Utilities and their consumers face less technical and financial risk if there is less need to construct new facilities.[5]

It is important to note that the prospect of carbon regulation remains even if federal climate change legislation is not enacted this year. Not only will the legislation likely be introduced again, but the U.S. Environmental Protection Agency ("EPA") will continue on its current path toward promulgating GHG national regulations that will apply to new and existing fossil-fueled power plants. As explained in a recent report by the Congressional Research Service ("CRS"), there are several provisions in the existing federal Clean Air Act that EPA may seek to use for placing limits on GHG emissions from stationary sources such as power plants. *See* CRS, Climate Change: Potential; Regulation of Stationary Greenhouse Gas Sources Under

[5] VEP, at 62.

the Clean Air Act, May 14, 2009. In particular, the CRS report explains how EPA's recent proposal to find that GHG emissions from motor vehicles endanger the public health and welfare sets the stage for regulation of stationary sources' GHG emissions under the CAA New Source Performance Standards program. *Id.* at 11-12, 16-21. There is little reason to doubt that if federal legislation fails, EPA will continue to follow the straight line that began with *Massachusetts v. EPA*, 549 U.S. 497 (2007), leading directly to GHG regulations for carbon-reliant forms of generation.

### E. The Energy Efficiency Target Should Be Based in Part on the Expectation that Utilities Must Reasonably Use Their Ability to Craft and Implement Energy Efficiency Programs.

The amount of energy efficiency that can be achieved in Virginia is heavily dependent on the amount of effort that the utilities put into it, and whether they fully avail themselves of the best practices for cost-effective energy efficiency programs established by utilities across the country over the past twenty-plus years. In other words, the utilities can and must maximize energy efficiency potential in Virginia by putting together well designed portfolios of programs from the very beginning that incorporate lessons learned from other states. Utility-run energy efficiency programs must include a suite of programs designed to capture the most cost-effective energy efficiency gains available. As recommended by the September 2008 ACEEE report, these are: improvements to lighting; improvements to building envelopes (such as better insulation, sealing air leakage, and putting reflective coatings on roofs); improvements to HVAC systems; improvements in the efficiency of water heaters; and incentives for energy star appliances, which have relatively low market penetration rates in Virginia. In addition, utilities must roll out strong marketing campaigns, work with a variety of business sectors beyond the ultimate consumer, including new home builders, and be prepared to work with individual large-scale industrial and

commercial customers, from whom large amounts of savings can be achieved. As SELC witness Loiter points out: "Contrary to some arguments against efficiency programs, utilities or other efficiency program administrators have the ability to influence customer purchasing decisions, just as in any industry." Loiter at 31.

### F. It Would be Appropriate for the Commission to Adopt Witness Steinhurst's Adjusted TRC Test for Conducting Cost-Benefit Analyses to Protect the Public Interest.

In his testimony, SELC witness Steinhurst endorses the use of the TRC test to conduct cost-benefit analyses of DSM programs, but recommends that the Commission adjust the TRC test in three ways. Like Steinhurst, Appalachian Power endorses the TRC test, but also raises the issue that adding certain considerations to the TRC test could be beyond the Commission's authority.

While the exact scope of Appalachian Power's concerns is unclear, the Commission would be within its power to adopt Steinhurst's Adjusted TRC Test. The Adjusted TRC test is consistent with the public policy of the Commonwealth. As Dominion points out, in recent legislation the General Assembly has linked the "public interest" to important non-price criteria, such as assistance to low-income customers, environmental protection, and economic development. Dominion, p. 9 (citing, in part, Va. Code § 56-585.1.A.5.c : "In all relevant proceedings … the Commission shall take into consideration the goals of economic development, energy efficiency and environmental protection in the Commonwealth."). Thus, we concur with Dominion witness Shannon Venable's testimony that "It is clear that the General Assembly has determined that certain actions, such as assisting low income customers, promoting economic development, and protecting the environment are in the 'public interest'", Dominion, p. 9, and contend that Steinhurst's Adjusted TRC Test fits within that rubric.

## IV. Conclusion

Environmental Respondents appreciate the opportunity to submit testimony and this supporting brief to assist the Commission in this important proceeding.

Respectfully submitted this 3rd day of August, 2009.

Southern Environmental Law Center, *et al*.

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