

Energizing Virginia: Efficiency First¹

Fact Sheet

A Report by ACEEE (American Council for an Energy-Efficient Economy)

Electricity efficiency offers Virginia an alternative means to satisfy the demand for increased electricity supply. Virginia's growing population and economy dictates an increasing demand for electricity. Traditionally, Virginia's utilities met that increasing demand by increasing the *supply* of electricity. Energy efficiency, on the other hand, reduces *demand* even while supporting a growing economy. As a result, less growth in supply is needed and fewer new power plants must be built.

Energy efficiency potential in Virginia is a very large resource. Adopting the high-investment scenario for energy efficiency policies, described in the ACEEE report, would reduce Virginia's forecasted annual demand for electricity in 2025 by 27%, or 39,000 GWh. Generating that amount of electricity would require more than *eight* new coal power plants the size of the Virginia Hybrid Energy Center in Wise County or more than *three* nuclear reactors the size of the proposed nuclear reactor at Lake Anna.

Energy efficiency in Virginia is an untapped resource. Virginia ranked 38th out of 50 states on ACEEE's 2007 Scorecard, which evaluated each state's energy efficiency policies. This relatively low ranking implies that the potential for energy efficiency in Virginia is largely untapped. By borrowing from the best practices that have been shown to work in other states, Virginia can move quickly and decisively to realize comparable benefits.

Energy Efficiency in Virginia can be implemented and deployed quickly. The high-investment scenario for energy efficiency ramps up its electricity savings by 0.25% annually relative to the previous year's consumption for the first six years. It then levels off at 1.5% annual savings and continues achieving that throughout the plan period. This achieves a cumulative savings of 27% by 2025.

Energy Efficiency provides the lowest cost option, by far, for meeting growing demand for electricity. States with mature efficiency policies are reducing their electricity consumption by 1 to 2% annually at a cost of less than 3¢ per kWh. This is *less than half* the utility-avoided cost of about 6 to 8¢ per kWh in Virginia. The medium-investment scenario cuts customers' electricity bills by a net of \$500 million in 2015 and \$2.2 billion

¹ Published as Report number E085 on September 19, 2008. Available at www.aceee.org

in 2025. The average Virginia household would save a net of \$5 per month by 2015 and \$20 per month by 2025 – a significant de-facto tax reduction.

Investments in energy efficiency will create new, high-quality green collar jobs in Virginia. The medium-investment scenario will create nearly 10,000 new jobs in Virginia by 2025. These include well-paying trade and professional jobs needed to design and install the energy efficiency measures. This is equivalent to adding 100 new manufacturing plants in Virginia.

Recommended Policy Changes

Achieving the potential efficiency reductions depends on enacting multiple recommendations, which differ in savings potential, investments required, organization responsibility and stakeholders. Following are brief descriptions.

- ***Demand Response (DR).*** Demand response focuses on shifting energy use from peak periods to off-peak periods and cutting back on certain electricity uses on days with the highest demand, such as during heat waves. The combination of increased energy efficiency and specific demand response programs will, in the medium-investment scenario, reduce peak demand by 26%, or 8,400 MW, by 2025.
- ***Energy Efficiency Resource Standard (EERS).*** An EERS specifies a target, preferably mandatory, for electricity savings to be achieved by utilities, state agencies or energy-efficiency and services utilities. Targets are apportioned among the participants who develop cost-effective programs to be approved by the state. Governor Kaine set a precedent for this in the electricity re-regulation bill, which set the goal of a 10% reduction in electricity use, relative to 2006 usage, by 2022. Targets for DR may be included in the EERS target. Utilities are provided cost-recovery for expenses based on performance against the targets.
- ***Combined Heat and Power (CHP).*** CHP, the cogeneration of heat and electricity, is a high efficiency solution for industrial and commercial sites that can utilize waste heat from small on-site power plants for industrial processes and heating buildings. CHP thrives in states where incentives are provided and supportive regulations enacted. CHP is often included within an EERS target as a component of its RPS (Renewable Portfolio Standard) requirement.
- ***Manufacturing Initiative.*** A government/industry collaborative is proposed to provide assessments that identify energy efficiency opportunities, access to industry-specific expertise, and trained workers with both manufacturing and energy efficiency expertise. Comparable programs have identified 10-20% electricity savings per facility and achieved a 50% implementation rate.

- ***State and Local Government Facilities.*** Virginia already has an *Energy Service Performance Contracting (ESPC)* program that contracts with *Energy Services Companies (ESCO)* to improve the efficiency of state buildings, with the energy savings achieved paying the cost of the project. It is recommended the ESPC program be expanded, modeled on the best practices of other states, to address more state government facilities and to include local government facilities.
- ***Building Energy Codes.*** Building energy codes regulate the minimum levels of efficiency in new construction. Since retrofitting buildings to improve efficiency is more expensive and less often done, upgrading building energy codes is the most effective way to improve the energy efficiency of buildings in all sectors of the economy.
- ***Appliance Efficiency Standards.*** Federal appliance standards dictate the minimum standards for appliances sold in the United States. Virginia can supplement these with standards regulating an additional six products.
- ***Research, Development and Deployment (RD&D).*** A state RD&D entity, which supports state-specific research, commercialization and technology transfer on efficiency technologies, could be modeled on similar entities in other states. It would help increase the number of energy efficiency-focused jobs and businesses in the state.
- ***Consumer Education and Outreach.*** Public education and media outreach would help jump-start this multi-decade efficiency drive by promoting investments in energy efficiency and conservation. Visible leadership by elected officials, including the Governor, is an essential catalyst for the necessary changes in attitudes. Interestingly, such an effort brings consumption reductions quickly via behavior changes, while the other more substantive programs are still ramping up.
- ***Low-Income Efficiency Programs.*** Existing programs that support the energy needs of low-income households need to be increased, due to the recent increases in energy costs. They also need to be reoriented to focus a greater percentage of their monies on investing in efficiency, especially weatherization, which will reduce expenses in future years, instead of simply subsidizing current expenses. These households simply do not have sufficient funds to make these investments on their own.