

Comments on the SCC Proceeding on Energy Conservation and Efficiency from the Virginia Chapter of the Sierra Club

Preface. The Virginia Chapter of the Sierra Club appreciates the opportunity to have participated in the Efficiency Work Group established by the State Corporation Commission. We believe this process has been very beneficial. However, as Workgroup reports have come out we see a number of new or cross-cutting issues of concern on which we would like to offer comments. It was not feasible nor necessarily appropriate to try to incorporate our comments into the individual subgroup reports. These comments represent the Virginia Chapter and its nearly 17,000 members who consider energy among the top environmental issues in Virginia and in the US.

Findings and Recommendations

Feasibility of the 10% Energy Consumption Reduction Goal

We are pleased the legislature found that it was important to look at demand reduction and to set a goal. ***We believe the goal of 10 percent by 2022 to be quite moderate: it certainly should not be less than 10%.*** As described in the Subgroup 1 report, other states in the eastern United States have adopted reduction targets that are much more ambitious; for example, New York has a goal of 15% reduction by 2015. Studies of the potential for energy savings indicate, on average, that 24% energy savings might be achieved. Furthermore, by supplementing the reductions with distributed, renewable generation, centrally generated power requiring transmission could be reduced substantially more. Most studies of mitigation of climate warming indicate that it will be necessary to substantially reduce energy demand, along with substituting carbon-free energy sources, to achieve the goal of greatly reducing carbon dioxide emissions.

In addition to retaining at least a 10% reduction goal, we recommend that the SCC, the Governor and General Assembly reassess this goal in 2-3 years and determine whether it might be adjusted upward.

The entity or entities that could most efficiently deploy and administer various elements of the plan.

The Subgroup 4 report addresses this question most directly and provides useful background and discussion of issues but does not endorse a particular solution. We believe the most effective mechanism would be a combination of:

- a) The SCC to administer regulatory mechanisms within its jurisdiction such as rate-making, supervision of Energy Efficiency Resource Standards (if adopted), evaluation of the prudence of investments in efficiency, comparison of the cost-effectiveness of investments in efficiency vs. new supply capacity, etc.,
- b) Utility managed programs to deploy those elements which are closely related to utility services and most easily performed by the utilities, such as DSM and metering information, and

- c) An independent contractor supervised by a state agency or the SCC and funded by a public benefits fund to deploy and administer all the other elements of conservation, efficiency and support of distributed renewable energy generation.

That breakdown of responsibilities would apply to private utilities, while programs under non-jurisdiction suppliers such as public and cooperative utilities, and non-jurisdiction customers, would perhaps have to be handled differently.

As explained further below, we strongly prefer the use of mechanism c) over b) to the maximum extent possible because most private utilities in Virginia have not supported conservation and efficiency programs even though they already have the authority and cost recovery mechanisms to do it, and also because providing additional financial incentives to make it more attractive to them might entail excessive costs to energy consumers. The greater transparency and opportunity for public input of c) over b), especially for residential customers, is an additional benefit.

The mix of programs that should be implemented in the Commonwealth to cost-effectively achieve the defined electric energy consumption reduction goal by 2022

The Subgroup reports identify a number of programs and measures to promote energy conservation, efficiency and peak-load reduction. We generally support most of those recommendations but would like to emphasize several and add one more conservation and efficiency measure to the list. Areas we wish to emphasize include:

- Distributed energy generation reduces the need for transmission and distribution lines and for large centralized power plants and thus is broadly similar in effect to conservation and efficiency measures.¹ Distributed generation based on self-reliant micro-grids further has the potential to provide reliable power to customers and to increase the overall reliability and load management of the utility grid. Distributed generation using renewable energy sources could greatly decrease environmental impacts of providing energy services, particularly carbon dioxide emissions. Hence, we recommend that an efficiency program include support for distributed generation, especially generation that is efficient and is low in carbon dioxide emissions.
- In addition to improving energy codes for new and retrofitted buildings, a key need is to improve enforcement of codes by local governments. Currently most of them lack the trained personnel and resources to evaluate permit applications and conduct inspections in regard to energy use. More state support is recommended although additional analysis may be needed to determine how best to achieve that.

An additional measure we would like to add that may require legislative action is:

- Create a revolving fund for providing financial assistance, loans and loan guarantees to schools and local government authorities, non-profit corporations and perhaps other entities for purposes of constructing or retrofitting buildings that exceed mandated state energy codes and sustainable building standards (if adopted) by defined degrees.

¹ Distributed generation may have different peak demand impacts on the grid than conservation and DSM would have, depending on the nature of the distributed generation and its control arrangements with the utility, but these could be either beneficial or detrimental to grid management.

Cross-Cutting Issue #1: Metrics for Cost-Effectiveness

Cost-effectiveness has different implications for different parties affected by energy costs and energy saving measures: energy producers, retail energy consumers, governments (as representatives of the public interest), suppliers of energy-using buildings and equipment, etc. We, along with most environmental organizations, believe it is important that regulatory and financial policies be structured to encourage energy conservation and efficiency action by relevant parties. But there also are important public policy issues to be considered regarding just compensation, wise expenditure of government funds, and the financial interests of energy consumers and taxpayers. How much expenditure for conservation is justified; i.e., what does cost-effective mean? When are incentives justified for various parties and how much?

Energy consumers may be expected to consider the cost-effectiveness of expenditures they have to make in terms of how long it takes them to recoup their investment through energy savings and at what effective interest rate. Sometimes they seek very short periods for recouping their investment. Consumers should have choices to the extent feasible but they should be encouraged to take a long-term perspective and also should be allowed to engage in altruistic or “green” behavior such as electing to make conservation investments that may not necessarily be recouped through energy savings.

We believe that in judging cost-effectives of public expenditures the externalities of energy supply should be considered; i.e., the benefits of energy savings should include reduction of adverse externalities, particularly environmental and climate impacts. However, we understand from remarks in the last plenary section that a court case barred consideration of externalities by the SCC. If that is the case, we recommend that the SCC report recommend that the General Assembly specifically change the law to require consideration of externalities. In some states a *carbon-adder* is used to compare the benefits and costs of alternative actions. A carbon adder, which is a specific value added to the cost of a project per ton of associated carbon dioxide emissions, might be viewed as representing either a surrogate for the external damages of CO₂ or as the likely value of regulatory costs (e.g., a carbon tax) that may be imposed on emissions during the life of the project. Since good estimates of either future damages or control costs might be difficult to obtain, an administratively determined or legislatively-mandated value of a carbon adder is likely to be a necessity at the current state of scientific and technical knowledge.

Incidentally, we were concerned to hear that some members of the Workgroup believe that externalities are already accounted for through environmental regulations, but that is a fallacy. Environmental regulations do not completely eliminate environmental impacts, as should be obvious from the residual and cumulative impacts we see on air and water pollution, aesthetics, natural resource consumption, mining impacts and global warming.

Cross-Cutting Issue #2: Cost Recovery and Incentives for Private Utilities

The Subgroup 4 report discusses this issue and provides useful background and discussion of some alternatives. To the extent that utilities are given responsibilities for part or all of the efficiency, conservation and peak demand-reducing (DSM) programs, the question is how they will be compensated for their efforts and whether they will be forced to achieve performance

goals through regulations, such as Energy Efficiency Resource Standards (EERS), or encouraged to do so through financial incentives such as rate “decoupling” mechanisms or special rewards that attempt to leveling the playing field between traditional supply activities and energy saving activities. As discussed in the Subgroup 4 report, it appears that mechanisms already exist to provide cost recovery for utilities, and yet Virginia remains among states spending the least on electricity demand reduction.. Furthermore, supply-side incentives created in the Electric Utility Re-regulation legislation passed in 2007 tend to tilt the playing field toward expanding fossil-fueled and nuclear generation rather than reducing demand. Creating additional incentives for demand reduction by utilities may therefore be excessively costly, unfairly raising rates to retail consumers.

As explained further below, we believe that the most effective and fair approach would be a combination of EERS and carefully crafted incentives to achieve energy and capacity reductions beyond the minimum values required in the EERS. If responsibilities for reducing demand are shared with a public agency or independent corporation, as we recommend, then utilities should be allowed to purchase credits toward their EERS targets from that entity as well as consumers who achieve savings on their own. Energy savings should be counted as reductions in purchases from utilities and thus include reductions resulting from distributed generation.

Detailed Discussion of Selected Issues and Recommendations

The entity or entities that could most efficiently deploy and administer various elements of the plan.

- Several subgroups have addressed the issue of who and how conservation and efficiency programs should be implemented. A number of options have been identified and pros and cons on different options have been listed. These discussions have evolved considerably over the past week or so. A key option identified in the re-regulation legislation and discussed by several Subgroups is the mechanism of a quasi-independent entity contracted through a state agency and funded by a public benefits fund (PBF) financed through surcharges on some or all ratepayers. We strongly support that option for a number of reasons. Many of the *pros* have already been stated in reports from Subgroups, including Subgroups 2 and 4 and we generally agree with them. We feel that many of the *cons*, are weak or misleading. In many cases, diligence in designing the program can avoid the stated concern. For example, it is stated in Subgroup 4, Page 17 that “Risk of funding programs that are not cost effective” and that could be a risk with any program, including adding new coal capacity. Setting up basic performance measures should provide adequate safeguards.
- Some nationwide studies of efficiency programs such as the ACEEE report “*Five Years In: An examination of the First Half-Decade of Public Benefits Energy Efficiency Policies*” (by Martin Kushler, Dan York, and Patti White; Report Number U041). indicate that utility programs have not very successful in recent years except in states where rates were very high and/or there was difficulty in obtaining new capacity. In contrast, the PBF-based programs have achieved substantial energy and peak load reductions. It does appear that private utilities in most states lack sufficient incentive or commitment to efficiency and conservation and we believe this is very much the case in

Virginia. One argument is that utilities need more financial incentive for conservation, leading to various suggestions for providing more incentive. We take that issue up in the next section, but in summary we believe that it is more cost-effective to carry out efficiency programs through the state or independent entities than to provide the level of incentives that might be required for effective utility action—they simply will require excessive profit, above and beyond what they already are allowed for supply activities. There also is the problem of long-held institutional attitudes in private utilities that prefer supply-side activity and that simply do not believe much energy saving is possible. The latter is reflected in some statements in sub-group reports as well as informal remarks during discussions to the effect that much more additional capacity will be needed no matter what we do to promote efficiency. Do we really want to trust this important function to organizations who fundamentally don't believe in it? We don't!

Other key options include utility-managed programs and combination programs with responsibilities for different functions divided between a PBF organizations and utilities. To the extent that private utilities have some of the responsibilities, the issues of compensation and/or incentives for utilities discussed below may become relevant.

Cost-Effectiveness Measures and Incentives for Utilities and Other Parties

There has been a lot of discussion among the Subgroups about what roles utilities should play in fostering efficiency, what types of incentives should be established to make efficiency attractive to utilities, and what criteria should be applied for determining cost-effectiveness.

Environmental groups generally believe it is important that regulatory and financial policies be structured to encourage energy conservation and efficiency action by relevant parties, including energy consumers, equipment suppliers, builders, utilities and others. But there also are important public policy issues to be considered regarding just compensation, wise expenditure of government funds, and the financial interests of energy consumers and taxpayers. When are incentives justified and how much?

Questions of what expenditures for efficiency are justified need to be viewed from the perspective of each party involved, for example: consumers of energy, government agencies (considering what is best for the public and taxpayers they represent), publicly-owned utilities, builders, and private utilities among other parties.

Generally speaking, economists have developed guidance for public policy decisions based on concepts of general welfare, leading to measures such as benefit/cost ratios for public expenditures. Resource Economics theory also indicates that benefits should take into account external diseconomies (*externalities*) such as environmental pollution in establishing public policies. We understand from remarks in the Workgroup plenary session on September 14 that previous court cases have limited the ability of the SCC to consider externalities. That could be a major impediment to wise and balanced policies for promoting energy efficiency and conservation. In particular we believe that the benefits of mitigating global warming by reducing greenhouse gas emissions, as well as reducing conventional pollution, are central to the

justification for energy conservation and efficiency policies.² Hence, if the impediment to considering externalities indeed exists **one recommendation we have is that the SCC report to the General Assembly should include a recommendation for the General Assembly to correct this impediment legislatively.**

Another issue concerning benefit/cost tests is they usually concern only economic efficiency and not equity considerations. But overall State government bodies such as the Governor and General Assembly cannot and should not ignore equity. That implies that fairness of the *distribution* of costs and benefits also should be considered in adopting regulatory and financial incentives. For example, even if the overall benefits (including externalities) were positive for providing excessive compensation for utility energy saving programs, it would still be unfair to consumers. The net result could be to enrich utilities at the expense of those consumers.

Privately-owned utility corporations are in business to make a profit. While utility regulation has become complicated, we believe that the basic principle of regulating monopoly utilities should remain that of allowing a fair and reasonable return on a utility's investment. If a utility makes allowable investments and expenditures to promote efficiency and conservation, they should make a reasonable profit on that. In fact authority already exists to assure that as explained in the Subgroup 4 report. We see no justification for additional rewards for dubious concepts such as "lost revenues" that might result from reductions in energy demand.³ However, it has been suggested that leveling the playing field for energy efficiency requires that such investments be treated on the same basis as allowable investments and expenditures for producing and selling energy. A potential problem with achieving that level playing field is that regulation of electric utilities in Virginia has already deviated substantially from equitable principles of return as a result of the 2007 de-regulation legislation, which provides additional return on investments in coal, nuclear power, and gas turbine plants in the form of additional basis points. We see no justification for such enhanced compensation, especially since such investments are not inherently beneficial to consumers or to the general public and have substantial negative externalities, thus distorting the whole concept of utility regulation.⁴ One option is to create

² Even absent the desire of Virginia to contribute to mitigation of global warming for its national and global benefits, there is a justification based on self-interest of Virginians. It appears fairly likely that national and/or international efforts to curb global warming will eventually lead to curbs on carbon dioxide emissions that will impact on Virginia energy production and use, effectively raising the costs of carbon emitting activities and products created by those activities. Virginia policies that reduce the carbon intensity of our activities, especially policies affecting long-term investments, serve to protect Virginia against the risk of facing those future higher costs that are not presently factored into decision making.

³ At least one major private utility representative suggested that they were not that interested in decoupling but did believe that they should be reimbursed for energy savings in the form of compensation for lost revenue in addition to receiving return on investments made to improve energy efficiency. Although those suggestions were not spelled out in detail so we are not sure precisely what that means. However, it raises some concerns whether utilities are expecting excessive compensation for fostering efficiency or even expecting compensation for energy savings achieved by other programs. The overall return on investments presumably is considered by the SCC in approving rates, so no special compensation for "lost revenue" should be justified.

⁴ Investments in coal have negative environmental externalities such as global warming. Investments in nuclear power have risks associated with disposal of radioactive wastes and diversion of nuclear materials. There is a risk that investments in coal and other fossil fuels will incur future costs if use of those fuels is subject to future regulatory limits or taxes on CO₂ emissions. In the worst case, coal plants might become economic stranded capital if those limitations or costs force their early retirement, and rate-payers may end footing the bill for such economic losses. Those factors might be openly and publicly considered in an Integrated Resource Planning approach to capacity expansion decisions.

equal incentives to investments in efficiency and renewable energy sources by amending the state codes to include basis points for those investments equal to those provided for coal and nuclear power plants. However, that may not be entirely fair to ratepayers. From the rate-payer perspective, a better option would be to remove the extra basis points for coal, nuclear and gas turbines plants. Indeed, this **problem raises the more basic question of whether it is wise and practical to try to promote efficiency in Virginia through incentives to private utilities.** A third option is to require utilities to promote energy efficiency and achieve a defined degree of reduction, known as energy efficiency resource standards (EERS) while allowing them a “reasonable profit” overall. **That eliminates the excess profit issue but may not elicit all the potential energy savings that may be possible, depending on the level of EERS established. To correct that problem, a fourth option, which we have not seen discussed in the Subgroup reports, is a combination policy: establish EERS targets but create incentives for savings in excess of the targets. And of course, a fifth option** is to use other entities to carry out efficiency programs (e.g., through a public benefits fund). Of course, in the course of rate hearings utilities would continue to receive consideration for losses due to stranded investments that result from unexpected reductions in energy demand provided those investments prudently were allowed to be made in the regulatory process with due consideration of future demand projections. Arguably the most practical and politically feasible solution may be to combine options 4 and 5: assign substantial responsibility to an independent entity, establish EERS targets for utilities, create reasonable incentives for them to exceed those targets, and allow them to purchase savings credits achieved by other parties such as the independent entity or directly by consumers.

Publicly-owned and cooperative utilities constitute a different situation and the same considerations do not apply to them. Both are effectively owned by the customers they serve and thus have an incentive to reduce overall costs to their customers, taking into account direct and indirect costs including externalities that affect their customers and other considerations.

To the extent that public funds are used to promote efficiency or if such funds are collected from residential ratepayers through a public benefits fund, the criteria for cost-effectiveness should take into account full social benefits to the public, including externalities affecting the Virginia public. Funds expended directly by consumers may meet other tests appropriate to their self interests, although provisions should be included in the program to address the desires of some consumers to engage in altruistic or “green” behavior. That simply means that program criteria should not exclude supporting measures in which consumers do not recoup all of their costs provided they are fully informed of that fact and make that choice.

Workgroup 3 has prepared a thorough report on Demand Management and we find it to be of high-quality. This is an important topic area that can yield some immediate returns and we encourage the SCC to give it a priority.

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