BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF DELAWARE

IN THE MATTER OF THE INVESTIGATION	**)**	
OF THE PUBLIC SERVICE COMMISSION	**)**	**PSC REGULATION DOCKET**
INTO REVENUE DECOUPLING MECHANISMS	**)**	
FOR POTENTIAL ADOPTION AND IMPLEMEN-	**)**	**NO. 59**
ATION BY ELECTRIC AND NATURAL GAS	**)**	
UTILITIES SUBJECT TO THE JURISDICTION	**)**	
OF THE PUBLIC SERVICE COMMISSION	**)**	
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Background

Opportunities for cost-effective energy efficiency and energy conservation investments in Delaware's electric and natural gas markets have been documented for many years. Briefly, the Delaware Climate Change Consortium reported in 2000 that a 25-30% decrease in residential, commercial and industrial electricity and natural gas use (relative to "business as usual") could be achieved at a net economic benefit to consumers, while reducing carbon emissions from these sectors by an equivalent amount.[1] The Energy Task Force, created by Governor Ruth Ann Minner in 2002 by Executive Order 31, concluded similarly in its 2003 report that opportunities for cost-effective energy efficiency in utility services were approximately 30%.[2]

Recently, a 6-month intensive investigation by the Sustainable Energy Utility Task Force of the energy efficiency and conservation potential in the State found that *Delaware residential sector electricity use could be cost-effectively cut in half* if strategies employed for the last 8-10 years in the states of California, Connecticut, Massachusetts, New Jersey, New York and Vermont were available to the State's households. It further found that *Delaware commercial sector electricity use could be cost-effectively cut by one-third or more* if strategies employed by the abovementioned states were available to businesses in the State.[3]

Energy efficiency and conservation investments have the additional merit of producing the largest measured reductions in energy price volatility of any policy option studied. National research by the Lawrence Berkeley National Laboratory and the American Council for an Energy-Efficient Economy concluded in 2001 that cost-effective energy efficiency investments

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[1] Delaware Climate Change Consortium, 2000, *Delaware Climate Change Action Plan*. Available at: http://www.udel.edu/ceep/publications/energy/reports/energy_delaware_climate_change_action_plan/fullreport.pdf US EPA methodology was used to account for carbon impacts.

[2] Delaware Energy Task Force, 2003, Bright Ideas for Delaware's Energy Future: Final Report to the Governor. Available at: http://www.delaware-energy.com/Download/Delaware%20Energy%20Task%20Force%20-%20Full%20Text%20Version.pdf

[3] See the filed April 10, 2007 comments by the Task Force for PSC Docket Nos. 06-241 & 07-20, reporting on its econometric model estimates of comparative electricity intensities of 8 states (including Pennsylvania). Available at: http://www.seu-de.org/docs/IRP_submission_4-10-07.pdf (see pp. 9-12). While a pdf file of the Task Force's comments was provided to the Delaware PSC, it elected to upload a faxed version that lacks color presentation of figures. Therefore, the url for the same comments available on the Task Force's website is cited here.

in the U.S. would yield a 37% decline from 1999 levels by 2020 in natural gas prices over business as usual forecasts.[4] Nothing on this scale has been documented empirically for other options in the country.

Carbon reductions associated with energy efficiency, conservation and customer-sited renewables[5] investments are likewise substantial. While the Task Force investigated the cumulative carbon reductions of such investments in all sectors and for all fuels, it is important to note that investment in only one-third of the State's cost-effective energy efficiency and conservation opportunities will yield five times as much carbon impacts as the State's participation in the Regional Greenhouse Gas Initiative (RGGI).[6]

Although the economic and environmental benefits of energy efficiency, conservation and customer-sited renewables are large, U.S. utility sector investment in them has not been significant.[7] Vertically integrated, regulated utilities with linked generation/supply assets and distribution networks profited by the sale of more energy, not its efficient use. This can be specifically traced to regulation itself, which rewarded companies with guaranteed markets and returns if they maintained high levels of supply/generation at stable prices.[8] So-called network or 'wires' utilities, formed in response to efforts to deregulate utility generation markets, may face a smaller disincentive but their regulation continues to differentially reward infrastructure over end-use efficiency investment. In both scenarios, customers furnish utilities with the means for

[4] Nadel, Steven and Howard Geller, 2001, *Smart Energy Policies: Saving Money and Reducing Pollutant Emissions through Greater Energy Efficiency*. Washington, DC: American Council for an Energy-Efficient Economy.

[5] When deployed on the demand-side of the meter, renewable energy investments have economic and environmental impacts identical to those provided by energy efficiency and conservation.

[6] See the filed April 10, 2007 comments by the Task Force for PSC Docket Nos. 06-241 & 07-20 (available at: http://www.seu-de.org/docs/IRP_submission_4-10-07.pdf, especially p. 13).

[7] Exceptions exist, including the six states identified by the Task Force as pioneers in the field – see its Briefing Book (available at http://www.seu-de.org/docs/SEU_Full_Report.pdf, especially Section H and Appendix A). For the record of the US regulated utility industry in DSM promotion, see the historical data collected by the US Energy Information Administration, available at: http://www.eia.doe.gov/cneaf/electricity/page/at_a_glance/dsm_tabs.html.

[8] The literature on this point is vast. We merely mention a classic and contemporary source for reference: Kahn, Alfred E., 1970-71, *The Economics of Regulation: Principles and Institutions.* New York: Wiley and Sons. 2 volumes; and Hunt, Sally, 2002, Making Competition Work in Electricity. New York: Wiley and Sons.

investment through rate tariffs set by regulation. Tariffs and other regulations still signal utilities that returns and financial security are more likely and, possibly, greater if investments concentrate on the supply-side of the meter. With customers facing a fragmented array of providers of services (or their complete absence) on the demand-side of the meter, and with poor access to capital (especially capital at borrowing rates available to utilities), their ability to reverse this bias by self-action is limited. This is particularly true for families living in rental housing and with moderate incomes to cover the costs of daily life. Small businesses facing tight profitability conditions may also be especially disadvantaged by this circumstance.

Revenue decoupling has long been cited as a mechanism to dampen or remove the disincentive for utility investment in demand-side efficiency and conservation.[9] Filed comments by the Natural Resources Defense Council in this docket offer a helpful background to the subject.[10]

Key Issues Considered by the Sustainable Energy Utility Task Force

1. Should regulated utilities provide DSM services?

The Task Force welcomes the fullest possible range of participants in the pursuit of cost-effective DSM and other sustainable energy opportunities. For too long, Delaware has lagged behind in the development of sustainable energy markets. While many factors have contributed to the State's lethargy on this score, its regulatory policy framework is one source of concern. DSM regulation in Delaware has been mostly reactive – the State has taken action when federal law required it and then, usually, in response to plans and proposals submitted by the utility industry. For its part, the utility industry has shown little sustained interest in DSM. The predictable result is that Delawareans are not afforded the benefits of energy efficiency and conservation in their use of electricity and natural gas.

Regulated utility providers of DSM services can potentially enlist technical and marketing expertise at a scale and scope that can be difficult to match. At the same time, regulated utilities are not uniquely qualified to provide DSM services. Based on its investigation of institutional

[9] It has been the focus of regulation in certain states, notably California. See, e.g., Denny, F.I. and Dismukes, D.E., 2002, *Power System Operations and Electricity Markets*. New York: CRC.

[10] Distributed to service list but not yet posted on the Delaware PSC website.

and policy models in use in the U.S. and under conceptual development in the research literature, the Task Force has recommended that the development of sustainable energy services include many providers with differing services and products, expertise, community outreach abilities and networks, organizational and marketing approaches, etc.[11]

2. Is there a conflict between the SEU and DSM service provision by regulated utilities?

With the Sustainable Energy Utility (SEU) now authorized by state law, members of the Task Force have been approached with questions concerning possible conflicts between the SEU and regulated utilities.

It should be noted that the SEU has authority to invest in sustainable energy opportunities in *all sectors and all fuels.* Thus, DSM service provision represents only one segment of opportunity to be developed by the SEU. As well, the SEU has authority to act on behalf of all consumers of utility services, not simply those under the regulatory jurisdiction of the Delaware PSC.

Confining discussion to the segment under the jurisdiction of the Delaware PSC, it is important to observe that the SEU's Contract Administrator[12] will organize, through performance-based contracting, a large number of service providers (both from within and beyond the state's business community). Thus, it is not inherently in direct conflict with regulated utilities providing DSM services. For example, regulated utility DSM programs could be developed under contract with the SEU. There may also be opportunities for collaborative planning between the SEU and regulated utilities to develop sustainable energy services. In both instances, there is no necessary conflict between the SEU and the provision of DSM services by regulated utilities.

[11] For example, the presentation by Ralph Nigro to the Task Force on December 12, 2006 (available at: http://www.seu-de.org/docs/SEU_Model_Presentation_12-12.pdf, especially pp. 7-8 and p. 15; and the presentation by Senator McDowell and Dr. John Byrne to the Governor's Energy Advisory Council on February 22, 2007 (available at: http://www.seu-de.org/docs/McDowell_Presentation_GovEnergyAdCouncil_2-22.pdf, especially pp. 9-10).

[12] For a finition of this entity, see the presentation by Ralph Nigro to the Task Force on December 12, 2006 (available at: http://www.seu-de.org/docs/SEU_Model_Presentation_12-12.pdf, especially p. 12).

If neither of these options obtains, the SEU and regulated utilities conceivably would compete to provide DSM services to Delawareans. It would be important to ensure that competition is genuine and the market power of long-established utilities protected by regulation is not used to squeeze out the participation of others in the sustainable energy marketplace. It is especially important that regulation is not used to unduly advantage regulated utilities in the process by providing financial security and risk protection to them which Delaware's energy service businesses can never realize.

Below the Task Force offers suggestions on how to address this issue – namely, the use of performance-based regulation (which includes performance-based targets and the creation of a risk premium on a portion of the utility's approved return on equity) and the promotion of cooperative planning between the SEU and regulated utilities in the development of sustainable energy services for utility customers.

3. Is decoupling an appropriate recovery mechanism in light of the creation of the SEU in Delaware? How can the utility quantify the impact of utility energy efficiency and conservation efforts and the supposed impact on utility revenues? What adjustment(s) should be made to a utilities' approved return on equity (in terms of basis points) when it imposes a revenue decoupling mechanism?

The Task Force regards theses questions as interrelated.

The SEU will develop sustainable energy markets on a performance contracting basis. Implementation contractors[13] will receive no guarantee of a rate of return from such contracting. Equally important, implementation contractors will have to expose themselves to investment risks in order to recover costs and possibly gain bonuses for delivery of services above contract targets or incur penalties for delivery of services below contract targets.

Revenue decoupling does not *per se* guarantee a rate of return, but other forms of decoupling might in fact do this, creating an 'uneven playing field' in the sustainable energy services marketplace. If decoupling rate design is adopted by the Delaware PSC, the Task Force

[13] See the presentation by Ralph Nigro to the Task Force on December 12, 2006 (available at: http://www.seu-de.org/docs/SEU_Model_Presentation_12-12.pdf, especially p. 15).

recommends that steps are taken to avoid possible adverse impacts on Delaware businesses who wish to be implementation contractors to the SEU.

All forms of decoupling can minimize risks associated with regulated utility investment in DSM without regard to performance (specifically, without necessarily achieving *lower* bills for consumers).[14] Implementation contractors with the SEU cannot skirt this performance test – consumers will abandon them and the SEU if investments do not lower consumer bills. Further, the SEU finances its investments based in part on bill savings, which are then shared with the SEU. If there are no significant savings, the SEU will be unable to finance future investments and will have to cease operation.[15]

Additionally, decoupling policies raise the problem of determining when and how reduced consumer usage of a utility service is associated with a strategic investment by the regulated utility on behalf of the consumer and when it is a result of other factors, such as service substitutions due to high prices, consumer desires to be independent, falling consumer incomes, etc. This problem can lead to rewards for a regulated utility when its efforts are not actually improving energy efficiency or promoting cost-effective conservation.

The Task Force believes performance-based policymaking better serves the State's general interest in the development of sustainable energy services for its citizens and businesses. Applied to regulated utilities, this principle means putting at risk a portion of a regulated utility's rate of return based on performance of its DSM programs to ensure consumers of utility services they are not simply paying to consume *and* not to consume a regulated utility's product. If the expected level of performance is set above expectable market- or technology-based improvements, costly searches for cause-effect evidence, which mainly benefit consultants, can be circumvented to a degree. Regulation to decouple revenue from the volume of sales has often

[14] The Task Force does not mean by his statement that all decoupling policies *must* reduce risk without regard to performance. As discussed shortly, there are policy designs which can obviate this problem.

[15] For details of the SEU's financing and economics, see Dr. Byrne's presentation to the Task Force on March 6, 2007 (available at: http://www.seu-de.org/docs/SEU_Finance_Presentation_Byrne_03-06.pdf)

been ensnared by demands for such evidence, which, to say the least, has frequently proven elusive.

The Task Force therefore recommends inclusion of concrete performance-based elements in any decoupling rate design. There are established methods in econometrics for the estimation of what are sometimes called automatic energy efficiency improvements.[16] Setting targets above these expectable improvements and regularly advancing performance targets (in the form of consumer bill reductions in general and also for specific customer segments) will ensure consumers and policymakers that DSM investments are contributing to genuine market transformation. Identifying specific performance targets for investments in low- and moderate-income and small business efficiency/conservation needs likewise will protect against burden shifting if regulated revenue requirements are increasingly met in greater measure from fixed charges compared to volumetric charges. Generally, performance targets that combine increasing energy efficiency and peak shaving goals with reduced bills would be recommended.

4. To what extent will low-income and small business customers participate in and benefit from utility efforts to promote energy conservation and efficiency as a result of decoupling?

Decoupling rate design should not result in an increase in electricity costs for low and moderate income customers. Because these residential users must apply a higher portion of their income to meet utility bills,[17] an increased fixed charge in billing of their service (in order to decouple revenues from sales) will exacerbate social inequity and may lead to reduced consumption in this customer segment having little or nothing to do with participation in programs supported by revenue from a decoupling charge.

This problem can be addressed by: 1.) setting a lower decoupling rate for small residential energy consumers (for example, for those who qualify for the federal LIHEAP program), thereby

[16] See, e.g., Hassol, S.J., Strachan, N.D., Dowlatabadi, H., 2002. "Energy efficiency: A little goes a long way." In: Watts, R.G. (ed.), *Innovative Energy Strategies for CO2 Stabilization*. Cambridge University Press, Cambridge, pp. 87–121; and Alcamo, J., Kreileman, E., Krol, M., Leemans, R., Bollen, J., van Minnen,, J., Schaeffer, M., Toet, S., de Vries, B., 1998. "An instrument for building global change scenarios." In: Alcamo, J., Leemans, R., Kreileman, E. (eds.), *Global Change Scenarios of the 21st Century*. Oxford, MA: Pergamon, pp. 3–96.

[17] For an empirical estimate of the differential income effort needed to pay residential electric bills, see the U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy "Weatherization Works"! Fact Sheet (2006) (available at: http://www1.eere.energy.gov/office_eere/pdfs/wap_fs.pdf).

addressing the need for equity in income effort to pay electric bills; 2.) requiring achievement of performance-based targets for this specific customer segment which lower bills as a result of programs funded by revenues gained from decoupling rate design, with failure to meet targets resulting in a loss of a portion of the utility's rate of return. Specific performance targets for small business customers can likewise reduce burden shifting to these ratepayers.

5. Should a decoupling mechanism be limited to the residential and commercial customer service classes?

Large industrial consumers often have substantial energy bills, on the one hand, and dedicated energy staff, technical expertise, comparatively easier access to capital, and other resource and organizational advantages, on the other, which lead them to invest in energy efficiency and conservation to a greater extent than the average business or household. It can therefore be argued that these consumers should be exempted from decoupling charges: with both the means and the interest in lowering their energy bills, they do not need utility programs to produce DSM investments for them.

Yet, large industrial consumers benefit from energy efficiency gains achieved by other classes of customers in the form of reduced line congestion, less fuel price volatility, and lower pollutant emissions (thereby lowering the risk of future policy responses which might otherwise lead to increases in utility service prices).

This creates a challenge of balancing costs with benefits. A practical solution, consistent with the performance targeting principle discussed above, is for large industrial customers to have and meet efficiency targets, and be rebated decoupling charges when targets are met or exceeded without relying on utility program monies.

6. What additional approaches can be considered to encourage the utility to promote energy efficiency and conservation?

The Task Force believes major changes in regulatory policy are needed for Delaware's regulated energy industry to effectively participate in the State's objective to move toward a sustainable energy future.

A policy option discussed in meetings of the Task Force and under active investigation is the stipulation of an "energy resource loading order" in which energy efficiency and conservation are given first priority in meeting forecasted demand for utility services, with a second priority assigned to customer-sited renewables and then all renewables. All would need to meet economic tests. Several states have adopted this policy, with California's initiative being perhaps the most celebrated in the country: "cost effective energy efficiency [is] the resource of first choice for meeting California's energy needs."[18] The Task Force believes an energy resource loading order policy which gives priority to energy efficiency, conservation, and customer-sited renewables is an essential component of a regulatory framework aimed at helping Delaware to realize a sustainable energy future. While decoupling rate design can facilitate the regulated energy industry's contribution to this State objective, its effectiveness is enhanced when it functions in a policy framework with such a resource loading order priority.

The Task Force recognizes the limited focus of this docket. But in the spirit of the Issue List assembled by the Hearing Examiner, it wishes to note this additional policy need if decoupling is to be most effective in its underlying purpose in Delaware.

7. Is decoupling favored by the Task Force?

It is too early in this Docket to answer flatly "yes" or "no" regarding decoupling. However, the Task Force regards revenue decoupling as a promising tool to improve development of sustainable energy services for the State. For decoupling to realize its full promise, performance targets, a risk premium on a utility's approved return on equity, and the specific needs of consumers at greatest risk of burden shifting will need to be addressed as key elements of a decoupling rate design.

The Task Force also believes specific cooperative planning mechanisms ought to be put in place to make best use of public resources dedicated to improvement of the State's sustainable energy

[18] See CPUC and CEC. 2005. Energy Action Plan II: Implementation Roadmap for Energy Policies, p. 2. Available at: http://www.energy.ca.gov/energy_action_plan/2005-09-21_EAP2_FINAL.PDF . For further discussion of this option, see the April 10, 2007 filed comments of the Task Force in PSC Docket Nos. 06-241 & 07-20 (available at: http://www.seu-de.org/docs/IRP_submission_4-10-07.pdf, especially pp. 7-9).

services. The existence of the SEU offers an exceptional opportunity for Delaware to pioneer in the development of energy efficiency, conservation and customer-sited renewables. It is essential that cooperation become the hallmark of planning by all stakeholders to advance the State's interest in sustainable energy services. In this vein, decoupling rate design should encourage cooperative planning with the SEU.

Respectfully submitted on behalf of the Sustainable Energy Utility Task Force.