

**STATE OF VERMONT**  
**BEFORE THE PUBLIC SERVICE BOARD**

<b>Investigation into Petition Filed by</b>	)	
<b>Vermont Department of Public</b>	)	
<b>Service Re: Energy Efficiency</b>	)	<b>Docket No. 7466</b>
<b>Utility Structure</b>	)	
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**Prefiled Testimony of William Steinhurst**  
**Synapse Energy Economics, Inc.**

**On Behalf of**

**Conservation Law Foundation**

**June 26, 2009**

**Summary:**

Mr. Steinhurst's testimony addresses the structure of the State Energy Efficiency Utility (EEU), the effects this structure has on its performance, and offers recommendations for structural changes to improve performance.

**Exhibits:**

CLF-WS-1 Spending and Savings Data for Leading Energy Efficiency States  
CLF-WS-2 Comparison of Leading Utilities

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Prefiled Testimony  
of  
William Steinhurst

**Q1. PLEASE STATE YOUR NAME AND OCCUPATION.**

A1. My name is William Steinhurst, and I am a Senior Consultant with Synapse Energy Economics (Synapse). My business address is 45 State Street, #394, Montpelier, Vermont 05602.

**Q2. ON WHOSE BEHALF DID YOU PREPARE THIS PREFILED TESTIMONY?**

A2. I prepared this testimony on behalf of the Conservation Law Foundation.

**Q3. PLEASE SUMMARIZE YOUR QUALIFICATIONS.**

A3. I have over twenty-five years' experience in utility regulation and energy policy, including work on renewable portfolio standards and portfolio management practices for default service providers and regulated utilities, green marketing, distributed resource issues, economic impact studies, and rate design. Prior to joining Synapse, I served as Planning Econometrician and Director for Regulated Utility Planning at the Vermont Department of Public Service, the State's Public Advocate and energy policy agency. I have provided consulting services for various clients, including the Connecticut Office of Consumer Counsel, the

1 Illinois Citizens Utility Board, the California Division of Ratepayer Advocates,  
2 the D.C. and Maryland Offices of the Public Advocate, the Delaware Public  
3 Utilities Commission, the Regulatory Assistance Project, the National Association  
4 of Regulatory Utility Commissioners, the National Regulatory Research Institute,  
5 AARP, the Union of Concerned Scientists, the Northern Forest Council, the Nova  
6 Scotia Utility and Review Board, the U.S. EPA, the Conservation Law  
7 Foundation, the Sierra Club, the Oklahoma Sustainability Network, Illinois  
8 Energy Office, the Massachusetts Executive Office of Energy Resources, the  
9 James River Corporation, and the Newfoundland Department of Natural  
10 Resources.

11 I hold a B.A. in Physics from Wesleyan University, and an M.S. in  
12 Statistics and Ph.D. in Mechanical Engineering from the University of Vermont.

13

14 **Q4. PLEASE SUMMARIZE ANY PRIOR EXPERIENCE WORKING ON**  
15 **ENERGY EFFICIENCY.**

16 A4. I have testified as an expert witness in approximately 30 cases on topics including  
17 utility rates and ratemaking policy, prudence reviews, integrated resource  
18 planning, demand side management policy and program design, utility financings,  
19 regulatory enforcement, green marketing, power purchases, statistical analysis,  
20 and decision analysis. I have been a frequent witness in legislative hearings and  
21 represented the State of Vermont, the Delaware Public Utilities Commission  
22 Staff, and several other groups in numerous collaborative settlement processes  
23 addressing energy efficiency, resource planning and distributed resources.

1 I was the lead author or co-author of Vermont's long-term energy plans  
2 for 1983, 1988, and 1991, as well as the 1998 report *Fueling Vermont's Future:*  
3 *Comprehensive Energy Plan and Greenhouse Gas Action Plan*, as well as  
4 Synapse's study *Portfolio Management: How to Procure Electricity Resources to*  
5 *Provide Reliable, Low-Cost, and Efficient Electricity Services to All Retail*  
6 *Customers*. I was recently commissioned by the National Regulatory Research  
7 Institute to write *Electricity at a Glance*, a primer on the industry for new public  
8 utility commissioners, which included coverage of energy efficiency programs.

9

10 **Q5. PLEASE SUMMARIZE YOUR TESTIMONY.**

11 A5. My testimony will address the effectiveness of the current structure of the State  
12 Energy Efficiency Utility ("EEU"). I will begin by addressing whether the EEU  
13 structure needs to be changed. My testimony then considers in greater specificity  
14 certain details of the current EEU structure. I highlight problems related to the  
15 three-year contract cycle limit and shortcomings of the current EEU structure,  
16 pointing out key elements for developing a new EEU structure. My testimony  
17 concludes that an Order of Appointment with an indefinite term is the option that  
18 best addresses the problems related to the EEU's relationship with the Board  
19 while ensuring adequate oversight and accountability of the EEU. Based on past  
20 performance and in comparison with similar programs in other states, this  
21 testimony recommends a 12-year Order of Appointment cycle and retention of the  
22 incumbent EEU contractors during the initial Order of Appointment.

23

1 **Q6. DOES THE CURRENT ENERGY EFFICIENCY UTILITY (EEU)**  
2 **STRUCTURE PRESENT PROBLEMS FOR ITS EFFECTIVE AND**  
3 **EFFICIENT OPERATION?**

4 A6. Yes. The current structure is problematic in two significant areas, as first noted by  
5 the Board in its “Revised Task Statement for Discussion of EEU Structure” of  
6 August 14, 2007. First, the three-year contract cycle limits the effectiveness of the  
7 EEU in playing a role in long-term resource acquisition and forecasting for  
8 Vermont. Second, the contractual relationship between the EEU and the Board  
9 hampers the ability of the EEU to fully participate in regulatory proceedings.  
10 Also, the Board’s ability to exercise its proper role as an independent regulator in  
11 matters related to the EEU would be enhanced by changing that relationship.

12

13 **Q7. HOW DOES THE THREE-YEAR CONTRACT CYCLE LIMIT THE**  
14 **EFFECTIVENESS OF THE EEU IN PARTICIPATING IN LONG-TERM**  
15 **RESOURCE ACQUISITION AND FORECASTING?**

16 A7. Financing limitations, efforts for contract renewal, the ending of contracts, and the  
17 length of contracts all limit the energy efficiency resources that can be acquired  
18 by the EEU. With a three-year contract, financing of measures by the EEU is  
19 limited to the three-year period and use of potentially beneficial longer term  
20 financing is effectively precluded. Efforts needed to re-bid or to renew a contract  
21 every three years take away from activities to acquire energy efficiency.  
22 Efficiency investments at the end of a contract period can be limited because of  
23 uncertainty about continued operation or support. The length of the contract

1 affects the efficiency measures that will be acquired as the EEU has an inherent  
2 incentive to show savings during the term of its contract and would see little or no  
3 benefit from acquiring savings beyond its contract period. As a result, the current  
4 structure creates barriers for Vermont's acquiring all reasonably available cost-  
5 effective energy efficiency and may increase the cost and regulatory burden of  
6 doing so. Initiatives that require a longer-term time horizon or financing that  
7 extends beyond the contract period are more difficult in the current structure.  
8 Specific efforts such as EEU participation in the ISO-New England Forward  
9 Capacity Market are particularly problematic under the current model because  
10 they require longer-term commitments and a certainty that the activities involved  
11 will extend into the future. For example, with the current structure, the EEU is  
12 required to bid resources into the Forward Capacity Market that it has no certainty  
13 it can or will acquire as it does not know if it will continue to operate beyond the  
14 three year contract. Also, the Forecast 20 demand resources planning process  
15 (mandated in the Board's Order in Docket 7081) could be affected by term limits.

16

17 **Q8. WHAT ARE THE SHORTCOMINGS OF THE CURRENT EEU**  
18 **STRUCTURE IN TERMS OF THE RELATIONSHIP BETWEEN THE**  
19 **EEU AND THE BOARD?**

20 A8. Because of the contract structure, the EEU acts as an agent of the Board, as I  
21 understand the term, and the EEU is not able to advocate and participate in  
22 activities and proceedings as freely as other stakeholders. As an agent of the  
23 Board, the EEU's actions are on behalf of the Board, which has a responsibility

1 for independent oversight. The close relationship affects both parties. The effects  
2 on the EEU are explained above. The ease with which the Board can exercise  
3 independence for oversight would be enhanced, which in turn has the potential to  
4 enhance the effectiveness of that oversight. Greater independence for both the  
5 Board and the EEU would be beneficial and better ensure the effective function of  
6 both parties' roles and responsibilities.

7

8 **Q9. WHAT KEY ELEMENTS SHOULD BE INCLUDED IN ANY NEW EEU**  
9 **STRUCTURE?**

10 A9. Any new EEU structure should feature the following characteristics:

11 1. The new EEU structure should maximize the capability of the EEU to meet  
12 the needs of statewide long-term electric resource planning, including the  
13 planning requirements adopted as a result of the Docket 7081 Transmission  
14 Planning Investigation. This process provides for a 20-year planning horizon,  
15 and the structure adopted for the EEU should be able to operate effectively  
16 over that planning horizon. The EEU is already charged with developing its  
17 own 20-year forecast ("Forecast 20"), a task that is made more difficult and  
18 speculative by a 3-year contract cycle.

19

20 2. The new EEU structure should continue the current performance-based  
21 evaluation framework. This has been an important and effective aspect of the  
22 existing structure. I credit it with much of the success of the EEU to date and

1 with the level of public credibility the EEU has maintained. Any change to  
2 the structure should maintain a performance-based evaluation.

3  
4 3. The new EEU structure should maximize the ability of the EEU to access  
5 capital through long-term bonding or other financing tools. This was a key  
6 limitation in the EEU budget determination and must be addressed if Vermont  
7 is to acquire all reasonably available cost-effective energy efficiency  
8 resources.

9  
10 4. The new EEU structure should incorporate mechanisms that allow for timely  
11 and effective evaluation of EEU performance. The process should allow for a  
12 sensible and thorough evaluation. Evaluation activities should be  
13 commensurate with the scope and scale of EEU activities, but not overly time  
14 consuming or burdensome such that they interfere with the ability of the EEU  
15 to deliver energy efficiency.

16  
17 5. The new EEU structure should incorporate a non-contractual relationship  
18 between the EEU and the Board similar to the one that exists between other  
19 utilities and the Board. Such a relationship would help eliminate the conflicts  
20 that exist as a result of the present relationship between the EEU and the  
21 Board and would enable the EEU to participate fully in regulatory  
22 proceedings involving energy efficiency and integration with utility planning  
23 and responsibilities.

1           6. The new EEU structure should provide a structure that is flexible, can adapt  
2           quickly to changing technology and needs, and able to operate and efficiently  
3           meet customers' needs for energy efficiency services in a variety of settings.  
4           The structure should also be sufficiently flexible to enable work on all fuels  
5           energy efficiency or other efficiency services if they develop in the future.

6  
7           7. The new EEU structure should support an efficient service delivery system. It  
8           should not duplicate existing efforts. To the fullest extent possible, it should  
9           provide for "one-stop shopping" to best meet customers' needs and ensure  
10          efficient delivery of services.

11  
12          8. The new EEU structure should build on existing and new experience with  
13          efficiency resources. It should avoid reinventing the wheel and should use the  
14          experience and expertise that Vermont has acquired in delivering energy  
15          efficiency over the past two decades.

16  
17      **Q10. WOULD AN EEU STRUCTURE THAT USES AN ORDER OF**  
18      **APPOINTMENT ADDRESS THE SET OF ISSUES RELATED TO THE**  
19      **RELATIONSHIP BETWEEN THE EEU AND THE BOARD?**

20      A10. Yes. An Order of Appointment would resolve the problematic nature of the  
21      relationship between the EEU and the Board. Under an Order of Appointment, as  
22      I understand it, the EEU would not be acting as an agent of the Board and the  
23      Board could more easily exercise independent oversight as it does with other

1 utilities. Also, as I understand it, under an Order of Appointment, the EEU would  
2 be able to act and speak independently and without concerns about implying  
3 Board approval in the various processes discussed earlier in my testimony.  
4

5 **Q11. WOULD AN EEU STRUCTURE THAT USES AN ORDER OF**  
6 **APPOINTMENT ADDRESS THE SET OF ISSUES RELATED TO THE**  
7 **CHALLENGES OF THE THREE-YEAR CONTRACT CYCLE?**

8 A11. It could. It would depend on the length and structure of the Order of  
9 Appointment. For example, an Order of Appointment that has a renewal process  
10 every three years offers little practical benefit compared to the current structure.  
11 An Order of Appointment approach with a short lifetime simply continues the  
12 existing timing problems such as the “end effects” that occur at the end of any  
13 contract period, and the disincentive for the EEU to engage in long-term  
14 forecasting or customer relationships towards the end of the contract. Such a  
15 structure fails to allow the EEU to maximize its acquisition of cost-effective  
16 energy efficiency resources.  
17

18 **Q12. WHAT TYPE OF ORDER OF APPOINTMENT WOULD BEST ADDRESS**  
19 **THE PROBLEMS CREATED BY THE THREE-YEAR CONTRACT**  
20 **CYCLE?**

21 A12. The Order of Appointment should be performance-based and provide for an  
22 indefinite term. At this point in time there is no reason to treat the EEU  
23 differently than its electric utility peers as far as the duration of its appointment.

1 The EEU has demonstrated by its past successful performance and its contract  
2 renewals that it is capable of operating for an indefinite term. Its term was limited  
3 in time at the outset because it was a novel structure for delivery of energy  
4 efficiency services. At the outset, it was an experiment. The experiment is over  
5 and has proven to be a success. The term limit is an obsolete compromise and  
6 should be removed now.

7 I recommend that the Board determine the preferred structure for the EEU  
8 as an outcome of this proceeding, and that the Board find that an indefinite term is  
9 the preferred structure. To the extent this is not allowed by the current statutory  
10 authorization, I recommend, in the alternative, that the Board (1) issue an Order of  
11 Appointment for the maximum term allowed by Vermont law, (2) find that any  
12 specific term limit for its Order of Appointment was a second-best outcome,  
13 which I understand to be twelve years, and (3) direct the utility Parties and the  
14 DPS, along with any other Parties who wish to participate, to work together to  
15 recommend the revisions to the Vermont statutes needed to make that change to  
16 an indefinite term. I would also encourage the Board to participate fully in that  
17 process and to advocate for such legislation.

18 Other elements of the Order of Appointment should be similar to a  
19 franchise or award of a certificate of public good (CPG) that is provided for other  
20 utilities in Vermont. 30 V.S.A. §§ 203 and 209. By building on the existing  
21 structure for utility regulation, this avoids reinventing the wheel and incorporates  
22 the oversight that is in place for utilities operating in Vermont, as required by 30  
23 V.S.A. §§ 209(e)(3) and (9).

1           An express element of any Order of Appointment as recommended in this  
2 testimony should be a performance-based structure such as that allowed by  
3 “alternative regulation” for other utilities. 30 V.S.A. § 218d. This would allow  
4 compensation and evaluation based on performance and provide a structure that  
5 ensures good performance and meeting clearly identified goals.

6           This structure could also provide opportunities for competitive entities to  
7 demonstrate a superior ability to deliver the services and resources desired. The  
8 appointment and performance standards can be structured to provide market  
9 assessments and bidding requirements as well as size, scope or geographic  
10 parameters that could incorporate existing or new practices.

11

12 **Q13. IF THE BOARD’S AUTHORITY IS RESTRICTED TO A LIMITED, 12-**  
13 **YEAR TERM, WHAT REVIEW PROCESS SHOULD THE BOARD**  
14 **UNDERTAKE AT THE END OF THE 12-YEAR PERIOD OF**  
15 **APPOINTMENT?**

16 A13. The Board should base its process at the end of the 12-year appointment upon the  
17 results of an overall review of the performance of the EEU contractor. The Board  
18 should retain the ultimate authority to decide if reappointment of the incumbent  
19 contractor, a solicitation of interest, a Request for Qualifications, or a full-fledged  
20 Request for Proposals bidding process is appropriate. In making this  
21 determination, the Board should take into account not only the overall  
22 performance of the incumbent contractor, but the costs and benefits of any  
23 alternative.

1

2 **Q14. WOULD SUCH A STRUCTURE PROVIDE FOR ADEQUATE LEVELS**  
3 **OF OVERSIGHT AND ACCOUNTABILITY FOR THE EEU?**

4 A14. Yes. This structure would allow for the continuation of the performance-based  
5 method of evaluation which has proved successful in encouraging excellent  
6 performance of the EEU to date. It could also include regular cycles of assessment  
7 and the ability of any party to petition with cause for the appointment to be  
8 terminated.

9

10 **Q15. IF THE EEU STRUCTURE WAS CHANGED TO AN ORDER OF**  
11 **APPOINTMENT, SHOULD THE INCUMBENT EEU CONTRACTORS BE**  
12 **AWARDED THE INITIAL ORDERS OF APPOINTMENT?**

13 A15. Yes. In the Burlington area, Burlington Electric Department has performed well  
14 in carrying out its EEU responsibilities. For the rest of Vermont, VEIC has  
15 operated Efficiency Vermont with a high level of achievement and effectiveness  
16 since 1999. They have been recognized as a national model for effective delivery  
17 of energy efficiency services. To the best of my knowledge, they have never  
18 missed a contractual requirement, and have met or exceeded nearly all of their  
19 Performance Indicators. As mentioned above, this action would also be consistent  
20 with the direction given to the Board by 30 V.S.A. §§ 209(e)(3) and (9).

21

22 **Q16. HOW DOES THE PERFORMANCE OF EFFICIENCY VERMONT**  
23 **COMPARE WITH ITS PEERS IN OTHER STATES?**

1

2 A16. Efficiency Vermont, as operated by VEIC, is widely regarded as one of the  
3 leading energy efficiency programs in the country. In October, 2008, the  
4 American Council for an Energy-Efficient Economy (ACEEE) published its  
5 annual scorecard ranking energy efficiency programs throughout the nation.<sup>1</sup> In  
6 the category of “Utility and Public Benefits Efficiency Programs and Policies,”  
7 Vermont’s program (Efficiency Vermont) scored 19 out of a possible 20 points.  
8 No other state scored higher than 14.5 points in this category. ACEEE also  
9 recently published a ranking of top energy efficiency programs as judged by a  
10 panel of nine experts.<sup>2</sup> All nine placed Efficiency Vermont in the Top 10. From  
11 a quantitative point of view, based on the metric of Energy Efficiency Annual  
12 Savings as a Percent of Total Sales, Vermont could reasonably claim to have the  
13 most aggressive energy efficiency program in the country. Table 2 of this ACEEE  
14 report is attached to my testimony as Exhibit CLF-WS-1 Spending and Savings  
15 Data for Leading Energy Efficiency States.

16 **Q17. DO YOU HAVE OTHER EVIDENCE THAT VERMONT HAS ONE OF**  
17 **THE LEADING ENERGY EFFICIENCY PROGRAMS IN THE NATION?**

18 A17. Yes. In 2008, Synapse Energy Economics published a paper entitled *The*  
19 *Sustainability and Costs of Increasing Efficiency Impacts: Evidence from*

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<sup>1</sup> ACEEE, *The 2008 State Energy Efficiency Scorecard*: Executive Summary, page 2, available at [http://aceee.org/pubs/e086\\_es.pdf](http://aceee.org/pubs/e086_es.pdf).

<sup>2</sup> Martin Kushler, Dan York and Patti White, *Meeting Aggressive New State Goals for Energy Efficiency: Examining Key Factors Associated With High Savings*. ACEEE Report Number U091, March, 2009, available at <http://www.aceee.org/pubs/u091.htm>.

1        *Experience to Date*.<sup>3</sup> The paper, in part, compared the energy efficiency  
2        performance of leading utilities and program administrators. A chart from that  
3        report comparing savings and cost of savings is attached to my testimony as  
4        Exhibit CLF-WS-2 Comparison of Leading Utilities and Administrators. The  
5        rightmost solid triangle in the lower right corner of the graph shows Efficiency  
6        Vermont's performance in 2006. Other solid triangles to the left of that one  
7        represent Efficiency Vermont's performance from 2000 to 2005. This graph  
8        shows that Efficiency Vermont achieved a level of savings exceeding the  
9        performance of all but two utilities in the sample and at a lower unit cost than  
10       most.

11

12    **Q18. DOES THAT CONCLUDE YOUR TESTIMONY?**

13    A18. Yes.

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<sup>3</sup> Kenji Takahashi and David Nichols, *The Sustainability and Costs of Increasing Efficiency Impacts: Evidence from Experience to Date*. Synapse Energy Economics, 2008, available at <http://www.synapse-energy.com/Downloads/SynapsePresentation.2008-08.0.Sustainability-and-Costs-of-Efficiency-Impacts.S0051.pdf>.

**Table 2: Electric Energy Efficiency Program Savings and Spending Data for Leading States**

State	Median rank by expert panel	Number of times selected	Rank with tie-breakers used	Average rate to retail customers 2007 data from EIA Cents/kWh	EE spending: total (includes utility and non-utility public benefit programs)		Total EE spending as % total revenues for all utilities (IOUs and POUs)		EE spending per capita		EE annual savings – statewide total – EIA plus non-utility data (or other data source)		EE annual savings – statewide as % of total state kWh sales	
					\$000s		%		\$/capita		MWh		%	
					2006	2007	2006	2007	2006	2007	2006	2007	2006	2007
California	1	9	1	12.3	\$357,000	\$645,800	1.1%	1.9%	\$9.85	\$17.64	1,912,000	2,275,000	0.7%	0.9%
Massachusetts	3	9	2	14.6	\$125,000	\$120,157	1.5%	1.4%	\$19.43	\$18.49	455,000	489,622	0.8%	0.9%
Connecticut	3	7	3	16.0	\$70,999	\$98,230	1.5%	2.1%	\$20.31	\$28.05	328,000	355,000	1.2%	1.3%
Vermont	4	9	4	12.2	\$15,806	\$23,690	2.4%	3.5%	\$25.46	\$37.78	62,872	105,243	1.1%	1.8%
Wisconsin	6	8	5	8.4	\$77,683	\$80,580	1.4%	1.4%	\$13.94	\$14.32	451,192	467,725	0.6%	0.7%
New York	6	8	6	14.7	\$223,863	\$241,543	1.0%	1.1%	\$11.61	\$12.40	823,837	NA	0.6%	NA
Oregon	7	9	7	7.3	\$63,318	\$69,107	2.0%	2.2%	\$17.15	\$18.54	369,827	437,494	0.8%	0.9%
Minnesota	7	6	8	7.1	\$82,245	\$91,239	1.8%	1.9%	\$15.96	\$17.53	411,999	463,543	0.6%	0.7%
New Jersey	9	7	9	12.4	\$83,177	\$95,914	0.9%	1.0%	\$9.60	\$10.96	227,764	242,270	0.3%	0.3%
Washington	9	6	10	6.6	\$113,288	\$126,678	2.2%	2.4%	\$17.77	\$19.67	630,691	635,062	0.7%	0.7%
Texas	11	5	11	9.7	\$57,800	\$79,500	0.2%	0.2%	\$2.47	\$3.36	397,305	457,808	0.1%	0.1%
Iowa	11	3	12	6.3	\$55,296	\$56,493	1.8%	1.8%	\$18.60	\$18.82	315,255	322,177	0.7%	0.7%
Rhode Island		2	13	13.5	\$17,178	\$17,400	1.6%	1.6%	\$16.18	\$16.23	96,048	64,995	1.2%	0.8%
Nevada		1	14	9.4	\$24,000	\$28,700	0.7%	0.8%	\$9.63	\$11.40	216,000	206,000	0.6%	0.6%
<b>Median</b>					\$74,341	\$85,910	1.5%	1.7%	\$16.07	\$17.58	383,566	437,494	0.7%	0.7%
<b>Mean</b>					\$97,618	\$126,788	1.4%	1.7%	\$14.85	\$17.51	478,414	501,688	0.7%	0.8%

Note: Energy efficiency spending and savings estimates are based on the best available data from applicable state agencies in each state.

# Utility Cost of Saved Energy (2006\$/MWh) vs. Annual Incremental Savings as % of Sales

