

**STATE OF VERMONT  
PUBLIC SERVICE BOARD**

Docket No. 7670

Petition of twenty Vermont utilities and )  
Vermont Public Power Supply Authority )  
requesting authorization pursuant to )  
30 V.S.A. § 248 for the purchase of shares )  
of 218 MW to 225 MW of electricity from )  
H.Q. Energy Services (U.S.) Inc. commencing )  
November 1, 2012 through 2038, issuance of )  
findings that such purchases are entitled to )  
rate recovery assurance, and requesting certain )  
approvals under 30 V.S.A. § 108 )

**PREFILED TESTIMONY OF  
WILLIAM STEINHURST  
ON BEHALF OF  
CONSERVATION LAW FOUNDATION**

**OCTOBER 26, 2010**

*Dr. Steinhurst's testimony presents various concerns regarding the proposed power purchase contract between Hydro Québec US and the Petitioners, and concludes that the Contract has not been shown to be the least cost option, and that approval by the Board would not be in the public interest unless certain conditions are imposed.*

1 Prefiled Testimony  
2 of  
3 William Steinhurst  
4

5 **Q1. Please state your name and occupation.**

6 A1. My name is William Steinhurst, and I am a Senior Consultant with Synapse  
7 Energy Economics (Synapse). My business address is 32 Main Street, #394,  
8 Montpelier, Vermont 05602.

9 **Q2. On whose behalf did you prepare this prefiled testimony?**

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

11 **Q3. Please describe Synapse Energy Economics.**

12 A3. Synapse Energy Economics (“Synapse”) is a research and consulting firm  
13 specializing in energy and environmental issues, including electric generation,  
14 transmission and distribution system reliability, ratemaking and rate design,  
15 electric industry restructuring and market power, electricity market prices,  
16 stranded costs, efficiency, renewable energy, environmental quality, and nuclear  
17 power.

18 **Q4. Please summarize your work experience and educational background.**

19 A4. I have over twenty-nine years of experience in utility regulation and energy  
20 policy, including work on renewable portfolio standards and portfolio  
21 management practices for default service providers and regulated utilities, green  
22 marketing, distributed resource issues, economic impact studies, and rate design.  
23 Prior to joining Synapse, I served as Planning Econometrician and Director for  
24 Regulated Utility Planning at the Vermont Department of Public Service, the  
25 State's Public Advocate and energy policy agency. I have provided consulting  
26 services for various clients, including the Connecticut Office of Consumer  
27 Counsel, the Illinois Citizens Utility Board, the California Division of Ratepayer  
28 Advocates, the D.C. and Maryland Offices of the Public Advocate, the Delaware

1 Public Utilities Commission, the Regulatory Assistance Project, the National  
2 Association of Regulatory Utility Commissioners (“NARUC”), the National  
3 Regulatory Research Institute (“NRRRI”), American Association of Retired  
4 Persons (“AARP”), The Utility Reform Network (“TURN”), the Union of  
5 Concerned Scientists, the Northern Forest Council, the Nova Scotia Utility and  
6 Review Board, the U.S. EPA, the Conservation Law Foundation, the Sierra Club,  
7 the Southern Alliance for Clean Energy, the Oklahoma Sustainability Network,  
8 the Natural Resource Defense Council (“NRDC”), Illinois Energy Office, the  
9 Massachusetts Executive Office of Energy Resources, the James River  
10 Corporation, and the Newfoundland Department of Natural Resources.

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

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

22 I was the lead author or co-author of Vermont’s long-term energy plans for  
23 1983, 1988, and 1991, as well as the 1998 report *Fueling Vermont’s Future:  
24 Comprehensive Energy Plan and Greenhouse Gas Action Plan*, and also  
25 Synapse’s study *Portfolio Management: How to Procure Electricity Resources to  
26 Provide Reliable, Low-Cost, and Efficient Electricity Services to All Retail  
27 Customers*. I was recently commissioned by the National Regulatory Research  
28 Institute to write *Electricity at a Glance*, a primer on the industry for new public  
29 utility commissioners, which included coverage of energy efficiency programs.

1 **Q5. Have you previously testified before the Vermont Public Service Board ("the**  
2 **Board" or "PSB")?**

3 A5. Yes, I have. I most recently testified before the Board in 2009 in Docket No.  
4 7466.

5 **Q6. Are you presenting any exhibits to support your testimony?**

6 A6. Yes. Exhibit CLF-WS-1 is my resume. Exhibit CLF-WS-2 is Discovery  
7 response Petitioners:CLF 1-12. Exhibit CLF-WS-3 is Discovery response  
8 Petitioners:CLF Supplemental 1-3. Exhibit CLF-WS-4 is Discovery response  
9 Petitioners:CLF 1-30b.

10 **Q7. Please summarize your testimony.**

11 A7. I present various concerns regarding the proposed power purchase contract  
12 between Hydro Québec US ("HQUS") and the Petitioners ("the Contract").<sup>1</sup> I  
13 conclude that the Contract has not been shown to be the least cost option, and that  
14 approval by the Board would not be in the public interest unless certain conditions  
15 are imposed.

16 **Q8. How is your testimony organized?**

17 A8. I address, in order,

18 I. problems with the proposed transfer of environmental attributes under the  
19 Contract,

20 II. problems with the definition and reliability of the proposed Environmental  
21 Attributes Product,

22 III. why the Board should not rely on efficiency resources in Québec to supply the  
23 power under the Contract,

24 IV. why the recent RFP for 100 MW of power issued by certain of the Petitioners  
25 cannot be relied on to show that the Contract is a least cost resource,

26 V. why claims that power to be supplied under the Contract should not be  
27 considered renewable or sustainable,

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<sup>1</sup> The Contract is Petitioners' Exh. Joint-3.

1 VI. why sales of the Environmental Attributes Product contemplated by the  
2 Contract is not environmentally sound or consistent with Vermont's  
3 environmental and regulatory goals and standards even if allowed under the  
4 SPEED program, and

5 VII. how the disposition of environmental attributes under the Contract should be  
6 constrained.

7

8 **I. THE CONTRACT'S PROPOSED TRANSFER OF ENVIRONMENTAL**  
9 **ATTRIBUTES IS NOT A REASONABLE BASIS FOR IMPUTING ANY**  
10 **ENVIRONMENTAL BENEFITS TO THE CONTRACT.**

11 **Q9. What does the Contract provide regarding transfer of environmental**  
12 **attributes to the Petitioners?**

13 A9. HQUS is obligated under the Contract to transfer to the Vermont Buyers two  
14 distinct products: (i) energy, and (ii) an equivalent quantity of environmental  
15 attributes corresponding to energy from the HQP system mix, which must be  
16 comprised of at least 90% hydroelectricity.<sup>2</sup>

17 **Q10. Is it reasonable to rely on that transfer of environmental attributes as a**  
18 **reason to approve the Contract?**

19 A10. No, it is not. There are a number of ways in which the proposed transfer of  
20 environmental attributes is not a reasonable basis for imputing any environmental  
21 benefits to the Contract. One example is that it is clear that the attributes to be  
22 delivered will not represent the attributes of HQ's actual incremental generation  
23 to serve the Contract. (The Contract actually states the contrary in Section 1.34.)  
24 Even if such a demonstration could be made, the true environmental effect of  
25 sales under the Contract could result in leakage to other Canadian provinces or  
26 U.S. states. If their accuracy and validity cannot be demonstrated, then the  
27 proposed transfer of attributes could amount to simply stealing credits from other  
28 claimed use, a form of double counting, which is improper in environmental

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<sup>2</sup> Petitioners' Exh. Joint-3, Section 3.3, generally. *See*, also, Joint Prefiled Testimony of William J. Deehan and Christopher Cole on behalf of Petitioners, 8/17/2010, at 14 ff.

1 accounting. For example, one might ask whether HQ, itself, has an RPS  
2 obligation to meet. If so, we have no assurance that these attributes are not double  
3 counted. If not, this sale is simply abetting the Province of Québec in its decision  
4 not to have one, fails to reduce emissions because one party is not carrying its  
5 weight, and pushes the burden of actually meeting greenhouse gas emission  
6 reduction goals onto other parties.

7 **Q11. Why should the Board be concerned about the difference between**  
8 **environmental attributes of the average HQ System Mix and those of the**  
9 **incremental HQ generation to serve the Contract?**

10 A11. The choice between average mix and marginal mix attributes is potentially  
11 highly significant. To the extent the purchase leads to *any* incremental fossil fuel  
12 or other non-renewable (e.g., nuclear) generation in Québec or in New England,  
13 Ontario, New York or elsewhere, reliance on the environmental attributes of the  
14 average HQ System Mix is unsound and misleading. The same is true for any new  
15 construction of generation.

16 **Q12. Does the provision of Section 10.2(e) of the Contract address your concerns**  
17 **about the accuracy and validity of the reporting of environmental attributes**  
18 **under the Contract?**

19 A12. No, it does not. Section 10.2(e) of the Contract provides that the Operating  
20 Committee established to administer the Contract shall “[m]onitor and revise . . .  
21 protocols for confirming the conformance of the Environmental Attributes  
22 Product with the requirements of Section 3.3.” Section 3.3 covers the delivery of  
23 the Environmental Attribute Product. As explained earlier in this testimony, it is  
24 the terms of the Contract, itself, defining the Environmental Attributes Product  
25 that are flawed. Merely authorizing the proposed Operating Committee to monitor  
26 and revise the bookkeeping for a flawed product does not remove the underlying  
27 flaw.

28 **Q13. How should the Board address this concern?**

29 A13. The Board should impose three interrelated conditions on any approval of the  
30 Contract.

1           First, any approval of the Contract by the Board should prohibit any claim by  
2 the Petitioners that the power provided under the Contract is renewable, low  
3 carbon, or otherwise environmentally preferred. The Board should also require  
4 that any resale of the power purchased under the Contract be subject to a  
5 contractual requirement that the purchaser submit to the same requirement and  
6 impose it on any subsequent purchasers.

7           Second, the Board should require the Petitioners to present an analysis of the  
8 Contract on the basis of HQ's incremental system mix. The Board should require  
9 that that analysis be conducted by an independent third party and determine,  
10 based on transparent accounting for the environmental attributes of power  
11 generated on, imported to and exported from the HQ system, that the attribute  
12 products to be transferred to the Vermont Buyers are (1) accurate, (2) based on  
13 the HQ system's incremental hourly environmental attributes rather than that  
14 system's average attributes, and (3) not relied on by HQ or any other party to  
15 meet any requirement, whether "aspirational" or legally binding. If that condition  
16 is not met (or if the Board does not choose to impose it), then the Board in  
17 weighing its decision regarding the Contract should not consider the Contract  
18 power to be renewable or to have any positive environmental attributes.

19           Third, as a condition subsequent for approval of the Contract, the Board  
20 should require ongoing independent third party verification, based on a  
21 transparent hourly accounting for the environmental attributes of power generated  
22 on, imported to and exported from the HQ system to ensure that (1) the attribute  
23 products transferred to the Vermont Buyers are (1) accurate, (2) based on the HQ  
24 system's incremental hourly environmental attributes rather than that system's  
25 average attributes, and (3) not relied on by HQ or any other party to meet any  
26 requirement, whether "aspirational" or legally binding. The Board should also  
27 order that if, at some later date, the above condition subsequent in this answer is  
28 not met, the utilities not count that power towards SPEED goals or towards any  
29 RPS or environmental portfolio standard that might apply to the Vermont Buyers  
30 at that time.

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2 **II. THE CONTRACT’S PROPOSED ENVIRONMENTAL ATTRIBUTES**  
3 **PRODUCT IS POORLY DEFINED AND UNRELIABLE.**

4 **Q14. Is the proposed transfer of environmental attributes under the Contract well**  
5 **defined and reliable?**

6 A14. No, it is not. There are a number of ways in which the proposed transfer of  
7 environmental attributes is poorly defined or unreliable. In addition to the  
8 concerns outlined in the immediately preceding series of questions and answers,  
9 another example is that there is no demonstration that the actual HQ system mix  
10 to be delivered will at all times be at least 90% hydro. In any event, the Contract  
11 does not adequately specify how those attributes will be measured or documented.  
12 For example, the Contract states that

13 1.34 "Environmental Attributes" means all environmental  
14 characteristics, claims, credits, benefits, emissions reductions,  
15 offsets, allowances, allocations, *howsoever characterized,*  
16 *denominated, measured or entitled,* corresponding to Energy from  
17 the HQP System Mix. [*Emph. added*]

18 Section 3.3(d) of the Contract contains even more questionable provisions  
19 regarding the environmental attributes product. For example, in Section 3.3(d)(i),  
20 the Contract explicitly acknowledges “there is no renewable Energy, emissions  
21 reduction or any product reporting rights program, scheme or organization, or  
22 other similar program with respect to which exists a market, registry or reporting  
23 for the Environmental Attributes adopted by a Governmental Authority or the  
24 NEPOOL GIS.” In Section 3.3(d)(ii), the parties to the Contract acknowledge that  
25 “Seller makes no representation as to the content of the sources of generation  
26 constituting the Quebec System Mix.” Perhaps most troubling, Section 3.3(d)(iv)  
27 states “nothing in this Agreement shall be interpreted as restricting the rights of  
28 Seller or any of its Affiliates to sell to any third parties any environmental  
29 attributes relating to Hydro-Quebec Production's generation. The Board should be  
30 concerned that this particular provision actually countenances double counting of  
31 environmental attributes.



1 **Q15. Are the concerns you have just mentioned addressed by the language of the**  
2 **Contract's Section 3.3(e) concerning Representations and Warranties?**

3 A15. No, they are not. Section 3.3(e), as I believe it would be applied in practice in  
4 the electric utility industry, simply asserts that the Seller's transfer of *average* HQ  
5 System Mix attributes will be free and clear. This is of no value in the real world  
6 where it is incremental generation and its attributes that actually affect the  
7 environment, renewable energy markets, and so on.

8 **Q16. How should the Board address this concern?**

9 A16. The Board should impose the same three interrelated conditions described  
10 earlier in this prefiled testimony as part of any approval of the Contract.

11  
12 **III. LONG PROMISED ENERGY EFFICIENCY IN QUÉBEC HAS NOT**  
13 **MATERIALIZED.**

14 **Q17. Does the Petitioners' support for approval of the Contract depend on**  
15 **assumptions about events in Québec? If so, can the Board rely on those**  
16 **assumptions?**

17 A17. The Petitioners' case does rely on assumptions about events in Québec, but at  
18 least some of those assumptions cannot be relied on. For example, the Petitioners  
19 assert that the Contract will not lead to new construction of power plants in  
20 Québec, but their arguments as to why the Contract does not depend on new  
21 generation in Québec are unconvincing.<sup>3</sup> Unfortunately, the Board cannot rely on  
22 that assertion.

23 The fact that the Contract does not *require* HQ to construct new facilities does  
24 not mean anything in this regard. HQ would remain free to do so if it wished. In  
25 response to CLF discovery Q.12, the Petitioners admit there is nothing in the  
26 Contract that precludes the building of new facilities by HQP. Exhibit CLF-WS-2  
27 (Discovery response Petitioners:CLF 1-12).

28 The Petitioners claim that HQP has an energy surplus of about 5% of its need  
29 so that purchases under the Contract are irrelevant to the need for new

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<sup>3</sup> See, for example Deehan and Cole, *op. cit.*, p. 19, line 11, to p. 20, line 2.

1 construction. They further claim that HQP plans to build another 5% of additional  
2 generation and argue that, as a result, the Contract does not make any difference  
3 as to new construction.<sup>4</sup> In addition, they claim that the Contract's smaller size  
4 than the existing HQ/VJO contract eliminates the possibility that the Contract will  
5 make any difference as to new construction. Those arguments are not convincing  
6 even if the claims are correct. Proposed new construction projects are not sunk.  
7 They may be deferred, mothballed or cancelled if not needed. The international  
8 financial community will care whether they continue to be needed, whether HQ  
9 does or not. As for the claimed existing energy surplus of 5%, that is a modest  
10 allowance for unexpected growth, electrification or other purposes.

11 Neither should the Board once again rely on any assumptions about the  
12 prospect for the Contract to be supplied from energy efficiency savings in  
13 Québec. In the proceeding that considered a prior major purchase from Hydro  
14 Québec, PSB Docket No. 5330, the Board relied heavily on such an assertion. For  
15 example, on page 28 ff. of Volume I of the Board's Order in that proceeding, the  
16 Board found that

17 Hydro-Quebec presently has underway two programs that would  
18 allow it as a practical matter to expand its capacity to serve the  
19 Vermont contract even without new dams or reservoirs: the first is  
20 a program of capacity expansions and turbine additions at existing  
21 reservoirs totalling [sic] 3500 MW. The second is a Demand-Side  
22 Management program, announced during the pendency of this  
23 case, which could make available for other uses more than 4000  
24 MW of power freed up by investments in efficiency in Quebec.

25 And finally, evidence in this Docket also revealed that Hydro-  
26 Quebec has available to it extensive efficiency resources that could  
27 be employed to provide improved energy services to Quebec's  
28 customers, as well as exports to Vermont, if Hydro-Quebec were to  
29 increase its investments in end-use energy efficiency, conservation,  
30 and load management. Hydro-Quebec estimates that there is a  
31 conservation and efficiency savings potential in Quebec of 23 Twh

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<sup>4</sup> Petitioners state that the energy surplus is 10 TWh and the new construction plan is for another 10 TWh on a current need of 190 TWh. *Loc. cit.* 10 TWh is just over 5% of 190 TWh.

1 in the year 1999, which is about ten times the maximum annual  
2 sales from Hydro-Quebec to Vermont (2.234 Twh) under the 340  
3 MW minimum purchase approved in this Order. It forecasts that  
4 actual energy savings in 1999 will be 9.0 Twh resulting from  
5 utility-sponsored energy efficiency programs, and 3.9 Twh  
6 resulting from naturally-occurring conservation and efficiency  
7 activities; these efficiency and load management improvements are  
8 expected to reduce peak demand by 4,270 MW in 1999, an amount  
9 more than twelve times larger than the Vermont purchase.

10 On the basis of the evidence we have heard concerning the  
11 potential for energy efficiency improvements in Vermont, as well  
12 as in Quebec, we are convinced that there exists a significant,  
13 untapped "reservoir" of efficiency resources in Quebec, and that  
14 much of it could be exploited at total costs that are lower than the  
15 costs of building and operating additional generating stations.  
16 Considering the magnitude of the conservation resource in Quebec  
17 and the differentials in marginal costs between Quebec and  
18 Vermont, we believe that Hydro-Quebec has an opportunity to  
19 export "efficiency power" to Vermont -- that is, to sell electricity to  
20 Vermont that is made available, not by the construction of new  
21 generating stations, but by investments in efficiency, conservation,  
22 and load management programs in Quebec. . . . We note that  
23 Hydro-Quebec's responsible official testified in this proceeding  
24 that Hydro-Quebec would be willing to negotiate with Vermont  
25 utilities for the export of efficiency power to Vermont, and we will  
26 direct the Vermont Joint Owners to explore this option with  
27 Hydro-Quebec if they seek to exercise their options to purchase  
28 additional power under the Contract.

29 Thus, that prior approval depended, in part, on the presumption that Québec  
30 was about to undertake energy efficiency on a heroic scale.

31 The point is that the Board highlighted these issues in 1990, and, as far as I am  
32 aware, they have not been addressed. In fact, it appears that the status of either  
33 expanding efficiency in Quebec or expanding the capacity of the existing plants  
34 remain about where they were some twenty years ago. As recently as 2003, HQ  
35 Distribution's energy efficiency plan was still quite modest compared to the

1 leading jurisdictions in the U.S. and Canada.<sup>5</sup> In 2005, a best practice review of  
2 HQ’s proposed energy efficiency plan for 2005-2010 found “a fair number of  
3 design weaknesses” and concluded that “[c]orrecting these weaknesses will  
4 require both fundamental strategy changes and smaller “tweaks” to existing  
5 strategies.” That study “reviewed Hydro-Québec’s proposed programs and  
6 program changes in light of the market barriers they – and their customers, and  
7 other market actors – face.” We have done so based on best practices in North  
8 American energy efficiency programs. Hydro-Québec’s strategies have improved  
9 and, over time, are moving closer to addressing market barriers, but are still  
10 lacking in many respects. For example, in some instances Hydro-Québec  
11 explicitly addresses market barriers within its testimony. In others, it either  
12 ignores them or seems to view them simplistically.” At that time, the study found  
13 that for one of its programs HQ’s offered customer incentive level was only about  
14 one-third the level of Efficiency Vermont’s for the same program and likely to be  
15 “largely ineffective.” Finally, the benchmarking portion of that study found that  
16 “when measured against kWh sales, Hydro-Québec’s current effort ranks 11th out  
17 of the 16 test regions (including itself). This represents a concrete improvement  
18 from its previous plan, which ranked 16th of 16.”<sup>6</sup>

19 Clearly, if HQ’s energy efficiency effort has ever reached parity with  
20 Vermont’s or other best practice jurisdictions, that can only have happened very  
21 recently, and the Board’s hopes that HQ’s electric energy sales to Vermont could  
22 come from energy efficiency savings rather than new generation construction

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<sup>5</sup> Joint Testimony of Timothy Woolf and Philip Raphals on Behalf of Regroupement national des Conseils régionaux de l’environnement du Québec on the Topic of Hydro-Québec’s Energy Efficiency Plan: 2003-2006, February 5, 2003, at 39 ff. Available at [http://www.regie-energie.qc.ca/audiences/3473-01/PreuveINTERV3473/Preuve\\_RNCREQ\\_Expert\\_5fev03.pdf](http://www.regie-energie.qc.ca/audiences/3473-01/PreuveINTERV3473/Preuve_RNCREQ_Expert_5fev03.pdf).

<sup>6</sup> Philippe U. Dunsky, Eric Belliveau and John Plunkett, *Getting Results: Review of Hydro-Québec’s Proposed 2005-2010 Energy Efficiency Plan*, written testimony on behalf of Fédération canadienne de l’entreprise indépendante (FCEI), Association des industries de produits verriers et de fenestration du Québec (AIPVFQ), Regroupement des organismes environnementaux en énergie (ROEE), Regroupement national des Conseils régionaux en environnement du Québec (RNCREQ), Union des consommateurs (UC) and Union des municipalités du Québec (UMQ), filed in Régie docket R-3552-2004, February 16, 2005, at 11-12, 20, 131-132, 142. Available at [http://www.regie-energie.qc.ca/audiences/3552-04/Preuve3552/FCEI-AIPVFQ-ROEE-RNCREQ-UC-UMQ\\_3552\\_Preveu\\_21fev05.pdf](http://www.regie-energie.qc.ca/audiences/3552-04/Preuve3552/FCEI-AIPVFQ-ROEE-RNCREQ-UC-UMQ_3552_Preveu_21fev05.pdf)

1 were not fulfilled between 1990 and 2005, if ever. For example, the Board's 5330  
2 Order states "Hydro-Quebec forecasts total actual energy savings resulting from  
3 utility-sponsored energy efficiency programs in the year 1999 to be 9.0TWh."<sup>7</sup>  
4 However, even in 2005, HQ's own forecasts called for less than 3 TWh of savings  
5 in 2010, while the Contract's annual energy delivery would be about one and one-  
6 quarter TWh per year.<sup>8</sup>

7 The Vermont Joint Owners relied heavily on efficiency in Québec to show in  
8 1990 that there would be no need for new dams or increased fossil fuel generation  
9 to supply that purchase. This did not come to pass. It is true that the Contract is  
10 for less power than the existing purchase. However, since it does not preclude  
11 getting the power from new dams, and since HQ has not moved forward with the  
12 anticipated efficiency, the Board (and Petitioners) cannot assume (as Petitioners  
13 claim) that no new dams will be used to provide the power. The Petition fails to  
14 address this impact at all. In response to CLF's discovery, Petitioners specifically  
15 state: "Petitioners do not have any documents regarding the environmental  
16 impacts in Vermont of the proposed power supply." Exhibit CLF-WS-3  
17 (Discovery response Petitioners:CLF Supplemental 1-3).

18  
19 **IV. THE UTILITIES' RECENT 100 MW RFP IS NOT A PROPER BASIS FOR**  
20 **CLAIMING THE CONTRACT IS LEAST COST.**

21 **Q18. Do the Petitioners rely on a recent RFP as a basis for claiming the Contract**  
22 **is least cost?**

23 A18. Yes. They rely on the November, 2008, RFP issued on behalf of CVPS, GMP  
24 and VEC.<sup>9</sup>

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<sup>7</sup> Vt. PSB Order in Docket No. 5330, vol. II, p. 173, Finding #222.

<sup>8</sup> The capacity and capacity factor are 218 MW and 0.667, respectively. Deehan and Cole, *op. cit.* at 13 and 16. An estimate of the resulting annual energy of 218 MW x 0.667 x 8760 hours/yr. / 1,000,000 = 1.27 TWh/yr.

<sup>9</sup> Deehan and Cole, *op. cit.*, at 21 ff. The RFP is available online at <http://www.cvps.com/programsServices/powerfp.aspx>. The product description is on pages 6-8.

1 **Q19. On pages 21 to 22 of their August 17, 2010 testimony, Petitioners' witnesses**  
2 **Deehan and Cole describe the pricing of the Contract as favorable compared**  
3 **to other options stating: "In fact, in the competitive RFP process conducted**  
4 **last year by three of the Buyers, we encountered many renewable-based**  
5 **offers, but none performed close to this PPA's combination of price, non-**  
6 **intermittent schedule, volume, credit quality, reliability and term." Do you**  
7 **agree that the RFP responses are a fair gauge of contract favorability?**

8 A19. No. Although I have not looked at the confidential materials regarding  
9 pricing, by its terms, the RFP referred to is not a good gauge. First, the price  
10 comparison to renewable-based offers is not appropriate. When the RFP was  
11 issued and responses received, Hydro Quebec power was not classified as  
12 renewable power in Vermont. It continues not to be classified as renewable in  
13 any other jurisdictions. For price comparisons, it cannot be compared with  
14 renewable power.

15 **Q20. Were energy efficiency resources eligible to bid in that RFP?**

16 A20. The RFP does not specifically exclude energy efficiency, but it is clear from  
17 the language of the RFP that energy efficiency resources were neither  
18 contemplated nor eligible. In particular, aside from numerous references to  
19 "delivery points" and "generation," the RFP describes its purpose as seeking  
20 "physical electricity supplies" [*emph. added*]:

21 2.1.3 The VT Utilities seek to ensure stable, reliable and  
22 competitively-priced *physical electricity supplies* for their  
23 customers through this RFP. This goal may be accomplished  
24 *through system purchases, unit-contingent entitlement purchases*  
25 *or such combination of resources* that are capable of meeting the  
26 requirements of this RFP.

27 The RFP further describes the products sought as:

28 2.2 Product Description

29 The VT Utilities seek to acquire a minimum of 20 MW up to a  
30 maximum of 100 MW of energy, capacity or both from *new*  
31 *generation, existing generation, system resources, imports from*  
32 *outside Control Areas or any combination thereof*. Resource  
33 diversity is more desirable for non-system supply to limit the  
34 impacts of any single resource outage or service interruption.

1                   2.2.1 Product Categories

2                   Category A: Energy; *Firm system or Unit-Contingent*;  
3                   Dispatchable or Non-Dispatchable; with or without Capacity; with  
4                   or without Renewable Energy Certificates (“RECs”); with or  
5                   without Ancillary services.

6                   Category B: Energy; with or without Capacity; with or without  
7                   RECs; from resources that qualify as SPEED resources as defined  
8                   by Vermont Statutes 30 V.S.A. § 8005 and § 80012. [sic]

9                   There seems to be no possible doubt that neither Product Category included  
10                  energy efficiency resources. At the very least, it appears that efficiency resources  
11                  would have had a difficult time meeting the RFP’s requirements. Certainly the  
12                  RFP did not anticipate efficiency resource bids.

13   **Q21. How is this relevant to the current proceeding?**

14   A21.        Energy efficiency continues to be the lowest cost and cleanest power resource.  
15                  Recent reports for Vermont show the cost for 2009 to be 3.7 cents per kWh. In its  
16                  energy efficiency budget orders, the Board has recognized that considerably more  
17                  energy efficiency is cost effective, i.e., costs less than available supply resources.  
18                  The exclusion of a low cost resource (energy efficiency) from the RFP eligibility  
19                  automatically means that the pricing resulting from the RFP is high compared to  
20                  available resource costs. Since the RFP excluded efficiency—still the lowest cost  
21                  and cleanest power resource—the bids received from that RFP cannot possibly be  
22                  a fair representation of the least cost alternatives to the Contract.

23

24   **V. CLAIMS THAT THE PROPOSED CONTRACT IS DESIGNATED AS**  
25   **RENEWABLE UNDER VERMONT LAW ARE INCORRECT.**

26   **Q22. What claims do the Petitioners make regarding Vermont designation of the**  
27   **Contract as renewable energy?**

1 A22. The Petition states that “[h]ydroelectricity from HQP is designated as  
2 renewable under Vermont law. 2009 Vt. Acts No. 159, § 13.”<sup>10</sup>

3 **Q23. What concern, if any, do you have about that claim?**

4 A23. The Board should recognize that the statement in the petition is incorrect. Act  
5 159 merely removed the pre-existing 200 MW limit on unit size for hydroelectric  
6 power to be deemed renewable under Vermont law. The Petitioners have not  
7 shown that any specific portion of the energy to be provided under the Contract is  
8 renewable as defined in Vermont law, only that it *might* be. For example, in  
9 testimony the Petitioners merely assert that the environmental attributes to be  
10 conveyed under the Contract are at least 90% renewable.<sup>11</sup> Given the concerns  
11 discussed above regarding the incremental mix vs. the average mix in Québec and  
12 the overall shortcomings of the proposed Environmental Attributes Product, this  
13 assertion does not demonstrate compliance with either SPEED or any potential  
14 Vermont RPS. Nor does it support any general claims regarding the  
15 environmentally benign nature of the Contract or its ability to enable compliance  
16 with potential environmental requirements that might apply to the Vermont  
17 utilities in the future.

18 Also, the language of the relevant subsection of 30 V.S.A. 89, says, “The only  
19 portion of electricity produced by a system of generating resources that shall be  
20 considered renewable is that portion generated by a technology that qualifies as  
21 renewable under this subdivision (2).” But the filing relies entirely on the delivery  
22 of the Environmental Attributes Product and sweeping generalities about HQ’s  
23 system. It does not provide any way to ensure that any of the power received is, in  
24 fact, from such a portion of the system. Based on my knowledge of how such  
25 tracking systems are implemented under statutes like this one, I do not believe the  
26 statute explicitly authorizes imputing the sending system’s average attributes to

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<sup>10</sup> Petition at paragraph 17.

<sup>11</sup> Deehan and Cole, *op. cit.* at 10, lines 9 ff.



1 the imported system power. The Board should not allow such an imputation, as  
2 doing so would be illogical and contrary to Vermont's environmental goals.

3 **Q24. How should the Board address this concern?**

4 A24. Once again, for this additional reason, the Board should impose the same three  
5 interrelated conditions described earlier in this prefiled testimony as part of any  
6 approval of the Contract.

7

8 **VI. SPEED MAY AUTHORIZE SALE OF THE ENVIRONMENTAL**  
9 **ATTRIBUTES PRODUCT, BUT THAT DOES NOT MAKE SUCH**  
10 **ACTIONS ENVIRONMENTALLY SOUND OR CONSISTENT WITH**  
11 **VERMONT'S ENVIRONMENTAL AND REGULATORY GOALS AND**  
12 **STANDARDS.**

13 **Q25. Does Vermont law permit utilities to sell environmental attributes and use**  
14 **the financial proceeds, rather than retire those attributes?**

15 A25. Yes, the provisions of the SPEED statute, 30 V.S.A. chap. 89, do so.

16 **Q26. Why, then, should the Board be concerned regarding the possible sale of**  
17 **environmental attributes purchased under the Contract?**

18 A26. The language defining sustainable energy resources in the SPEED statute is  
19 fundamentally flawed and undercuts the very environmental goals it was created  
20 to further. Specifically, the SPEED statute's definition of sustainable only  
21 captures half of what is needed for a resource to be sustainable.<sup>12</sup> Merely being  
22 renewable does not make an energy source sustainable. In addition to being  
23 renewable, a sustainable energy source must help meet today's needs without  
24 impairing the ability of future generations to do so, as well. Without a binding  
25 RPS that requires retirement of renewable energy attributes relied on to meet it,  
26 Vermont is not bearing its share of the burden of advancing renewable energy and

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<sup>12</sup> E.g., sustainable development "meets the needs of the present without compromising the ability of future generations to meet their own needs." World Commission on Environment and Development (Brundtland Commission), 1987; "Sustainable development: Development that can be supported by the environment into the future by ensuring that resources are not depleted or permanently damaged." *Glossary for the Body of Knowledge on the Regulation of Utility Infrastructure and Services*, developed for The World Bank by Sanford V. Berg, 2004.)

1 is not only free-loading on those jurisdiction that do, but seeks to benefit  
2 financially from its lack of responsibility in meeting its share of that burden.

3 From a public policy standpoint, allowing such sales of environmental  
4 attributes gives the Petitioners a financial stake in undermining the purpose and  
5 effectiveness of RPS requirements of other jurisdictions (and of Vermont, should  
6 one be required in the future). Among the purposes for RPS requirements is the  
7 development of providers of and markets for local renewable generation and  
8 energy efficiency, not just to meet climate change goals in the short run, but to  
9 increase the ability to and reduce the cost of doing so in the long run. Supplanting  
10 the development of local New England markets for those resources would  
11 undermine the region's ability to meet those goals and provide Vermont a  
12 financial stake in undermining the region's meeting GHG goals. We not only  
13 don't meet our own obligation, we benefit from wrecking others efforts.

14 **Q27. If the Vermont Buyers were to take delivery of Environmental Attribute**  
15 **Products under the Contract and then sold those attributes, what would be**  
16 **the effect on the carbon emissions from Vermont's electric energy supply?**

17 A27. If Petitioners sell such environmental attributes, the result would be an  
18 increase the carbon emissions associated with Vermont's electricity supply  
19 compared to retiring the attributes.

20 Despite acknowledging this is true, the Petitioners appear to be trying to have  
21 it both ways. In Messrs. Deehan and Cole testimony at page 27, lines 10-12, they  
22 state: "HQP energy will help Vermont maintain one of the most environmentally  
23 benign (from the standpoint of carbon emissions) portfolios in the Northeast." In  
24 response to CLF's discovery, Petitioners "admit that the sale of environmental  
25 attributes by the Petitioners, as allowed by the PPA, makes this claim untrue."  
26 Exhibit CLF-WS-4 (Discovery response Petitioners:CLF 1-30b).

27 **Q28. Would providing power under the Contract impair the ability of future**  
28 **generations to meet their energy needs sustainably?**

29 A28. It could. Significant questions regarding sustainability can arise in the  
30 construction of new hydroelectric projects, such as those that "are expected to add

1 another 10 TWh of hydroelectric supply by 2014,” as cited by the Petitioners in  
2 support of the Contract.<sup>13</sup> Earlier in this prefiled testimony, I discuss why we  
3 should not necessarily assume the Contract would be irrelevant to new  
4 construction in Québec. Nothing in the filing supports a conclusion that such new  
5 construction would be both renewable *and* sustainable. Certainly, nothing in the  
6 filing even attempts to show that such new construction would be socially and  
7 environmentally benign or that any negative effects would still leave the resource  
8 a sustainable one or, even, would be outweighed by positive effects.

9 **Q29. What do you recommend, given language of the SPEED statute?**

10 A29. Of course, the erroneously incomplete language in the SPEED definition is the  
11 law, but the Board should understand and take into account that omission. To the  
12 extent that the Board has discretion to do so, it should not treat the purchase as  
13 sustainable unless and until Petitioners provide sufficient evidence to prove that  
14 both parts of the proper definition of sustainable are met.

15 The Board should be clear in its Orders as to whether the proper definition has  
16 or has not been met regardless of whether it determines that the statutory  
17 definition of the SPEED law is met. This is important to prevent other  
18 jurisdictions and future Vermont interests from being misled. If the Board must  
19 find that the purchase complies with SPEED requirements or an RPS (should one  
20 be required), it should still be careful about this distinction, as a later Vermont  
21 legislature may well correct the error in the statute.

22 Apart from issues relating to SPEED or RPS (should one be required), there  
23 are other, separate environmental requirements in 30 V.S.A Sec. 248. Certainly in  
24 Docket No. 5330, the Board evaluated the environmental impacts and emissions  
25 impacts of the purchase proposed at that time, and there was no SPEED program  
26 then. Also in Docket No. 5270 and succeeding electric energy efficiency dockets,  
27 the Board addressed the whole idea of externalities that are to be incorporated into

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<sup>13</sup> Deehan and Cole, *op. cit.*, at 19, lines 17–18.

1 power decisions. That is part of the public good under 248, and applies regardless  
2 of what SPEED requires. So, to the extent that it considers any requirements  
3 regarding environmental effects or renewable energy, aside from SPEED, the  
4 filing does not support a conclusion that the Contract is either renewable or  
5 sustainable.

6  
7 **VII. DISPOSITION OF ENVIRONMENTAL ATTRIBUTE PRODUCTS**  
8 **ACQUIRED UNDER THE CONTRACT SHOULD BE CONSTRAINED.**

9 **Q30. Should the Board order any additional constraints on the use of**  
10 **environmental attribute products conveyed to the Vermont Buyers?**

11 A30. Yes. The Contract provides for delivery of environmental attributes to utilities  
12 for their power purchases or, in some cases, one-half the power flowing through  
13 the converter. Those attributes are delivered to the utilities, who, in turn, are  
14 subject to Vermont law (SPEED) that allows them to sell the attributes and then  
15 either to pass on the sales revenue to ratepayers (reducing the price of power  
16 below its real cost and inducing inefficient consumption) or to divert those  
17 revenues to various other purposes (currently a list of environmental and energy  
18 efficiency projects—including installation of natural gas auto filling stations).  
19 Those purposes, however benign, do not prevent the purchasers of those attributes  
20 from using them to double count the attributes.

21 The Board should require the Vermont Buyers to retire any attributes acquired  
22 under the Contract or, alternatively, to sell them only on the condition that the  
23 utilities not count that power (and the relevant attributes) towards SPEED goals or  
24 a Vermont RPS (should one become a requirement).

25 **Q31. Does that conclude your testimony at this time?**

26 A31. Yes.