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VIA ELECTRONIC & U.S. MAIL

December 16, 2009

Mrs. Susan Hudson, Clerk  
VERMONT PUBLIC SERVICE BOARD  
112 State Street, Drawer 20  
Montpelier, VT 05620-2701

Re: Docket 7533 – SPEED Price Determination

Dear Mrs. Hudson:

I have enclosed an original and six copies of Green Mountain Power Corporation's Brief in the above-referenced docket. Electronic copies of this filing are being sent to the parties on the electronic service list.

If you have any questions, please call.

Very truly yours,

SHEEHEY FURLONG & BEHM P.C.



Benjamin Marks

Enclosure

cc: Mary Morris (via electronic mail)  
Donald J. Rendall, Jr. (via electronic mail)  
Service List – Docket 7533 (via electronic mail)

STATE OF VERMONT  
PUBLIC SERVICE BOARD

Investigation into Implementation of Standard )  
Offer Prices for Sustainably Priced Energy ) Docket No. 7533  
Enterprise Development (“SPEED”) Resources )  
)

**BRIEF OF GREEN MOUNTAIN POWER CORPORATION**

**INTRODUCTION**

This Brief is submitted by Green Mountain Power Corporation (“GMP”) in support of the positions advanced in its testimony in this docket. Based on its testimony regarding standard-offer prices for landfill gas generation (“LFG”) and photovoltaic (“PV” or solar) projects, GMP recommends the following policy goal: that the Vermont Public Service Board (“Board”) ensure that the price set for renewables provides sufficient incentive for the rapid development and commissioning of plants but not exceed the minimum necessary to provide such an incentive. Based on the studies underlying GMP’s testimony in this docket, GMP argues that (1) a standard offer of \$0.30 per kWh for solar power is higher than necessary and (2) there should be lower prices and more granularity to the standard offer for power from LFG projects.

**PROCEDURAL HISTORY**

This docket was opened by the Board by its June 29, 2009 Order to address the requirement in the Vermont Energy Act of 2009 (“Act”), codified at 30 V.S.A. § 8005(b)(2), that the Board open and complete, a noncontested case docket to determine whether the prices established by the Act constitute a reasonable approximation of the price that would be paid applying the Act’s criteria and to set the price to be paid for electricity to a plant owner under a standard offer from the SPEED Facilitator. After a series of workshops, technical hearings were held on December 2-4, 2009.

## ARGUMENT

### I. BOARD SHOULD PROVIDE THE PROPER INCENTIVE FOR RAPID DEVELOPMENT OF RENEWABLE RESOURCES

#### A. GMP's Analysis Indicates That The Proper Price for Solar Energy Is No More than \$0.26 per kWh.

GMP witness Jason Gifford analyzed 31,000 solar photovoltaic projects awarded in California between 2006 and 2009, as well as data from more than 1,000 PV projects awarded in Massachusetts during the same period. Gifford Pf. at 4. Gifford also analyzed the trends in installation costs for photovoltaic projects in Massachusetts and California over the same period, taking available rebates into account. Gifford Pf. at 5-6. The cost trend per installed kW of solar generation is downward. Gifford Pf. at 8. The SPEED Administrator received applications from 185 solar projects requesting Standard Offer contracts at the interim rate of \$0.30/kWh. Even without a more sophisticated analysis, it is GMP's argument that the application of over 161 MW for 12.5 MW of available contracts strongly suggests that at \$0.30/kWh the SPEED offer was overpriced and that a lower standard offer price could have met SPEED program goals. Gifford Pf. at 9-10. In addition, data from California and Massachusetts show that projects with a capacity of more than 300 kW were the most cost effective and that an offer of \$0.30 per kWh caused an oversubscription in the SPEED queue. Gifford Pf. at 6-7.

The Board should respond to the current solar market cost trend by setting the Standard Offer rate for qualifying solar projects at a level that encourages the development of the most cost effective solar projects available in Vermont, enabling as much of the SPEED goal as possible to be met at the least possible cost to Vermont ratepayers. GMP argues that the maximum price for energy from this type of project should be no more than \$0.26 per kWh. Castonguay Pf. at 2. This proposed maximum price per kWh takes into account the cost trends per installed kW identified in Mr. Gifford's testimony. Castonguay Pf. at 3. These cost declines were evident and demonstrable in the six months that led up to submission of GMP's testimony on the subject. Castonguay Pf. at 4.

Although the SPEED queue is currently full to supply the 12.5 kW of PV-generated electricity allotted to this resource at \$0.30 per kWh, based on its historical experience with project developers, GMP believes it inevitable that there will be some attrition from the current

crop of PV lottery winners. Castonguay Pf. at 5. GMP proposes that replacement projects from the “waiting list” and any new solar projects selected to fill the remainder of the post-January 15, 2010 SPEED goal be offered no more than \$0.26 per kWh on a nominal levelized basis.

Castonguay Pf. at 5. Transcript (Tr) 12/2/09 at 97 (Castonguay). GMP’s analysis shows that such a replacement price would be more than adequate to refill the solar queue. Castonguay Pf. at 5.

For these reasons, the Board should set the SPEED price for solar resources at no more than \$0.26 per kWh.

B. The Landfill Gas Interim Standard Offer Prices Appear to be Higher than Necessary, Particularly for Expansions and Other “Large” Projects

GMP anticipates two distinct classes of potential new projects will generate additional electricity from landfill methane in Vermont. These are: (1) expansion of existing projects through installation of additional engines, most likely in unit sizes of 1.6 MW nameplate per engine to match the existing engines at each active landfill site; and (2) development of smaller projects, most likely at or below 200 kW in nameplate capacity, at closed landfills that have existing landfill gas collection systems and flares, or other small closed landfills. Smith Pf. at 4. In addition to the above, it is possible that existing landfill gas projects might be expanded by supplementing the landfill methane by fuel from another source, such as biogas fuel produced by the anaerobic digestion of organic wastes in new facilities to be developed at or adjacent to the landfills. Smith Pf. at 5.

The most cost-effective potential LFG project configuration in Vermont would likely be based on a 1.6 MW nameplate internal combustion engine. The existing Coventry and Moretown LFG projects each are based on multiple 1,600 kW nameplate engines. It is reasonable to expect that expansions of these projects could be proposed using the same-sized engines, or somewhat smaller ones on the order of 800 kW to 1,000 kW. Smith Pf. at 5. Although two models presented in this docket suggest ideal prices of \$0.254 and \$0.129 per kWh, GMP believes that these prices are too high. Smith Pf. at 5; Tr. 12/3/09 at 110 (Smith). Larger 1.6 MW nameplate engines would feature significantly lower capital costs and all-in power costs. Generally, the lower per-kW costs of larger projects reflect both the economies of scale that results from larger size of the generating equipment (engines and turbines) and the ability to spread development

costs, landfill gas collection system costs, interconnection costs, control system costs, site improvements and other infrastructure costs over a larger number of kW. Smith Pf. at 6-7. In addition, expansion projects have a strong potential to achieve lower incremental costs for land, transmission interconnection, other infrastructure, and permitting. Smith Pf. at 7.

GMP suggests that the most efficient price for energy from this resource would be \$0.12 per kWh for small LFG projects and \$0.10 per kWh for large projects on a nominal levelized basis. Tr. 12/3/09 at 115, 120-121 (Smith). GMP's recommendation on these prices takes into account information that appeared to be lacking from the assumptions of the working group in this docket, such as operation and maintenance costs and thermal efficiencies. Tr. 12/3/09 at 126 (Smith). Although these recommended rates could exceed the all-in costs of some Vermont projects, GMP believes these rates strike an appropriate balance between incenting project development and protecting overpayment by Vermont ratepayers. Smith Pf. at 11.

The risk to Vermont ratepayers of overpaying over the life of these projects is substantial. For example, consider that an overpayment of 2 cents per kWh for a single LFG project would represent about \$200,000 per year. Over 15 years, this represents a cumulative overpayment by Vermont ratepayers of about \$3 million. If a project were instead paid a standard contract rate of \$0.254 per kWh, consistent with the Cost Analysis Subgroup's "Initial Runs," GMP calculates the overpayment would amount to almost 15 cents per kWh, or \$1.5 million per year and about \$22 million over 15 years. Smith Pf. at 12; Tr. 12/3/09 at 110 (Smith). This would be a bad outcome for GMP customers. Tr. 12/3/09 at 126 (Smith). There is also a risk, although not quantified by GMP, that if the standard rate were set too low that no potential generator would accept, leading to a waste of LFG, which would be flared rather than used to generate electricity. Tr. 12/3/09 at 117 (Smith). GMP has considered this fact in making its price recommendations. Tr. 12/3/09 at 117 (Smith).

## **CONCLUSION**

GMP supports the development of renewable energy and related planned energy industries in Vermont while retaining and supporting the state's existing renewable energy infrastructure. GMP argues that the Board should provide an incentive for the state's retail electricity providers to enter into affordable, longer-term stably priced renewable energy contracts that mitigate market price fluctuations for Vermonters. As GMP's testimony demonstrates, there are good indications that the prices set for solar and LFG electric generation

projects are too high and that if prices continue at these levels, Vermont ratepayers will bear substantial economic burden. For the above reasons, GMP respectfully submits that the Board should (1) ensure that the price set for renewables provides sufficient incentive for the rapid development and commissioning of plants but does not exceed the minimum amount needed to provide such an incentive (2) support the development of renewable energy and related planned energy industries in Vermont while retaining and support existing renewable energy infrastructure, and (3) provide an incentive for the state's retail electricity providers to enter into affordable, longer-term stably priced renewable energy contracts that mitigate market price fluctuations for Vermonters.

Dated at Burlington, Vermont this 16<sup>th</sup> day of December, 2009.

RESPECTFULLY SUBMITTED,

GREEN MOUNTAIN POWER CORPORATION

By:



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