

**Written Testimony of
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**Energy and Technology Committee
March 19, 2013**

RE: SB1138 – An Act Concerning Connecticut’s Clean Energy Goals; and
HB6532 – An Act Concerning Certification of Class I and Class II Renewable Energy
Sources, Renewable Energy Credits and Alternative Compliance Payments

Brookfield Renewable Energy Group (BREG) is a leading national and international developer and operator of renewable energy, specifically focused on hydropower and wind. Brookfield is among the top independent producers of renewable energy in North and South America. Being in business for over 100 years, today BREG owns, operates and manages about \$19 billion of power generation assets in Canada, the United States, and Brazil. BREG’s power generation fleet totals approximately 5,600 megawatts of installed capacity globally, with more than half located in the United States. BREG has a particularly significant presence in New England with 39 hydro stations, including a major hydro pumped-storage facility, and 33 wind turbines, which in total represent over 1,300 MW of installed capacity, enough to power more than 150,000 Connecticut homes. BREG’s US operations are based in Marlborough, Massachusetts.

At BREG, we are committed to managing and, whenever possible, lessening the potential environmental impact associated with our operations and activities. One of our priorities is to protect our surrounding environment and act in accordance with all applicable laws, regulations and standards. One way in which we ensure we are achieving this goal is through certification by the Low Impact Hydropower Institute (LIHI). Brookfield has more hydropower facilities certified by LIHI than any other U.S. hydropower operator. We have successfully obtained 47 LIHI certificates for projects in various locations across the US.

LIHI facilities have unique operating characteristics. For example, they are specially designed to minimize impact on fisheries through run-of-river operations and regulated ramping rates. Operations at LIHI facilities are tailored to protect watersheds, cultural resources, and to provide recreational opportunities. While clearly in the interest of environmental stewardship, such operations are more expensive and typically require facilities to be smaller-scale than conventional hydropower facilities, which increases their production costs relative to output. As such, the long-term viability and maintenance of existing LIHI facilities relies on fair market revenue that recognizes their cost structure and the ongoing environmental benefits they provide.

Brookfield Renewable Energy Group's Position

1. Low-Impact Hydropower Less than 30MW

BREG supports the recognition of LIHI within the Connecticut RPS as an important indicator of low environmental impact hydropower facilities that provide clear environmental benefits to the state and region.

We remain concerned however that pre-2003 vintage low-impact hydropower remains unrecognized in a meaningful way in the Connecticut RPS program, and question the artificial distinction between post-2003 vintage LIHI resources and older pre-2003 vintage LIHI resources, particularly those that are operating at a small-scale below 30 megawatts (MW), as proposed in bill SB1138 – *An Act Concerning Connecticut's Clean Energy Goals*.

Because of their unique operating characteristics, older pre-2003 vintage LIHI resources, particularly those less than 30MW, cannot be assumed to be able to continue their operations without appropriate revenue streams commensurate with that of new Class I resources. Each electron produced by these older vintage LIHI facilities provides the same environmental benefits and offsets electricity production from polluting facilities just as newer resources do. But the optimized operation and continued maintenance of pre-2003 LIHI facilities for the benefit of the New England grid is reliant on viable and fair market revenues.

Fair market revenue for these facilities is important to consider: If certain pre-2003 LIHI facilities become non-viable over time, the New England grid would lose an important element of its renewable diversity. Hydropower, even at a small-scale, is well-suited to providing reliability benefits compared to renewable resources with shorter-term intermittency such as wind and solar power. In reality, however, much of the cost-effective and technically feasible hydropower opportunities in New England have likely already been developed. Therefore, discriminating against older-vintage pre-2003 small-scale LIHI facilities appears to be counter to the basic environmental, economic, and diversity goals of the RPS.

BREG therefore suggests that the proposed amendment to Section 1, Subdivision 26 subsection (a) of Section 16-1 of the general statutes (definition of Class I renewable energy source) be modified as follows:

"Class I renewable energy source" means electricity derived from...(VIII) a hydropower facility, provided such facility has a generating capacity of not more than thirty megawatts, and has received a certificate from the Low Impact Hydropower Institute [~~and began operation after July 1, 2003~~]....

Enacting this modification to the proposed amendment would not only ensure the ongoing viability of all small-scale low-impact hydropower resources, it would cost-effectively provide a measured amount of liquidity to the Class I market that is presently undersupplied, thus reducing prices for Connecticut consumers. Yet it would do so without inappropriately "flooding" the Class I market. Given the RPS market dynamics in New England we expect it would impact

prices in a way that reduces the compliance payments being paid by Connecticut consumers, but still maintain a viable price level in Class I.¹

Simply requiring Class I hydropower resources to be less than 30 MW and LIHI certified as currently proposed, without removing the vintage restriction, will *not* achieve this price relief.

Alternatively, a separate “Class I Maintenance Tier” for pre-2003 LIHI facilities less than 30MW should be established as a new subsection of Section 1, Subdivision 26, subsection (a) of Section 16-1, as follows:

(C) “Class I Maintenance Tier renewable energy source” means a hydropower facility that has a generating capacity less than thirty megawatts, received a certificate from the Low Impact Hydropower Institute and began operation before July 1, 2003.

Class I Maintenance Tier resources should then form a portion (we propose at least half) of the carve-out proposed “Class I Contracted Tier” building on the proposed language of Section 4, subsection (a), subsections (9) through (20). Using Subsection (9) as an example:

(9) “On and after January 1, 2014, not less than eleven per cent of the total output or services of any such supplier or distribution company shall be generated from Class I renewable energy sources, provided not more than two per cent of such total output or services may be generated by Class I contracted tier renewable energy sources, of which at least half of this two per cent must be generated by Class I maintenance tier renewable energy sources, and an additional three per cent of the total output or services shall be from Class I or Class II renewable energy sources”

The general Maintenance Tier approach described above would then apply to all subsequent years involving the Class I Contracted Tier as proposed in bill HB1138.

To enhance competition in the interest of Connecticut consumers, Class I Maintenance Tier resources should also be qualified under the contracting provisions, including a requirement for competitive solicitation, proposed under Section 5, new subsection (i) of Section 16-245a, as follows:

*(i) “On or after July 1, 2013, the Commissioner of Energy and Environmental Protection, in conjunction with the electric distribution companies and the procurement manager, may solicit proposals from providers of Class I renewable energy sources, ~~[or]~~ Class I contracted tier renewable energy sources, or Class I maintenance tier renewable energy sources...
...Providers of Class I renewable energy sources, ~~[or]~~ Class I contracted tier sources, or Class I maintenance tier sources shall be selected on the basis of delivered price, under a competitive procurement process, and consistent with the policy goals outlined in the Comprehensive Energy Strategy and section 129 of public act 11-80, including, but not limited to, peak load shaving and promotion of wind, solar and other renewable energy technologies.”*

The inclusion of this Maintenance Tier is important not only to ensure the ongoing maintenance and viability of existing pre-2003 LIHI resources, but also in the interest of ensuring that any resources procured through the Class I Contracted Tier is competitive and cost-effective for Connecticut customers. It is important to recognize that these pre-2003 LIHI resources would provide at least as good and quite possibly better environmental and cost benefits to the State as the larger-scale hydropower that is envisioned in the definition of a “Class I contracted tier renewable energy resource” in Section 1, Subdivision (26)(B) of the proposed bill SB1138. Improving the competitiveness of this Class I Contracted Tier is clearly in the interest of all Connecticut consumers.

2. Imports of Renewable Energy Credits

BREG supports the expansion of control areas from which imports of renewable energy resources can qualify into the RPS. We remain concerned however that restrictions are being imposed on geographic location of origin of such imports, rather than on ensuring the energy is actually delivered, as currently proposed in HB6532 – *An Act Concerning Certification of Class I and Class II Renewable Energy Sources and Class III Sources, Renewable Energy Credits and Alternative Compliance Payments*.

In 2009 the NEPOOL Board of Review recommended NEPOOL-GIS amend its operating rules to include eligible renewable energy generated in non-adjacent control areas (PJM, MISO, and Ontario) into the New England renewable energy market.ⁱⁱ In their decision, they stated that “There are present and potentially future benefits to the States and to the end-us customers in permitting a greater area for the import of renewable energy into the New England region”. The report also suggested that REC market efficiency in New England is currently hindered by inefficiencies associated with artificial RPS restrictions and limited renewable resources in the region.

While it is commendable that Connecticut continues to work with the New England States Committee on Electricity (NESCOE) to coordinate competitive procurement of renewable energy within the region, it is also important to consider the impact on Connecticut customers and interests. In reality, the development of these resources is likely to be outside of Connecticut borders and will inevitably come at a price premium which will need to be borne directly by Connecticut consumers. Enabling imports of renewable energy from non-adjacent control areas without geographic restriction takes advantage of basic market fundamentals that reduce the cost of developing renewable energy for all customers, while ensuring that incremental reductions in fossil fuel use result.

We also note that removing geographic restrictions does not imply the flooding of the Connecticut Class I RPS market, particularly if appropriate energy delivery requirements are in place. It is also important that the associated energy be delivered along with the qualifying renewable energy credit, which is not currently specified in bill HB6532 as proposed.

BREG therefore suggests that Section 10, Subsection (b) of Section 16-245a as currently proposed in HB6532 be revised to be consistent with the NEPOOL Board of Review recommendations and to ensure that energy is deliverable along with qualifying renewable energy credits, as follows:

(b) an electric supplier or electric distribution company may satisfy the requirements of this section... (4) by purchasing renewable energy credits from a generating unit located in ~~[the state of New York, Pennsylvania, Maryland or Delaware]~~ any state or province from which energy is delivered into the control area of the regional independent system operator, provided (A) such generating unit uses the equivalent of a Class I or Class II renewable energy source, (B) the associated energy is imported into the control area of the regional independent system operator, and (C) the Public Utilities Regulatory Authority determines that such state has a renewable portfolio standards program comparable to the renewable portfolio standards established in section 16-245a, as amended by this act.

Enabling imports of qualifying renewable resources from non-adjacent control areas, as was implicit in the original design of the Connecticut RPS, would significantly improve market efficiency without relying on a limited subset of importing jurisdictions. Indeed such reliance risks substantial additional cost burdens on Connecticut electricity customers over time.

In this regard, BREG notes that the definition of a “Class I contracted tier renewable energy source” as proposed in SB1138 is highly unclear and appears to be geared to limiting geographic diversity and competition against the interests of Connecticut consumers rather than enhancing it.

3. Unit Tagging of Renewable Resources

Ensuring that renewable energy qualifying for the RPS is tracked to the generating unit of its origin is critical to ensuring the ongoing integrity of the program. This requirement ensures that any resources qualifying and being delivered to the region have not been inadvertently mixed with other non-renewable and polluting system resources. The absence of such a requirement could clearly undermine the environmental objectives of the RPS.

BREG therefore suggests that the definition of “Class I contracted tier renewable energy source” as proposed in SB1138 include a requirement that the renewable energy credits and energy associated with such a resource be tagged to their generating unit of origin.

Without unit tagging for “Class I contracted tier renewable energy sources” it is highly probable that a substantial portion of energy being delivered may have actually originated indirectly from fossil-fuel generating facilities.

CONCLUSION:

In summary, BREG believes that addressing the following comments and suggested revisions to proposed bills SB1138 and HB6532 would improve the environmental benefits and reduce the costs of the Connecticut RPS program:

- BREG supports the recognition of Low-Impact Hydropower Institute-certified hydropower less than 30MW, but we oppose the distinction between pre-2003 and post-2003 LIHI resources;
- The best way to reduce costs of the RPS program for Connecticut consumers and to ensure the LIHI facilities are able to remain viable into the future is to remove the vintage restriction on LIHI facilities less than 30 MW as currently proposed in HB1138;
- An alternative way to help ensure the ongoing viability of LIHI facilities and provide greater competition for future procurements, is to enable a substantial portion of the proposed “Class I contracted tier renewable energy resources” as currently proposed in HB 1138 to come from LIHI facilities less than 30 MW, including competitive solicitations for any procurement of such resources;
- BREG supports the expansion of control areas from which imports of renewable energy resources can qualify into the RPS, but we oppose the artificial geographic restrictions and the absence of clear deliverability requirements for energy associated with the imports;
- The proposed definition of a “Class I contracted tier renewable energy source” is highly unclear and appears to be geared to limiting geographic diversity and competition against the interests of Connecticut consumers rather than enhancing it; and,
- The definition of “Class I contracted tier renewable energy source” should include a requirement that the renewable energy credits and energy associated with such a resource be tagged to their generating unit of origin.

In closing, I thank you for the opportunity to allow my company to submit testimony to this hearing. Brookfield Renewable Energy Group respectfully asks the committee to adopt these changes to the proposed legislation tabled in bills SB1138 and HB6532. Thank you.



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ⁱ The present market dynamics appear to suggest that prices may settle at levels associated with other Class II programs, which have recently been trading at levels of roughly \$25/MWh.

ⁱⁱ http://www.iso-ne.com/committees/comm_wkgrps/prtcnts_comm/rwbrd/mtrls/2009/02_ne_bd_2008_decision.pdf