



February 10, 2017

Mrs. Judith Whitney, Clerk
Vermont Public Service Board
112 State Street, 4th Floor
Montpelier, VT 05620

Re: Docket No. 8817 – Standard Offer Reply Comments

Dear Public Service Board Members,

Renewable Energy Vermont (“REV”) offers the following comments to strengthen implementation of the Standard Offer Program and in response to the Pro Formas and recent pricing comments submitted by the Department of Public Service (“DPS” or “Department”). As noted by the Board’s website for the Standard Offer program, “[t]he Standard Offer Program, pursuant to 30 V.S.A. § 8005a, promotes the rapid deployment of renewable generation facilities with a nameplate capacity of 2.2 MW or less.”¹

Some of the pro forma and pricing comments submitted by the Department include outdated information related to existing federal and state tax rules, debt service, regulatory impacts of project costs, and land lease rates. REV requests that the Board consider the specific updates below when setting the 2017 price caps.

Solar

The Department assumes \$1,000/acre per year for land lease rates. Current actual market lease rates are approximately 2 times that, and for smaller solar projects (eg. 500 KW) market rates are more than 2.5 times that amount. Given the limited areas not available for solar project siting due to local, regional, and state regulatory and statutory changes, land lease rates are anticipated to further increase. REV requests that this assumption be adjusted in the pro forma calculations.

The Department’s assumptions on debt to equity ratios are also too low. For the developer block, developers cannot access the 60% total project cost debt level and also cannot access an average rate (short and long term combined) of 4.5%. DPS’s model underestimates the financing costs and challenges for a 2.2 MW solar project.

The Department assumes the Vermont State Investment Tax Credit (“TTC”) of 7.2% can be used. On average this limited state tax credit on a 2.2MW Standard Offer project (not located on a preferred site) could be approximately estimated at \$300,000 and must be used in one year, it cannot be carried forward. Very few projects can utilize this credit. REV recommends that this be considered in the solar price cap and the calculations be revised. The Vermont State Investment

¹ <http://psb.vermont.gov/docketsandproject/electric/standard-offerprogram>



Tax Credit will not be applicable to many projects. Factoring this into the DPS model, these projects would only be eligible for a much lower 5.4% IRR.

Regarding the preferred siting cost data presented by the Department for the new pilot program, Vermont's unique weather conditions should be taken into consideration. The CESA report reflected national data, which would be very different than on the ground application in Vermont, particularly for parking lot canopies. Parking lot canopies have largely been developed in warmer climates which do not need a steep pitch to accommodate icing, snow, and other Vermont weather conditions. It should also be noted that ground mounted projects on other "preferred locations", such as gravel pits and landfills, require extensive additional permitting, design, environmental considerations, and construction costs greater than traditional standard offer solar projects.

Wind

There are several assumptions in the DPS Wind Pro Formas which need to be revised to accurately reflect practical large and small wind development costs. First, the DPS assumed loan interest rates of 3% or 4.5% are lower than are currently available. Second, for projects built in 2017, the Federal ITC is 24% and lowers further in the following years (see below). In practice, projects eligible for this 2017 bid process will not be built until 2018 at the earliest due to the lengthy permitting process. The ITC applies only once the project is built, so this affects the % appropriate in the assumptions. Third, DPS rates for operating expenses and land leases are lower than what is experienced in the current Vermont market.

Small wind projects assume property taxes of at least \$10,000 per year. Large wind projects assume approximately \$20,000 per year plus a \$3.30/MWh state education fund production tax payment.

Stricter sound and winter operational wind regulations are expected to impose further restrictions on both small and large wind projects and should be considered in the Pro Forma. Small wind projects will require more land due to large setbacks. Large wind is expected to have reduced operational hours.

The Vermont ITC does not apply to Large Wind (>100 kW). Based on REV member's experience, at good wind sites in Vermont, the gross capacity factor has been approximately 30%. The net capacity factor should be lower to reflect losses from availability, operational restrictions, and electrical and mechanical system losses. Large wind operating expenses are typically modeled as \$25/MWh in year 1 and escalating to \$35-\$40/MWh in year 20. Updating the DPS Large Wind Pro Formas with the assumptions listed below, and then solving for the DPS target IRR of 9.02% yields a levelized standard offer price of \$129.09/MWh.

On the Assumptions Sheet:

Long Term Debt Percentage is 50% (DPS listed as 30%) *Requirements to yield feasible DCSR and DPS target IRR of 9.02%

Short Term Debt Percentage is 10% (DPS listed as 30%) *Requirements to yield feasible DCSR and DPS target IRR of 9.02%



Long Term Debt Rate is 7% fixed (DPS listed 4.5% escalating to 6%)
Short Term Debt Rate is 6% escalating to 7% (DPS listed 3% escalating to 4%)
Investment Tax Credit Discount as a Percentage of Hard Costs is 90% (DPS listed 97.5%)
Federal ITC rate is 24% for 2017; 18% for 2018; 12% for 2019. Used 2018 value of 18%. (DPS listed 30%)
State ITC does not apply to wind projects over 100 kW (DPS included at 7.2%)
Gross Project Capacity Factor is 30% (DPS listed 26%) – For good Vermont Sites
Project Availability is 95% (DPS listed 100%)
Loss Factor is 7% (DPS listed 0%) – loss factor includes, electrical losses, mechanical losses, and operational restrictions losses
Other Operational Expenses are \$10,000/year (DPS listed \$0)
Land Lease Expenses are \$1500/MW/year for large wind (DPS listed \$800/MW/year)

On the Cash Flow Sheet:

Production Tax unchanged at \$3.30/MWh (value DPS provided)
Municipal Property Tax unchanged at \$13,399 (value DPS provided)

Overall, REV does not recommend lowering the 2016 price caps and technology break-outs for non-preferred locations. These were recently established and there is no evidence that warrants changing the current caps. REV notes that the existing price caps are extremely competitive, and for solar projects are below recently approved utility project's rates. The Legislature was clear in its intent to have the Standard Offer Program apply to multiple technologies. The preferred location pilot project criteria was not intended to reduce the technology allocations of generation that cannot be located on preferred sites (for example digesters, wind, hydro, etc.).

REV again recommends that any action taken by the Board be guided by two primary considerations. First, the program must assure timely development of Standard Offer projects² in accordance with the pace established by 30 V.S.A. § 8005a(c)(1), which requires development of 7.5 MW from Standard Offer projects per year between April 1, 2016 to April 1, 2019. On this front, REV highlights the fact that the Standard Offer Program is averaging less than 1 MW of projects placed in service annually, not the 5 to 7.5 MW specified in statute.

The Board should further be guided by a directive to develop and implement programs to achieve Vermont's greenhouse gas ("GHG") reduction goals under 10 V.S.A. § 578(a), which call for reducing Vermont's GHG emissions footprint from 1990 levels by 50% by 2028 and 75% by 2050.³ The most recent Vermont Greenhouse Gas Emissions Inventory Update reports that GHG emissions have increased approximately 2% above the 1990 levels.⁴ Any proposed adjustments to the Standard Offer Program design should have these important facts in mind.

² See, e.g., 30 V.S.A. § 8005a(f).

³ 10 V.S.A. § 578(a)(emphasis added).

⁴ Vermont Greenhouse Gas Emissions Inventory Update 1990-2012 (June 2015).



Given the limited size and scope of the statutorily required allocations for the preferred locations pilot program, REV supports flexible and competitive, market-based mechanisms, but not capped (pre-established avoided cost) pricing for these projects, consistent with the discretion provided the Board under Section 8005a(f). Rather than establishing price caps or pre-established criteria to “screen out” projects, the Board should be flexible and use the pilot as a market driven opportunity to encourage innovation. By definition, a pilot program is intended to test the appropriate architecture of a program design to determine how to best satisfy the goals of the program. Rather than prescriptively excluding projects, the pilot program should be flexible to allow the market to bring forward innovative proposals that can meet program goals, particularly since the program is already underperforming as currently designed.

Additionally, REV urges the Board to always maintain a reserve list of projects and to rapidly substitute projects from the reserve list for projects that do not meet the Standard Offer milestones. If no projects are submitted for the specified technology, then the next project closest to the awarding bid price should fill the slot. REV would also support an evaluation of projects beyond the lowest bid exclusive.

REV appreciates concerns raised about project costs, but notes that the project size limits in the Standard Offer Program do not provide developers with sufficient economies of scale that can be achieved by the 5 MW projects recently under development. REV urges the Board to again allow technology carve out flexibility, so that lower cost projects exceeding a specific technologies size allowance will not be disqualified from the program. Permitting project size flexibility would allow for customer savings and the benefits achieved through of economies of scale.

Thank you for the opportunity to comment.

Respectfully submitted,

Olivia Campbell Andersen
Executive Director
Renewable Energy Vermont

Renewable Energy Vermont's members - businesses, non-profits, utilities, and individuals - are committed to reducing our reliance on dirty fossil fuels by increasing clean renewable energy and energy efficiency in Vermont. Vermont's clean energy economy supports at least 17,715 jobs at 2,519 businesses, representing approximately 6% of Vermont's workforce. Together, we will achieve 90% total renewable energy (electric, thermal, transportation) by 2050.