STATE OF VERMONT
PUBLIC SERVICE BOARD

Docket No. 7873

Programmatic Changes to the Standard-Offer Program)

Docket No. 7874

Investigation into the Establishment of Standard-Offer)
Prices under the Sustainably Priced Energy Enterprise)
Development ("SPEED") Program)

Order entered: 2/17/2015

ORDER RE 2015 TECHNOLOGY ALLOCATION

I. INTRODUCTION

In this Order, the Vermont Public Service Board ("Board") establishes a minimum technology allocation for the 2015 Request for Proposals ("RFP") under the standard-offer program. Pursuant to 30 V.S.A. § 8005a(c)(2), 1.5 MW of the cumulative capacity of the standard-offer program shall be reserved for small wind plants (wind power with a capacity less than or equal to 100 kW) and for food waste anaerobic digestion plants, which represents a new technology in the standard-offer program.

II. BACKGROUND AND PROCEDURAL HISTORY

Statutory Background

Public Act 170,[1] as codified in 30 V.S.A. §§ 8005a and 8006a, mandates significant changes to the Sustainably Priced Energy Enterprise Development ("SPEED") standard-offer program, which include: (1) annually increasing the cumulative plant capacity of the standard-offer program until the 127.5 MW capacity of the program is reached, pursuant to a predetermined schedule; (2) allocating the cumulative plant capacity among different categories

1. Public Act 170 (2012, Vt., Adj. Sess.). The text of Act 170 can be found at http://www.leg.state.vt.us/DOCS/2012/ACTS/ACT170.PDF.

of renewable energy technologies; and (3) setting standard-offer prices for each renewable energy category at avoided cost, with the requirement that the Board employ a market-based mechanism.

Section 8005a(c)(2) includes the following directive with regard to technology allocations:

> The board shall allocate the 127.5-MW cumulative plant capacity of this subsection among different categories of renewable energy technologies. These categories shall include at least each of the following: methane derived from a landfill; solar power; wind power with a plant capacity of 100 kW or less; wind power with a plant capacity greater than 100 kW; hydroelectric power; and biomass power using a fuel other than methane derived from an agricultural operation or landfill.

Pursuant to 30 V.S.A.§ 8005a(b), in order to be eligible for a standard offer, a plant must be a "renewable energy plant." Pursuant to Section 8002(17), "Renewable energy" means:

> energy produced using a technology that relies on a resource that is being consumed at a harvest rate at or below its natural regeneration rate.
>
> (A) For purposes of this subdivision (17), methane gas and other flammable gases produced by the decay of sewage treatment plant wastes or landfill wastes and anaerobic digestion of agricultural products, byproducts, or wastes shall be considered renewable energy resources, but no form of solid waste, other than agricultural or silvicultural waste, shall be considered renewable.
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> (B) For purposes of this subdivision (17), no form of nuclear fuel shall be considered renewable.
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> (C) The only portion of electricity produced by a system of generating resources that shall be considered renewable is that portion generated by a technology that qualifies as renewable under this subdivision (17).
>
> (D) After conducting administrative proceedings, the Board may add technologies or technology categories to the definition of "renewable energy," provided that technologies using the following fuels shall not be considered renewable energy supplies: coal, oil, propane, and natural gas.
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> Pursuant to 10 V.S.A. § 6602(2), "solid waste" means:
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> any discarded garbage, refuse, septage, sludge from a waste treatment plant, water supply plant, or pollution control facility and other discarded material, including solid, liquid, semi-solid, or contained gaseous materials resulting from industrial, commercial, mining, or agricultural operations and from community activities but does not include animal manure and absorbent bedding used for soil enrichment;

> high carbon bulking agents used in composting; or solid or dissolved materials in industrial discharges which are point sources subject to permits under the Water Pollution Control Act, chapter 47 of this title.

Procedural History

On March 1, 2013, the Board issued an Order implementing significant changes to the standard-offer program required by Public Act 170 ("March 1 Order").[2] In the March 1 Order, pursuant to Section 8005a(f), the Board established an RFP mechanism for new standard-offer projects, for effect on April 1, 2013, and each following April 1, and established avoided costs to serve as caps on the standard-offer prices solicited through the RFP.

In a February 7, 2014, Order, the Board declined to establish a minimum technology allocation for the standard-offer projects solicited through the 2014 RFP. The Board stated that it would conduct an additional proceeding following the 2014 RFP process to investigate the establishment of a minimum technology allocation.

On August 18, 2014, Star Wind Turbines, LLC, filed a petition with the Board requesting that the Board conduct a proceeding to determine the appropriateness of establishing a minimum technology allocation under the standard-offer program.

On September 9, 2014, Board staff held a workshop in these dockets that included a discussion of a minimum technology allocation, pursuant to Section 8005a(c)(2), for the standard-offer projects solicited through the 2015 RFP.

Following the September 9th Workshop, in a memorandum dated September 17, 2014, Board staff offered two technology allocation proposals for the participants' consideration and encouraged the participants to develop their own specific proposals. Board staff requested comment on the following possible technology allocation options:

> (1) Set aside of 1 MW of the 2015 RFP capacity for non-solar projects. Within the set-aside, preference will be given first to the lowest-priced small wind proposal. The remaining unallocated capacity within the set-aside would be allocated in the following manner: (a) all projects will be categorized by technology, and ranked from lowest price to highest within the technology category; (b) a percentage discount value to the technology-specific avoided-cost price cap would be calculated for each project within a given technology category;

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2. Docket Nos. 7873 & 7874, Order of 3/1/13.

> and (c) the percentage discount value would be used to select projects from different technology categories on a comparable, non-price basis.
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> The first RFP contract would be awarded to the project that is the lowest price project in its category and has the highest percent discount value to its technology-specific avoided-cost price cap. The next RFP contract would be awarded to the lowest price project in a different technology category and has the highest percent discount value. This allocation process would continue until all technologies represented by the RFP response have been allocated capacity. In the event that there remained unallocated capacity, the process would begin anew.
>
> (2) Set aside of 500 kW each for small wind and biomass categories (large wind should not need a set-aside because of its ability to compete on price with solar). Projects in the RFP will be selected by lowest price in each category.

On September 26, 2014, comments on technology allocations were filed by the Vermont Department of Public Service ("Department"), Green Mountain Power Corporation ("GMP"), NEO Energy LLC ("NEO"), Renewable Energy Vermont ("REV"), Triland Partners LP ("Triland"), Vermont Electric Cooperative, Inc. ("VEC"), and VEPP Inc. ("VEPPI").

In a memorandum dated December 5, 2014, the Board requested comment on whether food waste or "non-farm" anaerobic digestion projects meet the definition of renewable energy pursuant to 30 V.S.A. § 8002(17), and therefore are eligible to receive a standard offer.

On December 17, 2014, the Department filed comments arguing that food waste anaerobic digestion projects meet the definition of renewable energy. The Department represented that the Vermont Agency of Natural Resources ("ANR") and the Vermont Agency of Agriculture, Food, and Markets ("AAFM") supported its comments.

On December 17, 2014, ANR filed comments requesting that the Board designate and define food waste or "non-farm" anaerobic digestion projects as renewable energy and indicated its support of the comments filed by the Department on this matter. On December 17, 2014, GMP filed a letter indicating its support of the comments filed by the Department. In addition, on December 17, 2014, REV and Vermont Technical College ("Vermont Tech") separately filed comments supporting the conclusion that food waste anaerobic digestion projects meet the definition of renewable energy.

III. PARTICIPANTS' COMMENTS

Technology Categories

The Department, ANR, AAFM, GMP, NEO, REV, Triland, VEC, and Vermont Tech support the establishment of a minimum technology allocation, recommending two categories, small wind and food waste anaerobic digestion projects. The Department contends there is market interest in the small wind category because one small wind proposal was submitted in response to the 2014 RFP. The Department and NEO contend there is market interest in developing food waste anaerobic digestion systems, in particular because these projects may also have benefits associated with compliance with Act 148, which gradually leads to a ban on the landfill disposal of food waste. The Department proposes defining this category as any anaerobic digestion system in which agriculture wastes are less then 50 percent of the digested materials on an annual basis.

The Department contends that it is not necessary to specifically allocate capacity to the biomass, wind power with a capacity greater than 100 KW ("large wind"), and hydroelectric technology categories because these categories all have avoided-cost caps that are lower or competitive with the bids that were accepted in the first two RFPs. With regard to landfill methane, the Department states that there are no identified future potential sites for this technology.

Triland recommends the consideration of a separate category for solar projects combined with energy storage. Triland requests further discussion of establishing an avoided-cost cap for this technology. While the Department and REV support the development of this technology, no participant recommended an allocation for this technology in the 2015 RFP.

The Department argues that food waste anaerobic digestion projects meet the definition of renewable pursuant to Section 8002(17)(A), and are thus eligible to receive standard-offer contracts. The Department contends that the decay of food waste and non-agricultural organic material produces methane and other flammable gases (collectively biogas) and that both materials are identifiable components of landfill waste and, as such, are already considered renewable energy resources. While Section 8002(17) concludes with the clause that "no form of solid waste, other than agricultural or silvicultural waste, shall be considered renewable," the

Department argues this clause could be misconstrued as a prohibition on food and non-farm waste being considered a renewable resource. The Department contends that the statute allows some forms of solid waste to be renewable resources -- specifically those forms that produce biogas as they decay -- and specifically refers to landfill wastes, which are solid wastes that include food waste and non-farm waste. The Department further argues that Section 8002(1)(A) does not require that the landfill waste biogas be produced in a landfill for it to be considered renewable, only that it be produced as it decays.

The Department further contends that the use of food waste is already incorporated into the Board's implementation of the standard-offer program because food waste and/or non-agricultural waste make up source material for the creation of renewable biogas in both landfill methane and farm methane plants that are currently operating with standard-offer contracts. The Department states that its support for the establishment of a new separate standard-offer category for food waste anaerobic digestion projects should not be seen as an effort to create a new renewable energy technology. Rather, the Department contends that there is a need for a separate avoided-cost price cap from that of the landfill methane price cap that provides adequate treatment of food waste anaerobic digesters consistent with the goals of the standard-offer program.

The Department, ANR, and AAFM endorse the development of food waste anaerobic digestion projects because such projects would support the State's goals for renewable energy (Section 8001) and solid waste (Act 148), as well as AAFM's water-quality and farm viability goals.

REV argues that the methane gas produced by the anaerobic digestion of food residuals in a stand-alone digester or when co-digested with manure in a farm digester is no different than the methane gas produced by the anaerobic digestion of food residuals that takes place in a landfill or in a sewage treatment plant. REV further contends that there is a distinction between anaerobic digestion and traditional waste-to-energy technologies. REV contends that the language in Section 8002(17) addresses the legislative intent of Act 69, which established the prohibition on the treatment of waste-to-energy combustion as renewable, and should not be read as a prohibition on qualifying sources of methane gas as renewable. In addition, REV contends that

the Board has recognized all of the energy from farm digesters as renewable even though some farm digesters are authorized to co-digest up to 49 percent of off-farm materials.

REV argues that the Board has the authority, pursuant to §8002(17)(D), to clarify that methane from the digestion of food residuals in a non-farm digester is considered renewable energy. REV contends that 30 V.S.A. §§ 8001(a)(1), (5), (6), and (8) contain a number of goals that are relevant to the Board's decision to add food waste anaerobic digestion as a technology category. REV further contends the anaerobic digestion of food residuals as an eligible renewable resource is consistent with the position taken by other New England states.

Vermont Tech contends that food waste should be considered a valid feedstock for the production of renewable energy. Vermont Tech further argues that all food waste is the result of agriculture, and might therefore be considered agricultural product or by-product. Further, Vermont Tech notes that the definition of solid waste pursuant to 10 V.S.A. § 6602(2) includes an exemption: "does not include animal manure and absorbent bedding used for soil enrichment; high carbon bulking agents used in composting." Vermont Tech argues that when food waste is collected in a clean stream and used as feedstock for composting and anaerobic digestion, its nutrients are returned to the food cycle in the same manner and should therefore receive the same exemption from being labeled as solid waste. Vermont Tech notes the benefits of the anaerobic digestion of food waste, including reduced methane emissions, reductions in the use of synthetic nitrogen fertilizers, production of electricity, and improvements in soil and water quality.

Technology Allocation

The Department suggests the following approach for implementing technology allocations in the 2015 RFP: (1) a total of 1.5 MW should be set aside for small wind and "food-waste" anaerobic digestion, with each technology receiving a 500 kW minimum allocation; (2) the additional 500 kW should be allocated between these technologies on price; (3) each technology should receive a maximum allocation of 1 MW; and (4) any unused capacity should be reallocated on price to any remaining RFP bids outside of these technology categories. The Department contends that its proposal will ensure that technology allocations continue to meet

the statutory goal of "lowest feasible cost," as well as encourage more competition in areas that may have only a single or a few developers able to respond to the RFP.

If the Board allocates capacity to technologies other than small wind and food waste anaerobic digestion, the Department recommends that the set-aside for the 2015 RFP remain at 1.5 MW, with each technology guaranteed a smaller amount. The Department and REV suggest that the technology allocation be set for the 2015 RFP only and be revisited before each future RFP.

With regard to the first option proposed by Board staff (i.e., ranking by relative discount to avoided-cost cap), the Department contends that while this alternative may encourage competition and efficient bidding, the methodology is somewhat complicated and may be challenging for prospective bidders to understand thoroughly in advance of bidding. In addition, the Department and VEPPI contend that the option magnifies the importance of setting an accurate avoided-cost cap and, depending on the accuracy of the cap, may advantage one technology category over the other category. REV argues that the first option is overly complex and may be inefficient. NEO contends that the first option is overly complicated and unfairly biased toward small wind because the option awards the first RFP contract from the technology set-aside to small wind. VEC supports the first option because it pre-allocates less of the set-aside to a specific technology, leaving more capacity subject to price competition than the second option.

With regard to the second option proposed by Board staff (i.e., two technology set-aside allocations of 500 kW), the Department contends that while this alternative is straightforward and provides certainty to bidders, it may not encourage sufficient competition and efficient bidding. NEO supports the second option with recommended changes, which include a set-aside of 750 kW (net of station service) for food waste anaerobic digesters. REV supports the second option, but suggests the total size be based on percentages, not kWs, as the annual capacity of the program increases (e.g., 10 percent for the first three years, which equates to 500 kW).

NEO, REV, and VEPPI recommend that any unused capacity should be reallocated on price to any remaining RFP bids outside of the allocation set-aside. In addition, VEPPI suggests that the Board consider incorporating a "letter of interest" request into the RFP schedule. Under

this approach, the RFP would be announced in March along with requests that letters of interest be submitted by developers of non-solar projects. These letters of interest would then be used by the Board to determine the size of the technology allocations for the RFP announcement in April.

GMP recommends the establishment of a non-solar allocation of up to 20 percent of the annual quantity being sought in the 2015 RFP. Under this approach, the allocation would be divided evenly among the non-solar technologies submitting bids (e.g., if two technologies are represented in the bids, each would be allotted 50 percent of the non-solar allocation). To encourage competition and diversity among bidders, GMP proposes to use a ranking factor based on the price as bid divided by the technology-specific avoided-cost cap, and to then fill the non-solar allocation starting with the lowest ranking factor and continue to accept projects until the non-solar allocation is filled. GMP recommends that any unused capacity should be reallocated on price to any remaining RFP bids outside of the non-solar technology categories.

VEC provides two proposals for a technology set-aside for the 2015 RFP. Under the first VEC proposal, the 2015 RFP would include a set-aside of 1 MW for non-solar projects. The first RFP contract would be awarded to the project, less than or equal to 1 MW in size, with the lowest bid price. The remaining unallocated capacity within the set-aside would be allocated to projects in the following manner: (1) all projects would be categorized by technology, and ranked from lowest price to highest within the technology category; (2) a percentage discount value to the technology-specific avoided-cost price cap would be calculated for each project within a given technology category; and (3) the percentage discount value would be used to select projects from different technology categories on a comparable, non-price basis. The second RFP contract would be awarded to the project that is the lowest-priced project in its category and has the highest percent discount value to its technology-specific avoided-cost price cap but is of a different technology than that awarded in the set-aside on price alone. The next RFP contract would be awarded to the lowest priced project in a different technology category with the highest percent discount value. This allocation process would continue until all technologies present in the RFP have been allocated capacity. In the event that there remained unallocated RFP capacity, the process would be repeated.

The second VEC proposal is similar to the first proposal, except that the first 4 MW of capacity selected in the RFP would be awarded in a manner similar to past RFPs, with the lowest-priced bids being selected regardless of technology type. The 1 MW set-aside would then be available for filling with non-solar projects similar to the process under the first VEC proposal.

IV. DISCUSSION AND CONCLUSIONS

Technology Categories

Section 8005a(c)(2) requires that the Board allocate the 127.5 MW cumulative plant capacity of the standard-offer program among different categories of renewable energy technologies that include at least each of the following: methane derived from a landfill; solar power; wind power with a plant capacity of 100 kW or less; wind power with a plant capacity greater than 100 kW; hydroelectric power; and biomass power using a fuel other than methane derived from an agricultural operation or landfill. The first 50 MW of cumulative plant capacity included standard-offer contracts issued to solar, hydroelectric, landfill gas, and biomass projects. The 2013 and 2014 RFPs resulted in additional standard-offer contracts issued to solar projects.

With regard to wind projects with a capacity greater than 100 kW, landfill gas projects, hydroelectric projects, and biomass projects (other than agricultural methane), we conclude, pursuant to Section 8005a(c)(2), that a minimum technology allocation is not necessary at this time. The Department has observed that these categories of standard-offer projects have avoided-cost price caps below the prices awarded to the successful 2013 and 2014 RFP solar bidders. Therefore, if market interest for projects in these categories is sufficient, these projects are capable of responding to the RFP successfully; a separate technology allocation is not needed to facilitate successful bidding by the projects in these categories. In addition, landfill gas, hydroelectric, and biomass projects have been issued standard-offer contracts; therfore, a portion of the cumulative capacity has been allocated to these technologies. With regard to solar projects with energy storage, we find that it is premature to establish a separate technology allocation at this time because no participant established that there is significant market interest in this

technology or that there is a reason to establish a category separate from the existing solar category.

With regard to small wind projects, we conclude, pursuant to Section 8005a(c)(2), that it is appropriate to establish a minimum technology allocation for the 2015 RFP. There appears to be sufficient market interest in this technology, but this technology is unlikely to be successful in an RFP determined on price given that the cost of small wind appears to be higher than the cost of the solar projects that have been successful bidders. The existence of market interest in this technology is reflected in the unsuccessful bid by a small wind project in the 2014 RFP.

With regard to food waste anaerobic digestion projects, we are persuaded by participants' recommendations that there is sufficient market interest in developing these systems as a result of changes to food waste disposal required by Act 148. Further, we recognize the benefits of food waste digestion, in particular given changes to food waste disposal required by Act 148.

Section 8002(17)(D) provides the Board authority to add technologies or technology categories to the definition of renewable energy. We conclude that it is appropriate to add food waste anaerobic digestion projects as a technology category to the definition of renewable energy. The generation of methane from food waste through anaerobic digestion is functionally similar to two technology categories that Vermont law, pursuant to Section 8002(17)(A), has already defined as renewable energy: (1) methane generated by food waste placed in landfills; and (2) anaerobic digestion of agricultural products. Moreover, defining food waste anaerobic digestion projects as renewable energy is consistent with the renewable energy goals contained in 30 V.S.A. § 8001(a).

Accordingly, we exercise our authority under Section(17)(D) to add food waste anaerobic digestion projects as a technology category to the definition of renewable energy. Therefore, these projects are eligible, pursuant to 30 V.S.A. § 8005a(b), to participate in the standard-offer program. Further, we conclude, pursuant to Section 8005a(c)(2), that it is appropriate to establish for food waste anaerobic digestion projects a minimum technology allocation for the 2015 RFP.

Technology Allocation

With regard to a specific methodology for implementing a minimum technology allocation, we adopt the Department's proposal to establish a 1.5 MW set-aside for small wind and food waste anaerobic digestion projects.[3] The Department's proposal represents an appropriate balance between encouraging sufficient competition and efficient bidding and allowing for simplicity of implementation. Given that the small wind category includes individual projects of up to 100 kW in size and the food waste anaerobic digestion category is likely to include individual projects up to 500 kW in size, a 1.5 MW allocation will provide an opportunity for a significant number of projects to obtain standard offers.

Accordingly, for the 2015 RFP, a technology allocation of 1.5 MW shall be set aside for small wind and food waste anaerobic digestion, with each technology receiving a 500 kW minimum allocation. Each technology will receive a maximum allocation of 1 MW. The additional 500 kW not specifically reserved for either category will be allocated based on the price of projects in excess of 500 kW. Any unused capacity will be reallocated on price to any remaining 2015 RFP bids outside of these two technology categories.

The technology allocation for food waste anaerobic digestion remains contingent on the development of an avoided-cost cap for this category.[4] If the avoided-cost cap is not developed before the 2015 RFP announcement, the technology allocation will include only small wind with a 1 MW technology allocation. In addition, we will review the outcome of the 2015 RFP to inform the potential establishment of technology allocations for future RFPs beyond 2015.

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3. NEO recommends that any technology allocation for food waste anaerobic digestion projects be defined as net of station service. Under 30 V.S.A. § 8002(15), plant capacity is defined as "the rated electrical nameplate for a plant." In an October 16, 2009, Order implementing the standard-offer program, the Board concluded that the statute intends for plant capacity to be defined as the maximum output of the generating equipment, as rated by the manufacturer and defined by the nameplate rating, and not to include adjustments for losses from ancillary equipment. See *First Order Re Implementation Issues*, Docket 7533, Order of 10/16/09 at 16. NEO has provided no basis for altering our previous conclusion.

4. Pursuant to 30 V.S.A. § 8005a(f)(3), the Board is required to annually review the established avoided-cost caps "to decide whether they should be modified in any respect in order to achieve the goal and requirements of this subsection." In a March 21, 2014 Order, the Board remanded Docket No. 7874 to Board staff in order to review the avoided-cost caps for possible adjustment before the 2015 RFP. The Board intends to issue a determination on price caps before the announcement of the 2015 RFP.

We decline to adopt the recommendation by VEPPI to incorporate a letter-of-interest request into the RFP schedule. Providing the size of the technology allocation well in advance of the RFP, rather than with the announcement in April contemplated under the VEPPI recommendation, will encourage significant competition in the RFP process.

SO ORDERED.

Dated at Montpelier, Vermont, this 17th day of February, 2015.

s/James Volz)
)
) PUBLIC SERVICE
)
s/John D. Burke) BOARD
)
) OF VERMONT
s/Margaret Cheney)

OFFICE OF THE CLERK

FILED: February 17, 2015

ATTEST: s/Judith C. Whitney
Deputy Clerk of the Board

NOTICE TO READERS: This decision is subject to revision of technical errors. Readers are requested to notify the Clerk of the Board (by e-mail, telephone, or in writing) of any apparent errors, in order that any necessary corrections may be made. (E-mail address: psb.clerk@state.vt.us)

Appeal of this decision to the Supreme Court of Vermont must be filed with the Clerk of the Board within thirty days. Appeal will not stay the effect of this Order, absent further order by this Board or appropriate action by the Supreme Court of Vermont. Motions for reconsideration or stay, if any, must be filed with the Clerk of the Board within ten days of the date of this decision and Order.