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May 3, 2022

Ms. Holly Anderson
Clerk of the Commission
Vermont Public Utility Commission
112 State Street
Montpelier, VT 05620-2701

Re: Case No. 22-1490-NM, Letter of Objection

Dear Ms. Anderson,

The Village of Hyde Park Electric Department ("HPE") offers this letter of objection to the application of Ms. Samantha Peake for a certificate of public good for a 7.2 kW ground-mount solar net-metered system in the Town of Hyde Park at 446 Grimes Road, Hyde Park 05655.

I. OBJECTION TO INTERCONNECTION

Since January 1, 2021, Hyde Park Electric has objected to each new NMR application due to potential risk to distribution system stability, reliability and safety.

The accumulation of net-metering systems and existing distributed generation on HPE's single distribution circuit forced recognition that there was a general risk to the system with each additional NMR kW of generation. HPE provides the following information to demonstrate that the interconnection of this net-metering system should not be advanced. As required, HPE provides options to the applicant for resolution.

HPE has identified that it is likely at the threshold for the point when upgrades are necessary to accommodate new NMR generation. The precise point at which the addition of generation that could cause a stability, reliability or safety problem is unknown, and therefore an engineering analysis is necessary prior to proceeding with this interconnection. HPE was advised by its system engineers (Control Point Technologies) that it is not advisable to permit further interconnection of any generation on its system without further study and identification of possible upgrades to maintain system reliability and stability.

The cost of performing the necessary study is the responsibility of the interconnecting requestor pursuant to PUC Rules 5.100 and 5.500. Additionally, any upgrades necessary to accommodate the NMR are also the responsibility of the interconnection requestor under the principles of cost causation adopted in PUC Rules 5.100 and 5.500.

II. IMPACTS FROM DISTRIBUTED GENERATION SUGGEST A NEGATIVE COST BENEFIT TO ITS RATEPAYERS

A common-sense analysis of the value of new NMR resources was conducted (using HPE data analyzed by Energy New England) based on historical pricing for serving energy demand on the system. Nodal pricing (at the sole HPE substation interface with GMP, and where power is priced for HPE to serve its load) indicates periods of negative pricing (i.e. a cost to HPE to export generation). This may result in an increase of cost to serve HPE's load, and negative pricing will occur more frequently with the addition of new NMR distributed energy resources to HPE's system, as the addition of more generation causes more power exports lowering LMP at the relevant node. This situation is called surplus power, and when LMP at the node goes negative, HPE must pay GMP to take the surplus power rather than being paid for the generation as a credit. Admittedly, up to a point, the depression of LMP at the pricing node is beneficial to HPE's customers, however HPE is unable to control the dispatch of presently interconnected distributed generation and has no ability to curtail to avoid negative pricing periods.

Ms. Michelle Cosica, Senior Energy Analysis, Energy New England LLC provided this data.
HPE Minimum Load Data 2017-2020

Min of RTLO	Year			
Month	2017	2018	2019	2020
January	0.021	0.444	0.619	0.774
February	0.277	0.081	0.470	0.413
March	0.252	0.047	0.163	0.000
April	-0.008	-0.104	-0.115	0.002
May	-0.094	-0.118	-0.087	0.003
June	0.141	-0.107	-0.111	0.054
July	0.079	-0.008	0.072	0.284
August	-0.007	0.000	-0.062	-0.065
September	-0.037	0.013	0.001	-0.120
October	0.006	-0.077	0.002	-0.022
November	0.291	-0.031	0.053	0.184
December	0.586	0.488	0.444	0.861

Below is a link to a recent ISO-NE presentation discussing the impacts of net metered distributed energy resources on the New England grid. Of particular relevance is a brief discussion on the last page of the presentation that acknowledges negative LMP pricing. https://www.iso-ne.com/about/what-we-do/in-depth/solar-power-in-new-england-locations-and-impact.

Any flow of electricity onto the distribution grid from this net-metering system that is in excess of HPE needs will result in a financial burden most largely felt by low income ratepayers who already pay a higher percentage of income toward their electric bills. Any cost-shift as detailed in the report below is more largely felt by low income ratepayers as well.

In addition to negative nodal LMP pricing, NMR passes additional cost to all ratepayers. The following selections from a report previously provided to the PUC details the fact that NMR credits result in a cost-shift to other ratepayers.

Village of Hyde Park 2019, Net Metering Avoided Cost Projection Summary Report* (DATA TABLE)
(* prepared by Energy New England LLC, presented on October 14, 2020 to Ms. Maria Fischer, Public Service Department)

kWh

	Pre-NM 2.0	Category I	Category II	Category III	**TOTAL**
Reduced Retail Sales (kWh)	139,246	10,792	2,330		152,368
Excess Generation (kWh)	57,052	67,719	212,613		337,384
Gross NM Generation (kWh)	196,298	78,511	214,943		489,752

COSTS

	Pre-NM 2.0	Category I	Category II	Category III	**TOTAL**
Reduced Retail Sales ($$)	$ 6,674.63	$ 2,463.29	$ 4,889.96		$ 14,027.88
Excess Generation Credits ($$)*	$ 9,137.72	$ 11,326.02	$ 35,559.53		$ 56,023.27
Value of Generation/Avoided Cost ($$)	$ 6,047.86	$ 2,418.83	$ 6,674.41		$ 15,141.10
Above-market cost ($$)	$ 9,764.49	$ 11,370.48	$ 33,775.08		$ **54,910.05**

ABOVE MARKET COSTS –The sum of Reduced Retail Sales and Excess Generation Credits less the value of avoided costs.

ADMIN and BILLING COSTS – HPE administrative and billing costs have not been requested by the PSD and are significant additional costs to ratepayers.

III. RECOMMENDATIONS TO THE APPLICANT FOR RESOLUTION

OPTION 1

- Wait for the planned upgrades to HPE's system, discussed below, to be placed in service.

- The DPS advised HPE that, in light of COVID related impacts, HPE could now expect substation planning, funding approvals and renovation / construction to require five years from start to finish. Details are found in the 2019 Integrated Resources Plan filed with the DPS. This plan is available for review online https://www.villageofhydepark.com/utilities.

- HPE's consulting engineers advise HPE that protection and controls installed to make-ready new net-metering between now and then will be rendered useless at the time that substation work is accomplished.

- If protection and control is installed to accommodate the NMR in this docket, or any others, the used and useful life of these assets would likely be less than five years, and the period for depreciation would not allow full cost recovery because these protection and controls will be abandoned upon installation of the new proposed substation.

- Thus, the recovery of the associated assets would become stranded costs to HPE's customers at the time the new substation is placed in service.

OPTION 2

Step 1.

- In accordance with the terms and conditions of this section, and pursuant to PUC Rules 5.100 and 5.500, HPE will hire the professional engineering firm Control Point Technologies to perform a preliminary engineering review of the utility system and an initial feasibility report of potential impacts to the system with the additional kW. Control Point expects this work for Step 1. to require thirty (30) days from contract signing.

- HPE will contract Control Point Technologies within 5 (five) business days after HPE receives a $5000.00 deposit from the NMR applicant for Control Point's study. In the event that Control Point charges for Step 1. exceed $5,000, the applicant must pay HPE in full before advancement. The applicant will receive this preliminary report within ten (ten) business days following receipt by HPE of all amounts due for Step 1. Should the study cost less than $5000.00, a refund shall be made to the NMR applicant, or at applicants' direction, credited toward costs for Step 2 below.

Step 2.

- In accordance with the terms and conditions of this section, HPE will hire the professional engineering firm Control Point Technologies to perform a System Impact Study based on the findings in Step 1. Control Point expects this work to require a minimum of forty-five (45) days after contract signing.

- A System Impact Study takes a deeper look into HPE's distribution system up to the high side terminals of the substation transformer. As a part of this study, Control Point would determine maximum backfeed potential onto the transmission system and notify GMP (an affected system) of this potential.

- Control Point Technologies, Senior Manager, System Planning provided a rough estimate of $7,500 for the work in Step 2., noting that the actual cost of Step. 2 could be greater based on findings in

Step 1. Control Point will determine the amount of the down-payment to be received by HPE prior to start of work.

- The System Impact Study does not include work with GMP other than providing notification of the maximum backfeed potential onto the transmission system.

- If the Step 2. Control Point final bill is less than $7,500, the difference will be refunded if the applicant decides to not advance, or applied to the applicant's cost for Step 3. if the applicant decides to advance. In the event that Control Point charges exceed $7,500, the applicant must pay HPE in full before advancement. The applicant will receive this report within ten (10) business days following receipt by HPE of all amounts due.

Step 3.

- As an affected system, GMP would determine to what level of study, or if further study is required on their system, and any GMP billed cost related to this application are borne by the applicant. HPE is unable to provide details about the GMP processes.

- In the event that GMP requires Control Point Technologies to provide additional time toward this application, that cost is borne by the applicant. To advance, a non-refundable amount must be paid by the applicant, and a refund in the event that Control Point final charges are less than the amounts advanced and paid by the applicant. If Control Point final charges exceed the non-refundable amount, the applicant must pay these charges to HPE prior to interconnection.

OPTION 3

- The NMR Applicant can install the proposed PV solar array at the proposed location so long as it is fitted with an inverter that would prevent any back-feed to the HPE System. Under this option, the customer would not be eligible for net metering credits, however, the customer would receive the benefit of solar generation to offset the load associated with their home.

- To increase the benefits of solar generation, although at further cost to the applicant, batteries are available to store excess generation at the homesite, and dispatch this energy to better match the load profile of the customer.

HPE believes that we have provided information to demonstrate that the interconnection of this net-metering system should not be advanced without further distribution system study. We appreciate your consideration of our letter of objection.

Sincerely,

Carol Robertson

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