From:	Olivia Campbell Andersen
To:	Stevens, Melissa; Castonguay, Josh
Cc:	Burke, Dan; rfoster@veic.org; PUC - Clerk; McNamara, Ed; Michael Lazorchak
Subject:	Re: FW: Resilient Home Filing
Date:	Tuesday, May 07, 2019 3:54:14 PM
Attachments:	REV Comments to GMP Powerwall Meter Pilot 5-7-2019.pdf

Dear Josh and all,

Thank you for the notice, open dialogue and conversation with REV on this pilot. Please find attached REV's comments for the record. I understand that GMP is considering revisions or clarifications to the filing to address some of these concerns. We look forward to receiving those and continued collaboration.

Best,
Olivia

Olivia Campbell Andersen
Renewable Energy Vermont | Executive Director

802-595-5373 | olivia@revermont.org
www.revermont.org | @RE_Vermont

REV & our members are hiring!
Join the clean energy revolution --> www.revermont.org/resources/jobs/

On Mon, Apr 29, 2019 at 4:49 PM Stevens, Melissa <Melissa.Stevens@greenmountainpower.com> wrote:

> Good afternoon. The attached filing was submitted to the Public Utility Commission this afternoon. Thank you, and please let me know if you have any questions.
>
> Melissa Stevens
>
> Green Mountain Power
>
> 2152 Post Road
>
> Rutland VT 05701
>
> (802)770-3254

May 7, 2019

Josh Castonguay
Green Mountain Power
163 Acorn Lane
Colchester, VT 05446

Re: GMP – Resilient Home Innovative Pilot

Dear Mr. Castonguay:

Renewable Energy Vermont ("REV") appreciates the opportunity to comment on GMP's proposed Resilient Home Innovative Pilot Program ("Pilot"). REV agrees that leveraging current and emerging technologies is crucial to cutting carbon emissions from energy use. REV also agrees that simplifying the customer's experience will lead to a more transparent, resilient, and reliable electric service. Given that in the future, it is anticipated that the most cost effective and decarbonized homes and buildings will rely exclusively or primarily on distributed local renewable electricity and community-based micro-grids, REV applauds GMP's proposal to pilot innovative new technology to provide both a metering and whole building energy storage solutions, particularly for new construction or homes/buildings in need of a new meter.

While REV supports the pilot's goal to make it easy for customers to utilize new technologies and energy innovation such as energy storage batteries that provide metering capability, we are concerned that the pilot unintentionally limits current and future customer choices. These concerns and ideas for mitigation are outlined below.

A. Pilot fails to utilize other whole home battery devices

Vermont's robust distributed electricity generation sector is well suited to provide commercial and residential customers with technologically advanced, cost efficient, and reliable sources of power. However, GMP Resilient Home Innovative Pilot overly relies on the Tesla Powerwall 2.0 system, which fails to take advantage of this sector and does not create a fair, transparent, and technologically robust pilot program.

This program effectively endorses the Tesla Powerwall 2.0 as the preferred battery technology without attempting to explore, evaluate, or discuss the technical capabilities of the system and the externalities associated with it. Limiting the pilot to a single product adversely impacts market participation, and quells consumer choice by limiting information sharing between installers, manufactures, and the utility. This distorts the market by excluding other similar products that

are available to Vermonters and sets unrealistic expectations among consumers related to the system costs and benefits as technologies continue to emerge in this field.

For example, sonnen is an advanced residential battery technology with installations across Vermont and well-known to GMP. Sonnen's products offer whole-home battery storage capabilities, which include back-up power capabilities, integrated metering for usage information, and grid ready distributed infrastructure. Furthermore, sonnen's increased footprint in Vermont is founded on sonnen's signature local collaboration and well-established relationships with developers and builders on Vermont based new build and retrofit projects, also known as "sonnenCommunity" projects.

REV asks GMP to amend the proposed pilot so that there is a clear and timely process to allow any residential Energy Storage System (ESS) vendor with similar capabilities to the Tesla Powerwall 2.0 to participate in this pilot and for customers installing alternative products to receive equal bill credit or compensation for the system's value/benefits that GMP applies to the Powerwall. The pilot could also incent closed energy storage systems, which can provide a greater benefit to a participating customer.

B. Transparency and Subscription Rates in the Pilot Program

Under the Bring Your Own Device I and II pilot programs, GMP offers a fixed monthly "lease" payment of $15 per Powerwall. GMP owned the battery and allowed Tesla's GridLogic software to manage the fleet of batteries for capacity reductions. This offered the customer the benefit of a backup power system in case of an outage. Unfortunately, GMP has not presented the results from its first Powerwall pilot program, or the battery performance for peak capacity period reductions. The purpose of the short duration pilots is to learn from the experience in order to enhance performance and participation.

Unfortunately in this proposed pilot, it appears that GMP is continuing a variation of the existing Tesla Powerwall pilots and accessing a new feature of metering. Knowing the lifecycle impacts of the additional battery cycling undertaken or proposed, and the performance of the GridLogic software, is important to understanding the benefits to participating and non-participating ratepayers. This information creates a more robust and transparent program for GMP ratepayers and Vermonters.

REV requests that GMP provide a clear explanation of how it arrived at the proposed $30/month subscription and file documentation to verify and support those figures. Other local businesses and REV members in Vermont currently sell and install home storage battery systems. Based on the limited information that GMP

has provided, it appears that GMP is selling the Telsa Powerwall 2.0 at 25% of the current market rate. This means that existing providers cannot fairly compete with GMP's under market pricing or participate in this pilot or the GMP BYOD program. The pilot as proposed furthers an unfair market advantage for GMP and Tesla.

In effect, other products such as Fortress Power, Humless Reliable Power Systems, sonnen, and LG Chem RECU are inhibited or unintentionally excluded from the Vermont market. These companies produce products that are immediately deployable and ready for grid, solar, and wind charging. These products offer more efficient, and more socially and economically responsible options for Vermonters. For example, the Humless Home 6.5 house battery bank features a 3 kW inverter, charge controller, battery management system (with software for peak load shifting), and has the ability to incorporate net metering.

Also, companies, like sonnen offer an ESS product that consists of Lithium Iron Phosphate ("LFP") cell chemistry, which, for a residential application, is a safer, more efficient, reliable, environmentally friendly, and socially responsible battery technology. Sonnen manufactures a whole home battery system that can store and dispatch up to 100 % of a household backup needs and grid-ready DERs. Sonnen's residential ESS integrate with all common heat pumps and cogeneration units described in GMP's pilot. They offer 10,000 charge cycles or 10 years, or more, depending on the type of ESS used. Sonnen has experience integrating its hardware and software with GMP's system and through its proprietary Virtual Power Plant (VPP) software is equally capable to GridLogic to achieve GMP's stated goals for grid services in this pilot. Also, sonnen has worked on an integrated utility revenue grade meter which will be incorporated in sonnen ESS for this pilot.

The chemistry of the LFP batteries is stable and provides a competitive alternative to Li-ion technology. Further LFP whole home battery storage technologies are sold and marketed by locally owned and operated Vermont business that sell directly to local Vermonters. This creates healthy competition within the sector and accountability to customers.

Energy storage products and services exist in the competitive marketplace. REV is concerned that GMP's exclusive utilization of the Tesla Powerwall for this pilot inappropriately provides that product with a competitive advantage. We request that the pilot be amended to allow for other existing products with similar capability such as the sonnen residential ESS or future products likely to come onto the market during this pilot's 18 month time period.

Under the proposed Resilient Home Innovative Pilot program described by GMP, there is no clear explanation of the accounting explaining the subscription rates. The pilot filing and any subsequent tariff filing should include information showing

if the modeling used to determine the rates where applied to other whole home battery technologies. This will help inform how other technologies compare to the Tesla Powerwall 2.0. REV further recommends enabling all BYOD eligible battery customers access to the subscription rates portion of this pilot.

REV's concern is that GMP's subscription service lacks competitive service offerings, lacks transparency, impedes customer choice and participation, picks a technology that is less efficient than other available technologies, and creates a subsidized program that masks the true costs of available technologies that will skew consumer perceptions and unnecessarily delay buildout of this battery storage technology.

C. Customer Protections

Under this pilot, customers who participate in this pilot assume the technology risk without fully understanding there are other technologies available to them. Similarly, ratepayers are exposed to the costs associated with GMP subsidizing this pilot.

It also appears that the PUC has broad authority under 30 VSA 218 to investigate rates, tolls, charges or schedules to determine if they are unjust, unreasonable, insufficient, unjustly discriminatory, or are preferential. The pilot as proposed clearly creates preferential treatment for both GMP and Tesla. Further REV is concerned that by continuing the Powerwall pilot, due the market impressions, GMP's proposal unintentionally undermines the effectiveness of the newly revised BYOD 2.0 existing pilot in effect.

GMP's pilot filing starts a 15-day notice period. However, the PUC has not provided clarity regarding what happens if someone raises concerns during this time period.

Some REV members with customers who currently participate in GMP's Powerwall pilot or the BYOD pilot report that customers have experienced more frequent and more significant drawdowns / utilization of their batteries by GMP than the customer was noticed or anticipated. Customer's batteries may have been drawn down / utilized below manufacturer's recommendations, which poses a risk to participating customers investments and the life of the battery. REV suspects that these instances are unintentional and due to trial and error of using new technology and software or data interconnections. The proposed pilot should incorporate customer protections as to the level at which GMP will utilize a customer battery. One option could be for a penalty to be imposed if GMP causes an excessive draw down a customer's battery.

D. Conclusion

In summary, below are REV's recommendations regarding this pilot:

- Provide participating BYOD customers with the same compensation or credit as GMP offers its own Powerwall customers. Currently REV understands that BYOD customers value is based on 10 years while GMP's Powerwall customers value is based on 15 years which is greater.
- If GMP plans to use the additional Powerwall batteries more and thus create greater financial value for GMP, the grid, and other non-participating customers, then GMP should also offer that option to BYOD customers.
- Amend the pilot to establish a clear process and timeline for other products with similar technological capabilities to participate in this pilot.
- Enable closed storage systems that rely exclusively on a customer's self-generated local renewable electricity to recharge the battery to participate and receive credit for the metering component of this pilot.
- Allow all batteries eligible for the BYOD to participate in the subscription portion of the pilot.
- GMP should commit to file a tariff within 3 months should GMP decide to continue to expand its offerings of the Tesla Powerwall.
- GMP must equally promote both the GMP Powerwall offering and the non-GMP / competitive 3rd party offering.
- Establish participating customer protections.

Again, REV appreciates the opportunity to collaborate with GMP and provide these comments in advance of the proposed pilot's implementation.

Sincerely,

Olivia Campbell Andersen
Executive Director
olivia@revermont.org

cc: Daniel Burke, Vermont Department Public Service
Rebecca Foster, Efficiency Vermont
Judith Whitney, Vermont Public Utility Commission