

## **GMP – Non-Tariffed Alternative Proposal for Innovative Pilots**

### **Eligibility:**

The Non-Tariffed Alternative shall be available for pilot programs involving products or services, beyond the sale of basic electric service, that provide shared access to Green Mountain Power (“GMP”), comply with the Renewable Energy Standard required resource category as outlined in 30 V.S.A. 8005(a)(3) (“Tier III”) and advance achieving the goals of Vermont’s Comprehensive Energy Plan of meeting 90% of energy supply with renewable resources by 2050 and reducing fossil fuel consumption and reducing greenhouse gas emissions 75% below 1990 levels by 2050 (“Innovative Pilots”).

### **Proposal:**

#### *New Innovative Pilots*

GMP shall file 15 days’ advance notice with the Department of Public Service (“Department”) and the Public Utility Commission (“Commission”), with a copy to Efficiency Vermont, before commencing pilot programs to provide the products or services referenced above.<sup>1</sup> The notice shall include a narrative explanation of the Innovative Pilot and how it is consistent with the eligibility requirements, the number of customers it will be made available to and how those eligible customers were selected, expected costs and revenues, why the proposal does not conflict with work performed by Efficiency Vermont, a certification that GMP has collaborated with Efficiency Vermont regarding the proposal in advance of the filing, and the frequency by which GMP shall provide status reports to the Commission and Department on the Innovative Pilot’s progress which shall not be less than six months.

All Innovative Pilots shall be implemented consistently with terms set forth in GMP’s Memorandum Detailing Changes to Innovative Pilot, dated December 7, 2016 and filed in Docket No. 8794 and the Data Collection and Reporting Plan and Form filed in Case No. 17-3232-PET.

#### *Amendments to Terms and Conditions of Innovative Pilots*

GMP shall file 7 days’ advance notice of changes to Innovative Pilots’ pricing, terms, or conditions with the Department, Efficiency Vermont, and the Commission. GMP shall also provide written notice of all such changes to affected participating customers.

#### *On-Going Review of Innovative Pilots*

Any Annual Rate Base filing during the term of the Multi-Year Plan in which GMP seeks to reflect the costs and revenues of Innovative Pilots developed under this Plan that are not already included in rates at the start of the Plan shall include a schedule setting forth the costs and revenues of all Innovative Pilots offered as well as known and measurable information supporting the addition to rate base and shall be subject to Department review and Commission approval.

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<sup>1</sup> The term of any New Innovative Pilot is limited to eighteen months.

STATE OF VERMONT  
PUBLIC SERVICE BOARD

Docket No. 8794

In re: Tariff filing of Green Mountain Power                     )  
Corporation requesting approval of innovative                     )  
products tariff riders, to take effect on a service-                     )  
rendered basis September 4, 2016   )

**MEMORANDUM DETAILING CHANGES TO INNOVATIVE PILOT**

The purpose of this Memorandum is to memorialize feedback provided by the Vermont Department of Public Service (“Department”) and other stakeholders that will be incorporated into the new Pilot through which Green Mountain Power (“GMP”) will be administering innovative programs that are the subject of this Docket through September 30, 2017. In summary, (with further detail to follow in this Memorandum), these changes are as follows:

1. GMP will revise the Retail Installment Contracts with customers for our heat pumps and heat pump water heaters (previously referred to as the “Participation Agreements”) with additional financial disclosures under the Truth in Lending Act (“TILA”) as well as additional customer disclosures suggested by the Department of Public Service. The revised Retail Installment Contracts are attached as **Exhibits GMP-1** and **GMP-2**;
2. GMP will commit to filing an open access billing tariff prior to September 2017, which will enable third parties providing products and services similar to those provided by GMP to use the GMP bill under terms similar to GMP’s use of the bill for innovative products and services;
3. GMP will commit to filing a tariff in September 2017 to allow for peak shaving savings sharing resulting from use of controlled heat pumps and heat pump water heaters (whether owned by GMP or others) subject to full implementation of appropriate technology that allows us to control the heat pumps and dispatch them during peak events;
4. GMP will track costs associated with the Innovative Services for which approval is sought in this proceeding, based on the standard described below; and
5. GMP will update the savings sharing calculator used online and the one used during home visits so that both tools reflect projected increased electricity usage associated with the projected level of heat pump usage and the attributes of the building, including size and amount of open space.

## **1. Detail Around The Retail Installment Contract**

The agreements have been revised to include disclosures under TILA and additional disclosures suggested by the Department. The revisions to the Retail Installment Contracts clarify that they are retail installment contracts, making clear that while GMP owns the equipment until the final payment of the term, the customer is the owner of the Heat Pump or Heat Pump Water Heater at the end of the term. Because they are retail installment contracts, GMP has included the appropriate consumer disclosures required by state and federal law, including TILA. These disclosures relate most particularly to the financial terms and are disclosed in a manner to assist the customer in comparing products in the marketplace. GMP also has added a number of provisions suggested by the Department designed to highlight how use of a heat pump might change a customer's energy usage, including possible savings. Finally, GMP has added language clarifying that a customer may cancel this agreement prior to installation of the heat pump without financial obligation.

Copies of the updated Retail Installment Contracts are attached as **Exhibits GMP-1 and GMP-2**.

## **2. Open Access Billing Tariff For Third Parties**

GMP offers on-bill services for low interest energy improvement loans provided by the Vermont Economic Development Authority ("VEDA") and Neighborworks of Western Vermont ("NWWVT"), enabling GMP customers to attain the benefits of heat pumps and heat pump water heaters, weatherization, and other opportunities to reduce their carbon footprint and be more comfortable in their homes. If a GMP customer requests it, the customer's VEDA or NWWVT loan may be billed on his or her GMP energy statement.

GMP will file an Open Access Billing Tariff for third parties that will provide specific criteria in the tariff as to the types of services and providers, as well as describing particulars of the billing arrangements. For example, the tariff will provide that customer payments will first be allocated to electric service and then to the loans, that disconnection of electric service will not occur for failure to pay for third party charges and that the cost for billing services will be the same for third parties as it is for GMP. The billing will be available to entities offering

weatherization and products and services similar to those provided by GMP to use under terms similar to GMP's use of the bill for innovative products and services.

### **3. Tariff for Sharing Peak Savings**

GMP will file a tariff for sharing savings for peak shaving when GMP completes testing of technology to control heat pump and heat pump water heaters and fully implements this technology in the field.

GMP is actively investigating controlling heat pumps, using Sensibo and Tado controllers, to explore the potential for shared stacked benefits of electric savings with customers, more convenient temperature adjustments, and reduced grid stress during peak times.

GMP is currently working with approximately 30 heat pump customers to test the functionality of a third party heat pump control system, in order to determine if it can be used effectively for reducing load control. GMP has also deployed approximately 70 additional heat pump control units and will have a total of approximately 100 heat pumps with shared controls during the upcoming heating season.

In addition, GMP will be gathering consumption data on selected heat pumps throughout the winter to determine savings due to load control.

The tariff will specify, among other things, the terms and conditions for controlling the heat pumps and heat pump water heaters and the methodology for sharing savings.

In addition, and in order to address concerns raised by the Department regarding GMP competing in the market for heat pumps and heat pump water heaters, the tariff will be available to all owners of heat pumps and heat pump water heaters, regardless of whether the customer purchased the product from GMP or another seller. GMP intends to work closely with the Department as it develops this tariff.

### **4. Tracking Of Costs Associated With Innovative Programs**

GMP uses separate project numbers for each product. Tasks can be assigned within each project number. Each type of expense will be assigned a Task so that all direct project expenses can be tracked accordingly. Please see the example in the table below.

PROJECT TYPE	PROJECT NAME	PROJECT NUMBER	PROJECT TASK	DESCRIPTION
Capital	Heat Pumps	152044	ADD	External labor costs and equipment costs associated with new installations
Capital	Heat Pumps	152044	RET	External labor costs associated with retiring units
Expense	Heat Pumps	142831	MAINT	External labor costs associated with annual maintenance
Expense	Heat Pumps	142831	SERV	External labor costs and equipment costs associated with servicing units
Expense	Heat Pump	142831	PAYROLL	GMP labor costs associated with operating the program
Capital	Heat Pump Water Heaters	152046	ADD	External labor costs and equipment costs associated with new installations
Capital	Heat Pump Water Heaters	152046	RET	External labor costs associated with retiring units
Expense	Heat Pump Water Heaters	142832	MAINT	External labor costs associated with annual maintenance
Expense	Heat Pump Water Heaters	142832	SERV	External labor costs and equipment costs associated with servicing units
Expense	Heat Pump Water Heaters	142832	PAYROLL	GMP labor costs associated with operating the program

The expense labeled “PAYROLL” above represents GMP’s commitment to track all direct costs associated with running the program (including direct expenses such as marketing materials, advertising etc.).

For customer default expenses, GMP will restructure how bad debt is accounted for in the current billing system so that bad debt associated with CCHP and Heat Pump Water Heaters are separate from traditional bad debt from non-payment for electric service.

## **5. Revisions GMP Will Make To Its CCHP Savings Estimation Tools**

GMP is making three revisions to its savings estimation tools to align its tools with the October 2016 measure characterization from the Technical Advisory Group (“TAG”).

1. Heating season estimate.
2. Cooling season estimate.
3. Net dollar saving estimate.

GMP is basing the increased kWh/year during the heating season on the customer’s reported fossil fuel usage and the TAG’s “fossil fuel offset limit.” Specifically, GMP is no longer using subjective assessments of the home’s layout, square footage, and air leakage rates to

determine the potential savings. Instead, GMP is basing the energy savings estimate on the customer's reported fossil fuel usage, the size of the CCHP that is being installed, and the same fossil "fuel offset limit" (85%) that TAG used in its measure characterizations for the technology. **Exhibit GMP-3** contains an example of GMP's revisions to its spreadsheet-based estimation tool.

GMP is basing the increased kWh/year during the cooling season on the TAG's estimate of summer kWh usage. Since many customers are already using window air-conditioners, GMP considers these estimates to be conservative; most customers will likely use less than this amount. These estimates are shown in **Exhibit GMP-3**.

GMP is basing its dollar savings estimate not only on the fossil fuel savings that are expected during the heating season, but also on the increased cost of electricity during the cooling season and the customer's lease payment.

GMP will also revise its online estimation tool to match its spreadsheet-based estimation tool. GMP will not include the TAG's weatherization adjuster, controls adjuster, or free ridership/spillover factors in its estimation tools until they are validated by evaluations.

## **6. Other**

GMP also has committed to work with the Department and VEIC to develop educational material identifying the various options available for the purchase or lease of a heat pump or heat pump water heater.

Additionally, GMP will be sending reminders to its heat pump and heat pump water heater customers regarding their obligations when selling a house and periodic messages on optimal use of the heat pump.

## **Green Mountain Power Innovative Pilots**

### **Data Collection And Reporting Plan**

The following is Green Mountain Power's Data Collection and Reporting Plan for its Innovative Pilot projects.

Green Mountain Power's Temporary Limited Interim Regulation Plan<sup>1</sup> allows Green Mountain Power ("GMP") to offer "Innovative Pilot" programs involving products and services as outlined in Attachment 1 of the Regulation Plan. These Innovative Pilot programs are designed to serve customers, help GMP meet the Renewable Energy Standard's ("RES") required resource category as outlined in 30 V.S.A. 8005(a)(3) ("Tier III"), advance the goals of Vermont's Comprehensive Energy Plan to meet 90% of energy supply with renewable resources by 2050, reduce fossil fuel consumption, and reduce greenhouse gas emissions 75% below 1990 levels by 2050. In order to assess whether a Pilot should be advanced into a mature program, GMP will collect data and report to the Department of Public Service ("DPS" or "Department") and the Public Utility Commission ("Commission") as provided in this Data Collection and Reporting Plan ("Plan").

#### **I. Commencement of Pilot**

- A. As provided in Attachment 1, GMP will provide 15 days' advance notice of its intent to file a Pilot. The notice shall include a narrative explanation of the Innovative Pilot and explain how the Pilot is consistent with Tier III of the RES, how it advances the goals of Vermont's Comprehensive Energy Plan, the number of customers to whom it will be made available, how those eligible customers were selected, expected costs and revenues, why the proposal does not conflict with work performed by Efficiency Vermont, a certification that GMP has collaborated with Efficiency Vermont regarding the proposal in advance of the filing, and the frequency by which GMP shall provide status reports to the Commission and Department on the Innovative Pilot's progress.
- B. All Innovative Pilots shall be implemented consistently with terms set forth in GMP's Memorandum Detailing Changes to Innovative Pilot, dated December 7, 2016 and filed in Docket No. 8794.

#### **II. Status Reports**

- A. GMP shall file with the Commission, copying the Department, semi-annual reports of the status of the Pilot. The reports shall be submitted thirty days after each six-month interval. The reports shall provide the following information:
  - i. Narrative explanation of the Pilot and why it is important.
  - ii. Customer participation in the Pilot including the number of products or units, number of customers enrolled, and the distribution of the product by county/town.

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<sup>1</sup> Green Mountain Power's Temporary Interim Regulation Plan was approved in Docket No. 17-3232-PET on November 29, 2017.

- iii. Financial information regarding the costs and revenues (equipment revenue, additional kWh margin, O&M maintenance, O&M service, depreciation, return on rate base, and net gain or loss).
- iv. Load control device saturation information including whether the product is controlled by GMP for peak shaving purposes, and if so, the number of units controlled, the control device, the response rate, and capacity available in kilowatt hours.
- v. Narrative explanation of how the Pilot is advancing the goals of Vermont's Comprehensive Energy Plan and Tier III of the RES.
- vi. Next steps.

### **III. Customer Satisfaction Measurement**

In addition to regular customer contact, after the Pilot has been in operation for one year GMP shall measure participating customers' satisfaction with the Pilot. The survey should include an assessment of whether the customers' needs/goals were met by the product or service provided in the Pilot. GMP shall work with the Department on appropriate measurements for each Pilot.

### **IV. Final Report**

- A. Sixty days after the end of the eighteen-month pilot, GMP shall file with the Commission, copying the Department, a final report on the Pilot. The report shall include the following information:
  - i. Narrative explanation of the Pilot and why it is important.
  - ii. Customer participation in the Pilot including the number of products or units, number of customers enrolled, and the distribution of the product by county/town.
  - iii. Financial information regarding the costs and revenues (equipment revenue, additional kWh margin, O&M maintenance, O&M service, depreciation, return on rate base, and net gain or loss).
  - iv. Load control device saturation information including whether the product is controlled by GMP for peak shaving purposes and if so, the number of units controlled, the control device, the response rate and capacity available in kilowatt hours.
  - v. Narrative explanation of how the Pilot advanced the goals of Vermont's Comprehensive Energy Plan and Tier III of the RES.
  - vi. Assessment of customer satisfaction.
  - vii. Lessons learned during the Pilot.
  - viii. Whether the Pilot will be advanced to a tariff-based offering, and if so, why.
  - ix. If the Pilot will not be advanced to a tariff-based offering, the reasons why not.





Date

Mrs. Judith Whitney, Clerk  
VERMONT PUBLIC UTILITY COMMISSION  
Peoples United Bank Building, 4<sup>th</sup> Floor  
112 State Street  
Montpelier, VT 05620-2701

Re: Innovative Pilot [**INSERT NAME OF PILOT**]  
Final Report

Dear Mrs. Whitney:

Green Mountain Power (“GMP”) provides this Final Report (“Report”) pursuant to Attachment 1 of GMP’s Temporary Limited Interim Regulation Plan. This Report covers the period from the commencement of the Pilot on [**INSERT DATE**] to the completion of the Pilot on [**INSERT DATE**].

**Explanation Of [**INSERT NAME OF PILOT**] And Why It Is Important**

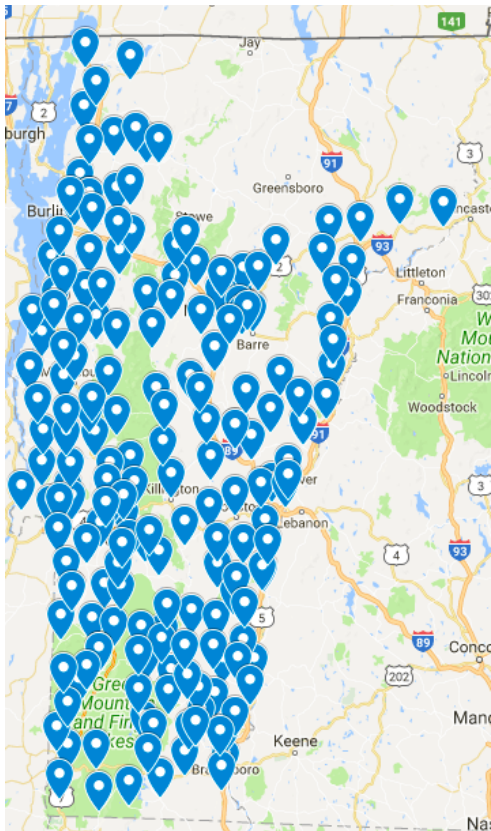
[**NARRATIVE EXPLANATION**]

**Participation in Pilot**

[**NARRATIVE EXPLANATION - include the number of products or units, number of customers enrolled and the distribution of the product by county/town**]

Below is a map illustrating the distribution of the GMP [**INSERT NAME OF PRODCUT**] in customer homes throughout our territory:

[**INSERT MAP (sample below)**]



**Final Pilot Financials**

[NARRATIVE EXPLANATION OF FINANCIALS AND INCLUDE FINANCIAL CHART – sample below]

PILOT NAME	CY__ Actuals
Cumulative Installs	
CY ____ Installs	
Equip Revenue	\$
Add'l kwh Margin	\$
O&M Maintenance	\$
O&M Service	\$
Depreciation	\$
Return on Rate Base	\$
Other	\$
Net Gain/Loss	\$

**Load Control Device Saturation**

[NARRATIVE EXPLANATION]

The graphic below provides an update of customer engagement in these programs:

[SAMPLE GRAPHIC BELOW]

GMP Controls Deployment – Currently Deployed/Deploying AS OF December 31, 2017

	Control Product	Device Controlled	Units Installed	Units Controlled	Response Rate	Capacity Available (kWh)		Add'l Under Contract
CURRENTLY DEPLOYED	Powerwall 1.0	Battery Storage	20	20	85%	134	Difficulty with SolarEdge inverter in past. Currently working efficiently the majority of the time. No longer deploying PW1 in favor of the PW2.	
	2016 Sonnen ECO	Battery Storage	10	10	90%	86	Batteries installed in McKnight Lane Mobile Home Replacement project.	
	Aquanta	Electric Resistance Water Heater	63	63	%	na	Currently available for all Rate 1 traditional water heaters in GMP territory.	36
	SunVerge	Battery Storage	1	1	0%	8	Installed test unit at Farm & Wilderness. Testing functional capabilities of system.	
	2017 Sensibo Sky	Cold Climate Heat Pump	173	115	88%	na	Currently available for all heat pumps in GMP territory, not just GMP program heat pumps.	315
	Powerwall 2.0	Battery Storage	90	90	93%	1125	Currently deploying.	245
	L2 EV Charger	In-home EV Charger	34	34	100%	na	Currently deploying.	40
	TOTALS		391	333		1353		636

**The [INSERT NAME OF PILOT] Pilot Advances the Goals of the Vermont Comprehensive Energy Plan and Tier III of the Renewable Energy Standard**

[NARRATIVE EXPLANATION OF LOAD CONTROL SATURATION]

**Assessment of Customer Satisfaction**

[NARRATIVE EXPLANATION OF RESULTS OF CUSTOMER SATISFACTION SURVEY INCLUDING ASSESSMENT OF WHETHER THE CUSTOMERS' NEEDS/GOALS WERE MET BY THE PILOT]

**Lessons Learned**

[NARRATIVE EXPLANATION OF LESSONS LEARNED]

**The Pilot Will/Will Not Be Advanced To A Tariff-based Offering**

[NARRATIVE EXPLANATION OF WHETHER PILOT WILL BE ADVANCED TO  
TARIFF-BASED OFFERING AND WHY OR WHY NOT]

**Conclusion**

cc: Service List