Utility Co. Inc.

Virtual Power Plant Program

VPP PROGRAM
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VIRTUAL POWER PLANT PROGRAM

I. GENERAL TERMS AND CONDITIONS

A. PROGRAM SUMMARY

The [Virtual Power Plant program / branded program name] ("Program") compensates participants for the use of customer-sited distributed energy resources (DERs) to support the operation of the electric grid. Customers enroll and participate through DER Managers, which include original equipment manufacturer (OEM), third party owners (TPO) of DERs, and other non-utility entities that enable the operation and participation of DERs in the Program.

The Program framework enables participation of multiple technologies pursuant to the unique operational characteristics of each technology. Program participation terms are defined in the respective riders for each eligible technology. The tariff currently provides participation riders for stationary battery storage, smart thermostats, and electric vehicles. Additional technologies may be added as they become available.

B. DEFINITIONS

The following terms and definitions apply to the Program unless otherwise specified.

Battery – a behind-the-meter stationary energy storage device and associated inverter and related equipment.

Bidirectional Charging – refers to the ability of the EV or EVSE to draw power from the grid or onsite solar to charge the EV battery and the ability to discharge energy from the EV battery to supply load in the connected home or building and export power to the grid.

Bidirectional Charging System – the EV and or EVSE grid interactive system inverters that enables Bidirectional Charging through operation in either (i) bidirectional mode in parallel with the grid or (ii) exclusively when islanded from the grid.

[Commission – Public Utilities Commission or other applicable state agency that regulates electric utilities].

Company – [Name of utility company].

Customer – an electric service account holder of the Company.

Customer Portal – the mobile app or web portal maintained by DER Managers, the Company or an Edge-DERMS provider through which Customers may enroll, receive Event notifications and other program communications, and manage participation preferences.

Distributed Energy Resource (DER) – a Customer or third party-owned resource that is capable of generating, storing or discharging electricity and/or modifying the timing or amount of electricity the host-Customer consumes from the grid.

DER Manager – An OEM, TPO or other non-utility entity that coordinates the participation of a group of DERs in the Program.

Edge-Distributed Energy Management System (Edge-DERMS) – a software platform capable of communicating, optimizing and facilitating the participation of DERs to provide Grid Services.

Environmental Justice Community – [As defined by applicable state or insert federal definition].

Electric Vehicle (EV) – a car, truck, bus or other mobile unit that utilizes electric power stored in an onboard battery for propulsion, including the charger and related electric vehicle supply equipment (EVSE). As used herein, EVs include battery electric vehicles ("BEV") and plug-in hybrid electric vehicles ("PHEV") unless otherwise specified.

Emergency Event – an Event called in response to an unanticipated grid condition for which the Company provides notification within a defined time period as described in respective technology riders.

Event – collectively refers to an Emergency Event or a Planned Event.

Event Window – the time period over which an Event can occur.

Grid Service – a capacity, energy, or ancillary service that helps to balance, stabilize or otherwise support the operation of the electric grid.

Interconnection Tariff – the document governing the technical requirements, export rates, operating parameters, and other terms for interconnecting and operating Customer-sited DERs in parallel with the Company's distribution system.

Income Qualified Customer – [insert definition for applicable jurisdiction]

Interconnection Agreement – the agreement detailing the terms and conditions for interconnecting and operating a distributed energy resource.

Load Build – refers to (1) an increase in grid served load from customer-sited DERs, or (2) the use of customer-sited DERs to absorb energy from co-located renewable energy generating systems to reduce the amount of customer-sited generation exported to the grid.

Load Relief – refers to (1) a reduction in the amount of host-customer load served by the grid from use of a customer-sited DER, or (2) the export of power to the grid from a customer-sited DER.

Managed Charging – Controls the time and rate at which the EV or EVSE draws power from the grid or onsite solar to charge the EV battery.

Original Equipment Manufacturer (OEM) – the manufacturer of a particular DER, including but not limited to Batteries, Smart Thermostats, and Electric Vehicles.

Planned Event – an Event called in response to a forecasted grid condition for which the Company provides notice and dispatch instructions within a defined time period as described in respective technology riders.

Smart Thermostat – a Wi-Fi enabled device capable of automatically adjusting heating and cooling temperature settings in a building.

System Owner – the person or entity that owns the subject distributed energy resource.

Reporting Period – the [monthly/quarterly/bi-annual/annual] calendar period over which DER performance is measured and reported to the Company to calculate performance payments.

Third Party Data Recipient – any person or entity authorized by the Customer to receive the Customer's data that is not the Customer, the data provider, or the data provider's agent.

Third-Party Owner (TPO) – an entity other than the Customer or the Company that owns a distributed energy resource.

Vehicle to Grid – refers to the discharge of energy stored in an EV battery to serve host-customer load and/or export additional power to the grid.

C. CUSTOMER AND DEVICE ELIGIBILITY

1. *Customers*

Customers on rate schedules [list eligible rate schedules] with an active electric service account and an eligible DER may enroll through an approved DER Manager. A Customer may enroll multiple eligible DERs.

2. *DERs*

New and existing customer-owned or third-party owned customer-sited DERs manufactured by an approved OEM or participating through an approved DER Manager are eligible to participate. Currently eligible types of DERs are listed in the table below.

DER Type	Eligibility Requirements
Batteries	Customer-sited standalone battery storage and battery storage paired with onsite generation located behind the customer meter.
Smart Thermostats	Smart thermostats, connected to home heating and cooling systems.
Electric Vehicles	EVs in the Company's service territory with associated EVSE, including Bidirectional Charging Systems with an approved interconnection to operate in parallel with the grid.
[*Additional Device Type*]	[*Eligibility Requirements*]

A list of eligible DERs from specific manufacturers is available on the Company's website.

D. ENROLLMENT

Customers enroll through the Customer Portal or DER Managers may auto-enroll Customers. For auto-enrollment, the Customer must have an eligible device and a valid interconnection agreement, as applicable, and the DER Manager must be pre-authorized by the Customer to auto-enroll the Customer in the Program. Auto-enrolled Customers must be notified at the time of enrollment and provided the opportunity to opt-out.

E. GRID SERVICES

This Program currently offers the Dynamic Grid Management service. This service allows the Company to dispatch participating DERs to reduce demand for grid supplied energy (Load Relief) and increase demand for grid supplied energy (Load Build) in response to grid conditions throughout the year.

The Dynamic Grid Management service recognizes that different types of DERs have unique operational capabilities and other characteristics. As such, the Program terms and conditions for how respective technology types provide the Dynamic Grid Management service are detailed in technology specific Riders.

The Company will optimize DER operation to meet different grid needs as they arise. Different types of DERs may be called on separately, at the same time, or in succession to align their respective grid management capabilities with a particular grid need, as determined by the Company pursuant to the Program terms and conditions.

Typical grid needs the Companies may call on the Dynamic Grid Management service to support are summarized below. The Company may add other use cases; however, participating DERs will continue to operate pursuant to the terms and conditions provided in the respective technology Riders provided herein.

Grid Needs Supported by Dynamic Grid Management Service

Use Case	Description
Clean capacity	*DERs are dispatched to reduce utilization of high emission fossil fuel generators.*
Economic dispatch	*DERs are dispatched to reduce reliance on higher cost generation, reduce power delivery costs, and otherwise provide cost effective grid support when compared to other available alternatives.*
Grid optimization	*DERs are dispatched for dynamic load shaping to improve circuit, feeder and system level utilization factors*
Locational capacity	*DERs are dispatched to relieve transmission, distribution and other location-specific grid operating constraints.*
System capacity	*DERs are dispatched to support resource adequacy, reliability and other capacity needs.*

As new Grid Services, in addition to the Dynamic Grid Management service, are approved by the Commission, the Company will update this Program tariff and other relevant Program materials, including its website, with the additional Program terms and conditions.

F. CO-PARTICIPATION WITH OTHER PROGRAMS

Customers may co-participate in any underlying Interconnection Tariff or rate schedule otherwise available to other customers in their same rate class, may provide additional Grid Services under the VPP Program as they become available, and may participate in other grid service programs outside of the VPP Program, including wholesale market programs, except where otherwise prohibited by the [Commission] or another program's rules.

G. DATA ACCESS AND SHARING

Customers may access their energy and other data and manage data sharing with DER Managers or other third parties of their choice through the Company's [Green Button Connect or other] portal. The Company will timely provide all customer related energy data collected by the Company to the Customer and third parties authorized by the Customer in an electronic machine-to-machine method and otherwise conform with Green Button Connect My Data conventions.

H. TERMINATION AND ASSIGNMENT

If a Customer's participation is terminated prior to the conclusion of any applicable rate lock term for performance-based compensation, the Customer must wait one year before

re-enrolling the same DER type in the same Grid Service offering. A Customer may not earn a second enrollment incentive for the same DER type if the Customer un-enrolls a DER and subsequently re-enrolls the same DER type in the Program.

Customers and DER Managers on behalf of their Customers, may assign Program participation to a successor customer of record without termination provided that the subject DER remains at the same physical address.

II. BATTERY RIDER: DYNAMIC GRID MANAGEMENT SERVICE

A. SUMMARY OF SERVICE

Participating Batteries are managed to meet grid needs through the Load Relief and Load Build functions by managing when Batteries charge and discharge to serve host-customer load and export additional power to the grid.

B. ENROLLMENT

Batteries may be enrolled at any time, but may be subject to reduced compensation if enrolled for only part of a Reporting Period or they do not participate in one or more Events over the course of the Reporting Period.

C. NUMBER OF EVENTS AND WHEN EVENTS ARE CALLED

The Company may call between [x and y] Planned Load Relief Events per year; and between [x and y] Planned Load Build Events per year. There is no cap on the number of Emergency Events that may be called. Events may be called any day, any time of day, in any month; however, the Company anticipates most Events to be called during the following periods.

Planned Events for Load Relief are likely to occur during the Summer months from [June 1 through September 30] between the hours of [4 and 9 pm] and during the Winter months from [December 1 to March 31] between the hours of [6 and 11 am]. Planned Events for Load Build are likely to occur during [the shoulder seasons in the early afternoon to mid-day period].

Emergency Events are called on a same day basis in response to unforecasted grid conditions and thus it is not possible to anticipate when an Emergency Event is likely to be called.

D. EVENT DURATION

Events may last for up to [two] hours and may be called at any time of day. The precise start and end time for any individual Event will depend upon grid conditions.

E. BATTERY OPERATION

Batteries are managed to charge and discharge at specific times as determined by the Company.

For Load Relief Events, the Battery discharges energy over the specified period to self-supply host-customer load and export additional power to the grid, subject to the Customer's Interconnection Agreement, to reduce demand for grid supplied power.

For Load Build Events, the Battery begins charging at the specified time of day to absorb generation from the paired solar PV system, or the grid as applicable, to increase demand for grid supplied power.

F. COMMUNICATIONS

Event notification, dispatch instructions, device telemetry reporting, and other Program communications between DER Managers and the Company are facilitated via [API, another integration, or other secure communication] with the Company or its Edge-DERMS provider, as applicable.

G. EVENT NOTIFICATION

The Company will at minimum provide day-ahead notice when the Event start time is 5:00 pm or later the following day and twenty-four hour advance notice when the Event start time is prior to 5:00 pm the following day. These Events are defined as "Planned Events."

Events for which shorter notice is provided than that defined for Planned Events are defined as Emergency Events. The Company will provide as much advance notice as possible for Emergency Events, but not less than 15 minutes prior to the desired start time.

The Company will make reasonable efforts to not call an Event within 48 hours of major storms reasonably anticipated to cause wide-spread outages.

Customers may opt-out of an Event or manage their Battery charging preferences through the Customer Portal.

H. PERFORMANCE MEASUREMENT

Performance is measured and calculated directly from the Battery telemetry data. If the Customer does not participate in an Event, the Battery does not perform, or performance data is otherwise not available, the Battery receives zero performance for that Event. Load Relief and Load Build Events are measured separately. Planned Events and Emergency Events are measured separately.

Load Relief - Planned Events

Load Relief performance during Planned Events is measured in "kW." All energy discharged from the Battery, whether it serves on-site load, is exported to the grid, or both, counts toward performance.

Performance for the Reporting Period is calculated as the sum of average kW discharged per Planned Event divided by the total number of Planned Events over the course of the Reporting Period ("Average Performance").

The following example illustrates the performance calculation for Planned Events for a Battery over a fictional Reporting Period during which four Planned Events spanning two hours and one Emergency Event spanning one-hour were called. Because performance during Emergency Events is compensated separately, it is not included in the Average Performance calculation for Planned Events.

Event (Date)	Total Discharge (kWh)	Event Duration (Hours)	Event Performance (Average kW Discharged)
July 7	8	2	4
July 10	8	2	4
July 27	7	2	3.5
August 5*	2.5*	1	2.5*
August 10	9	2	4.5
Average Performance	**-**	-	**(4+4+3.5+4.5) / 4 = 4.0 kW**

** denotes Emergency Event*

Load Relief - Emergency Events

Load Relief performance during Emergency Events is measured in "kWh" and determined by the total kWh discharged from the Battery over the course of the Event. All energy discharged from a Battery, whether it serves on-site load, is exported to the grid, or both, counts toward performance.

Performance for the Reporting Period is calculated as the sum of all kWh discharged across all Emergency Events ("Total Performance").

The table below illustrates the Total Performance calculation for Emergency Events for a Battery over a fictional Reporting Period during which four Planned Events spanning two hours and one Emergency Event spanning one-hour were called. Because performance for Planned Events is compensated separately, it is not included in the Total Performance calculation for Emergency Events.

Event (Date)	Total Discharge (kWh)	Event Duration (Hours)	Event Performance (Average kW Discharged)
July 7	8	2	4
July 10	8	2	4
July 27	7	2	3.5
August 5*	2.5*	1	2.5*
August 10	9	2	4.5
Total Performance	**2.5 kWh**	**-**	**-**

** denotes Emergency Event*

Load Build - Planned Events

Load Build performance during Planned Events is measured in "kW."

Performance for the Reporting Period is calculated as the sum of average kW charged per Planned Event divided by the total number of Planned Events over the course of the Reporting Period ("Average Performance").

The table below illustrates the Average Performance calculation for Planned Events for a Battery over a fictional Reporting Period during which four Planned Events spanning two hours and one Emergency Event spanning one-hour were called. Because performance for Emergency Events is compensated separately, it is not included in the Average Performance calculation for Planned Events.

Event (Date)	**Total Charge (kWh)**	**Event Duration (Hours)**	**Event Performance (Average kW Charged)**
July 7	8	2	4
July 10	8	2	4
July 27	7	2	3.5
August 5*	2.5*	1	2.5*
August 10	9	2	4.5
Average Performance	**-**	-	**(4+4+3.5+4.5) / 4 = 4.0 kW**

** denotes Emergency Event*

Load Build - Emergency Events

Load Build performance during Emergency Events is measured in "kWh" and determined by the total kWh absorbed by the Battery over the course of the Event.

Performance for the Reporting Period is calculated as the sum of all kWh absorbed by the Battery across all Emergency Events during the Reporting Period ("Total Performance").

The table below illustrates the Total Performance calculation for Emergency Events for a Battery over a fictional Reporting Period during which four Planned Events spanning two hours and one Emergency Event spanning one-hour were called. Because performance for Planned Events is compensated separately, it is not included in the Total Performance calculation for Emergency Events.

Event (Date)	**Total Charge (kWh)**	**Event Duration (Hours)**	**Event Performance (Average kW Charged)**
July 7	8	2	4
July 10	8	2	4
July 27	7	2	3.5
August 5*	2.5*	1	2.5*
August 10	9	2	4.5

Total Performance	**2.5 kWh**	**-**	**-**

** denotes Emergency Event*

I. PERFORMANCE REPORTING

Performance data is reported to the Company at the close of the [quarterly/seasonal/bi-annual/annual] Reporting Period for individual Batteries and at the fleet level in aggregate. Battery telemetry must be reported in the form of 15-minute interval data for each Event during the Reporting Period. The Company will verify performance and calculate Performance Payments owed for the Reporting Period.

J. COMPENSATION

Performance-Based Compensation Rates

Batteries are compensated according to the applicable Performance Rate schedule for the Load Relief and Load Build functions during Planned Events and Emergency Events.

Batteries located in grid constrained areas, identified in the Company's Schedule [x] on file with the Commission and posted on the Company website, earn the applicable Performance Rate plus a locational adder for Planned Events and Emergency Events.

Participants lock in the applicable Performance Rates at the time the Battery is enrolled for a period of five years. At the end of the five-year term, participants may re-enroll the Battery and lock in the then applicable rates for subsequent 5-year terms.

Performance Rates are as follows:

	Planned Event	**Planned Event (w/ Locational Adder)**	**Emergency Event**	**Emergency Event (w/ Locational Adder)**
Load Relief	$[x]/kW-[a]	$[xy]/kW-[a]	$[x]/kWh	$[xy]/kWh
Load Build	$[x]/kW-[a]	$[xy]/kW-[a]	$[x]/kWh	$[xy]/kWh

*[a] denotes placeholder for length of reporting period (e.g., month / quarter / bi-annual / annual)

Performance Rates may be updated as approved by the [Commission], at which time the Company will update its tariff sheets and post the updated rates on its website, as may be directed by the Commission.

Performance Payments

Performance Payments for Planned Events are calculated by multiplying Average Performance during the Reporting Period by the applicable Performance Rate.

Performance Payments for Emergency Events are calculated by multiplying Total Performance during the Reporting Period by the applicable Performance Rate.

Performance payments are issued directly to the System Owner, unless assigned to another party at the time of enrollment, via check, digital, or ACH payment, as selected at the time of enrollment. Performance payments are issued within [x] days of the end of the Reporting Period.

K. ENROLLMENT INCENTIVES

Each Battery enrolled in the Program for non-income qualified customers receives a one-time enrollment incentive of [$/kW[h]]. Each Battery enrolled for Income Qualified Customers receives a higher enrollment incentive of [$/kW[h].

Enrollment incentives are as follows:

	Enrollment Incentive Amount ($)
Non-Income Qualified Customer	$[x]
Income Qualified Customer	$[x]

Enrollment incentives are issued directly to the System Owner unless assigned to another party at the time of enrollment, via check, digital, or ACH payment, as selected at the time of enrollment. Enrollment incentives are issued within [x] days of enrollment.

L. ENERGY EXPORTS DURING GRID EVENTS

Energy exported to the grid during an Event is credited to the Customer's bill as a monetary bill credit or as a kWh credit equal to the retail rate for their service class ("Grid Service Export Credits"). Energy exported to the grid during non-Event periods is credited to the Customer's bill as specified in the Customer's Interconnection Tariff ("Interconnection Rate Export Credits"). Interconnection Rate Export Credits are applied to the Customer's bill pursuant to the terms in the Customer's Interconnection Tariff.

Grid Service Export Credits earned in a given month are applied at the same time as Interconnection Rate Export Credits earned in the same month and offset the same charges on the Customer's bill that Interconnection Rate Export Credits are applied to offset. Grid Service Export Credits do not expire. If Grid Service Export Credits remain at the end of the annual period, the customer may elect to (i) receive a cash payment for the remaining value of any unused credits or (ii) carry the value of the credits forward to apply to bill charges in the following annual period. Where available, at the end of an annual period, the Customer may donate all or a portion of any unused Grid Service Export Credits to a Commission approved Income Qualified Customer assistance program.

III. [BATTERY RIDER: ADDITIONAL GRID SERVICES]

IV. SMART THERMOSTAT: DYNAMIC GRID MANAGEMENT SERVICE

A. SUMMARY OF SERVICE

Participating Smart Thermostats are managed to support grid needs by modulating host-customer energy consumption with small changes in temperature settings that reduce or increase heating or cooling loads in the home or building during an Event.

B. ENROLLMENT

Smart Thermostats may be enrolled at any time, but may be subject to reduced compensation if enrolled for only part of a Reporting Period or they do not participate in one or more Events.

C. NUMBER OF EVENTS AND WHEN EVENTS ARE CALLED

The Company may call on each enrolled Smart Thermostat for up to [160] Event hours per year for Load Relief and Load Build Events, collectively. Events may be called any day, any time of day, in any month; however, the Company anticipates most Events to be called during the following periods and will make best efforts to not call on any individual enrolled Smart Thermostat for more than 80 hours over the course of any particular Season.

[Most Events are likely to occur during the Summer season months from [June 1 through September 30] between the hours of [4 and 9 pm] and during the Winter season months from [December 1 to March 31] between the hours of [6 and 11 am] while some Planned Events are also likely to occur during [the Spring and Fall shoulder seasons in the early afternoon to mid-day period].]

D. EVENT DURATION

Events may last for up to [four] hours and may be called at any time of day. The precise start and end time for any individual Event will depend upon grid conditions.

E. SMART THERMOSTAT OPERATION

Smart Thermostat settings are adjusted to control building temperatures during an Event. Temperatures may be adjusted [x to y] degrees to provide Load Relief or Load Build. Immediately prior to an Event, the device may be set to condition the building through pre-cooling or pre-heating to minimize customer inconvenience during the Event.

F. COMMUNICATIONS

Event notification, dispatch instructions, device telemetry reporting, and other Program communications between DER Managers and the Company are facilitated via [API,

another integration, or other secure communication] with the Company or its Edge-DERMS provider, as applicable.

G. EVENT NOTIFICATION

The Company will make best efforts to provide as much advance notice as possible, but will provide not less than 15 minutes prior to the desired Event start time.

The Company will make reasonable efforts to not call an Event within 48 hours of major storms reasonably anticipated to cause wide-spread outages.

Customers may opt-out of Events through the Customer Portal.

H. DEVICE RESPONSE MEASUREMENT

Device response is measured as the total number of [minutes / hours] the device participates in each Event. If the Customer opts-out of an Event, the device does not perform, or information on a DER's participation is otherwise not available, the Smart Thermostat will be deemed to have a participation up time of zero for that Event.

Device response for the Reporting Period is calculated as the total number of [minutes / hours] across all Events divided by the total number of Event [minutes / hours] called during the Reporting Period.

The following example illustrates the calculation to determine whether a Smart Thermostat responded across a sufficient number of Event hours over a fictional Reporting Period during which five Events were called.

Example Calculation

Event Date	**Hours Device Responded / Event Duration**
June 30	1.5 / 2.0
July 10	2.0 / 2.0
July 27	0.5 / 2.0
August 5	2. 0 / 2.0
August 10	1.5 / 2.0
Device Response as % of Total Event Hours	***7.5 / 10 = 75%***

I. DEVICE RESPONSE REPORTING

Device Response data is reported to the Company at the close of the [quarterly/seasonal/bi-annual/annual] Reporting Period for individual devices [and at the fleet level in aggregate?]. Device response data is reported as the total number of [minutes / hours] the device participated for each Event during the Reporting Period. Upon receipt, the Company will verify device response and issue payment for the Reporting Period.

J. COMPENSATION

Smart Thermostats receive $[x] during the Reporting Period, provided that the device responds during at least [x]% of the total Event [minutes / hours] during the Reporting Period.

Participants lock in the applicable compensation at the time the Smart Thermostat is enrolled for a period of five years. At the end of the five-year term, participants may re-enroll the Smart Thermostat and lock in the then applicable compensation for subsequent 5-year terms.

Compensation may be updated by the Company, as applicable and as approved by the [Commission]. The applicable compensation is posted on the Company's website and reflected in its tariff sheets on file with the Commission.

Payments are issued directly to the Customer, unless assigned to another party at the time of enrollment, via bill credit, check, or digital or ACH payment, as selected at the time of enrollment. Payments are issued within [x] days of the end of the Reporting Period.

K. ENROLLMENT INCENTIVES

A one-time enrollment incentive of $[x] is paid for each Smart Thermostat enrolled for non-income qualified customers. Devices enrolled for income qualified customers receive a higher enrollment incentive of $[x].

The Company will pay the applicable enrollment incentive to the Customer, unless otherwise assigned to another party at the time of enrollment, via bill credit, check, digital, or ACH payment, as selected at the time of enrollment, within [x] days of enrollment.

V. SMART THERMOSTAT RIDER: [ADDITIONAL GRID SERVICES]

VPP PROGRAM
ELECTRIC VEHICLE RIDER
DYNAMIC GRID MANAGEMENT SERVICE

VI. EV RIDER: DYNAMIC GRID MANAGEMENT SERVICE

A. SUMMARY OF SERVICE

Participating EVs provide the Dynamic Grid Management service by managing when they charge and when they discharge to serve host-customer load and export additional power to the grid, as applicable.

B. ENROLLMENT

EVs may be enrolled in the Managed Charging and Vehicle-to-Grid (as available) pathways at any time leading up to and during the applicable Reporting Period. EVs may be subject to reduced compensation in any individual pathway if enrolled for only part of a Reporting Period or do not participate in one or more Events.

C. NUMBER OF EVENTS AND WHEN EVENTS ARE CALLED

Managed Charging

The Company may call [up to 80] Planned Events per year and up to [x] Emergency Events per year. Events may be called any day, any time of day, in any month; however, the Company anticipates most Events to be called during the following periods.

Planned Events for Load Relief are likely to occur during the Summer months from [June 1 through September 30] between the hours of [4 and 9 pm] and during the Winter months from [December 1 to March 31] between the hours of [6 and 11 am] while Planned Events for Load Build are likely to occur during [the shoulder seasons in the early afternoon to mid-day period].

Emergency Events are called on a same day basis in response to unforecasted grid conditions and thus it is not possible to anticipate when an Emergency Event is likely to be called.

Vehicle to Grid

The Company may call [up to 80] Planned Events and [up to x] Emergency Events per year. Events may be called any time of day, on any day, in any month; however, the Company anticipates most Events to be called during the following periods.

Planned Events for Load Relief are likely to occur during the Summer months from [June 1 through September 30] between the hours of [4 and 9 pm] and during the Winter months from [December 1 to March 31] between the hours of [6 and 11 am].

Emergency Events are called on a same day basis in response to unforecasted grid conditions and thus it is not possible to anticipate when an Emergency Event is likely to be called.

D. EVENT DURATION

1. *Managed Charging*

Events may last for multiple hours and may be called at any time of day. The precise start and end time for any individual Event will depend upon grid conditions.

2. *Vehicle to Grid*

Events may last for up to [four] hours and may be called at any time of day. The precise start and end time for any individual Event will depend upon grid conditions.

E. EV AND EVSE OPERATION

1. *Managed Charging*

Managed Charging allows the Company to use the Load Relief and Load Build capabilities of the EV by shifting the time of day when EV charging occurs. Customers may set and manage preferences through the Customer Portal to include a required state of charge and time of day the charge must be attained or retained and make other changes to meet their needs.

2. Vehicle to Grid

Vehicle to Grid allows the Company to utilize additional Load Relief capabilities of the EV by discharging the stored energy at a specified time of day to self-supply host-customer load and export additional power to the grid, subject to the Customer's Interconnection Agreement, to reduce demand for grid supplied power. Customers may set and manage preferences through the Customer Portal to include a required state of charge and time of day the charge must be attained or retained and make other changes to meet their needs.

F. COMMUNICATIONS

Event notification, dispatch instructions, device telemetry reporting, and other Program communications between DER Managers and the Company are facilitated via [API, another integration, or other secure communication] with the Company or its Edge-DERMS provider, as applicable.

G. EVENT NOTIFICATION

1. *Managed Charging*

The Company will provide notice of Planned Events on a day-ahead basis.

The Company may call Emergency Events on a day-of basis and will provide as much advance notice as possible for Emergency Events, but not less than 15 minutes prior to the desired start time.

The Company will make reasonable efforts to not call an Event within 48 hours of major storms reasonably anticipated to cause wide-spread outages.

Customers may opt-out of an Event by changing their charging preferences through the Customer Portal.

2. *Vehicle to Grid*

The Company will provide notice of Planned Events on a day-ahead basis when the start time is 5:00 pm or later the following day and twenty-four hour advance notice when the start time is prior to 5:00 pm the following day. These Events are defined as "Planned Events."

Events for which shorter notice is provided than that defined for Planned Events are defined as Emergency Events. The Company will provide as much advance notice as possible for Emergency Events, but not less than 15 minutes prior to the desired start time.

The Company will make reasonable efforts to not call an Event within 48 hours of major storms reasonably anticipated to cause wide-spread outages.

Customers may opt-out of an Event or manage their charging preferences through the Customer Portal.

H. PERFORMANCE MEASUREMENT

1. *Managed Charging*

Performance is measured and recorded through the [EV's onboard telematics or EVSE, or AMI or other approved submeter], as applicable. If the Customer opts-out, the EV does not perform, or information on the EV's charging status is otherwise not available, the EV receives zero performance for that Event.

Performance for the Reporting Period is calculated as the total number of [minutes / hours] the EV did not charge or charged during called Events divided by the total number of Event [minutes / hours] called during the Reporting Period ("Average Performance"). Performance during Emergency Events is excluded from the Average Performance calculation except in cases where the inclusion of Event Performance from one or more Emergency Events would improve Average Performance.

The following example illustrates the Average Performance calculation for an EV over a fictional Reporting Period during which five Managed Charging Events were called,

including one Emergency Event. In this example, because performance during the Emergency Event would reduce Average Performance for the Reporting Period, it is excluded from the calculation.

Example Performance Calculation

Event (Date)	Performance Duration / Event Duration (Hours)
June 30	1.5 / 2.0
July 10	2.0 / 2.0
July 27*	0.5 / 2.0
August 5	2. 0 / 2.0
August 10	1.5 / 2.0
Average Performance (%)	***7.5 / 8 = 87.5%***

** Emergency Event*

2. *Vehicle to Grid*

Performance is measured through the EV's onboard telematics or EVSE, or other approved submeter, as applicable. Planned Events and Emergency Events are measured and compensated separately. If the Customer opts-out, the EV does not perform, or performance data is otherwise not available, the EV receives zero performance for that Event.

Planned Events

Performance is measured in kW. All energy discharged from the EV, whether it serves on-site load, is exported to the grid, or both, counts toward performance during the Event.

Performance for the Reporting Period is calculated as the sum of average kW discharged per Planned Event divided by the total number of Planned Events over the course of the Reporting Period ("Average Performance").

The following example illustrates the performance calculation for an EV over a fictional Reporting Period during which four Planned Events spanning two hours and one Emergency Event spanning one-hour were called. Because performance during Emergency Events is measured and compensated separately, it is not included in the Average Performance calculation for Planned Events.

Event (Date)	Total Discharge (kWh)	Event Duration (Hours)	Event Performance (Average kW Discharged)
July 7	8	2	4
July 10	8	2	4
July 27	7	2	3.5
August 5*	2.5*	1	2.5*
August 10	9	2	4.5

Average Performance	**-**	-	**(4+4+3.5+4.5) / 4 = 4.0 kW**

** denotes Emergency Event*

Emergency Events

Performance during Emergency Events is measured in kWh and determined by the total kWh discharged from the EV over the course of the Event. All energy discharged from the EV, whether it serves on-site load, is exported to the grid, or both, counts toward performance during the Event.

Performance for the Reporting Period is calculated as the sum of all kWh discharged during all Emergency Events called over the course of the Reporting Period ("Total Performance").

The table below illustrates the Total Performance calculation for an EV over a fictional Reporting Period during which four Planned Events spanning two hours and one Emergency Event spanning one-hour were called. Because performance during Planned Events is compensated separately, it is not included in the Total Performance calculation for Emergency Events.

Event (Date)	**Total Discharge (kWh)**	**Event Duration (Hours)**	**Event Performance (Average kW Discharged)**
July 7	8	2	4
July 10	8	2	4
July 27	7	2	3.5
August 5*	2.5*	1	2.5*
August 10	9	2	4.5
Total Performance	**2.5**	**-**	**-**

** denotes Emergency Event*

I. PERFORMANCE REPORTING

Performance data is reported to the Company at the close of the [quarterly/seasonal/bi-annual/annual] Reporting Period for individual EVs and at the fleet level in aggregate. Performance data must be reported in the form of 15-minute interval data as recorded by the EV's onboard telematics or the EVSE, AMI, or other approved submeter, as applicable, for each Event during the Reporting Period. The Company will verify performance and calculate Performance Payments owed for the Reporting Period.

J. COMPENSATION

1. *Managed Charging*

Participating EVs receive a flat [monthly/quarterly/bi-annual/annual] payment provided that EV participates in at least [x]% of all Event hours during the Reporting Period.

EVs located in grid constrained areas, identified in the Company's Schedule [x] on file with the Commission and posted on the Company website, earn a compensation adder.

Participants lock in the applicable payment at the time the EV is enrolled for a period of five years. At the end of the five-year term, participants may re-enroll the EV and lock in the then applicable rates for subsequent 5-year terms.

The [monthly/quarterly/bi-annual/annual] payment is as follows:

	Planned Event	**Planned Event (Locational Adder)**
Payment	$[x]-a	$[xy]-a

*[a] denotes placeholder for length of reporting period (e.g., month/quarter/bi-annual/annual)

The applicable compensation may be updated as approved by the [Commission] at which time the Company will update its tariffs and website, as directed by the [Commission].

The compensation payment is issued directly to the Customer, unless assigned to another party at the time of enrollment, via check, digital, or ACH payment, as selected at the time of enrollment. The compensation payment is issued within [x] days of the end of the Reporting Period.

2. *Vehicle to Grid*

EVs and their associated EVSE receive the applicable Performance Rates for Average and Total Performance during Planned Events and Emergency Events, respectively, during the Reporting Period.

EVs and their associated EVSE located in grid constrained areas, identified in the Company's Schedule [x] on file with the Commission and posted on the Company website, earn a Performance Rate adder for Planned Events and Emergency Events.

Performance Payments for Planned Events are determined by multiplying Average Performance during the Reporting Period by the applicable Performance Rate.

Performance Payments for Emergency Events are determined by multiplying Total Performance during the Reporting Period by the applicable Performance Rate.

Participants lock in the applicable Performance Rates at the time the EV is enrolled for a period of five years. At the end of the five-year term, participants may re-enroll the EV and lock in the then applicable rates for subsequent 5-year terms.

Performance Rates are as follows:

	Planned Event	**Planned Event (Locational Adder)**	**Emergency Event**	**Emergency Event (Locational Adder)**
Performance Rate	$[x]/kW-[a]	$[xy]/kW-[a]	$[x]/kWh	$[xy]/kWh

*[a] denotes placeholder for length of reporting period (e.g., month/quarter/bi-annual/annual)

Performance Rates may be updated as approved by the [Commission] at which time the Company will update its tariffs and post updated rates on its website, as directed by the [Commission].

Performance Payments are issued directly to the Customer, unless assigned to another party at the time of enrollment, via check, digital, or ACH payment, as selected at the time of enrollment. Performance Payments are issued within [x] days of the end of the Reporting Period.

K. ENROLLMENT INCENTIVES

Each EV enrolled in the Program receives a one-time enrollment incentive. EVs enrolled for income qualified customers receive a higher enrollment incentive.

Enrollment incentives are as follows:

	Enrollment Incentive Amount ($)
Non-Income Qualified Customer	$[x]
Income Qualified Customer	$[x]

Enrollment incentives are issued directly to the Customer, unless assigned to another party at the time of enrollment, via check, digital, or ACH payment, as selected at the time of enrollment. Enrollment incentives are issued within [x] days of enrollment.

L. ENERGY EXPORTS DURING GRID EVENTS

EVs participating in the Vehicle to Grid option may export energy to the grid during Events, subject to their Interconnection Agreement. Energy exported to the grid during an Event is credited to the Customer's bill as a monetary bill credit equal to the retail rate for their service class ("Grid Service Export Credits"). Energy exported to the grid outside of Events is credited to the Customer's bill as specified in the Customer's interconnection tariff ("Interconnection Rate Export Credits"). Interconnection Rate Export Credits are applied to the Customer's bill in accordance with the terms of the Customer's Interconnection Tariff.

Grid Service Export Credits earned in a given month are applied at the same time as Interconnection Rate Export Credits earned in the same month and offset the same charges on the Customer's bill that Interconnection Rate Export Credits are applied to offset. Grid

Service Export Credits do not expire. If Grid Service Export Credits remain at the end of the annual period, the customer may elect to (i) receive a cash payment for the remaining value of any unused credits or (ii) carry the value of the credits forward to apply to bill charges in the following annual period. Where available, at the end of an annual period, the Customer may donate all or a portion of any unused Grid Service Export Credits to a Commission approved Income Qualified Customer assistance program.

VPP PROGRAM MATRIX
ELECTRIC VEHICLE RIDER
[PLACEHOLDER FOR ADDITIONAL GRID SERVICES X, Y, Z]

VII. [EV RIDER: ADDITIONAL GRID SERVICES]

VPP PROGRAM MATRIX
DYNAMIC GRID MANAGEMENT SERVICE

APPENDIX I
VPP Program Matrix for Dynamic Grid Management Service

	Device Type		
Program Attribute	**Batteries**	**Smart Thermostats**	**Electric Vehicles**
Grid Service	Dynamic Grid Management, ability to add more services over time	Dynamic Grid Management, ability to add more services over time	Dynamic Grid Management, ability to add more services over time
Eligible Customers	Customers with eligible Batteries	Customers with eligible Smart Thermostats	Customers with eligible EVs and EVSE
Eligible Devices	Behind-the-meter stationary batteries	Smart thermostats	EVs and associated EVSE
Enrollment	Customer opt-in enrollment through DER Manager Customer Portal or DER Manager auto-enrollment with prior Customer authorization and ability to opt-out	Customer opt-in enrollment through DER Manager Customer Portal or DER Manager auto-enrollment with prior Customer authorization and ability to opt-out	Customer opt-in enrollment through DER Manager Customer Portal or DER Manager auto-enrollment with prior Customer authorization and ability to opt-out
Enrollment Incentive	Non-LMI Customers: $[x]/kW LMI Customers: $[x]/kW as determined by Commission	$[x]	$[x]
Capability Period	Year-round	Year-round	Year-round
Number of Events	Load Relief: [60 – 90] Load Build: Up to [150] Emergency Events: No cap	Up to 160 Event hours per year	Managed Charging: 80 Vehicle to Grid: 80
Event Window	Any time of day	Any time of day	Any time of day
Event Duration	Up to 2 hours	Up to 4 hours	Managed Charging: No limit, defined by grid conditions and customer charging preferences

VPP Program Matrix
Dynamic Grid Management Service Cont.

			Vehicle to Grid: Up to 4 hours
Planned Event Notification	Day-ahead or 24-hours ahead	Day ahead where possible but not less than 15 minutes	Managed Charging: Day-ahead Vehicle to Grid: Day-ahead or 24-hours
Emergency Event Notification	Day of, or less than 24 hours, minimum 15 minutes prior to Event	n/a	Managed Charging: Day-of Vehicle to Grid: Day of, or less than 24 hours, minimum 15 minutes prior to Event
Communication	Via API or other integration, or other secure communication between Edge-DERMS platform and DER Manager, proprietary from DER Manager to device	Via API or other integration, or other secure communication between Edge-DERMS platform and DER Manager, proprietary from DER Manager to device	Via API or other integration, or other secure communication between Edge-DERMS platform and DER Manager, proprietary from DER Manager to device
DER Operation	Load Relief: Discharge Battery for self-supply to reduce host load and export additional power to grid Load Build: Charge Battery from paired solar to increase load on grid	Temperatures may be adjusted up or down to provide Load Relief or Load Build, as applicable, with pre-conditioning prior to Event	Managed Charging: Time of day when EV charging occurs is managed to deliver Load Relief or Load Build service, as applicable Vehicle to Grid: Discharge EV to self-supply host-customer load and export additional power to the grid to provide Load Relief
Performance Payment Rate: Load Relief	Planned Events: $[x]/kW-[month/quarter/ bi-annual/annual] Emergency Events: $[x]/kWh	$[x] (Inclusive of load relief and load build)	Managed Charging: $[x] (Inclusive of load relief and load build) Vehicle to Grid: Planned Events: $[x]/kW-[month/quarter/ bi-annual/annual] Emergency Events: $[x]/kWh

VPP Program Matrix
Dynamic Grid Management Service Cont.

Performance Payment Rate Load Build	Planned Events: $[x]/kW-[month/quarter/ bi-annual/annual] Emergency Events: $[x]/kWh	(see above)	Managed Charging: (see above) Vehicle to Grid: n/a
Performance Payment Rate Lock-in	5 years	5 years	5 years
Performance Measurement	Device telemetry data	WiFi enabled device up-time during Events	EVSE, onboard telematics, AMI or other approved submeter
Performance Calculation	Planned Events for Load Relief and Load Build: Based on Average Performance (kW) across all Planned Events during Reporting Period Emergency Events for Load Relief and Load Build: Based on Total Performance (kWh) across all Emergency Events during Reporting Period	Total [minutes/hours] device responds as percent of total [minutes/hours] of Events	Managed Charging: Total [minutes/hours] device responds as percent of total [minutes/hours] of Events Vehicle to Grid:
Performance Payment Calculation	Planned Events: Performance Payment = Payment Rate ($/kW) x Average Performance over Reporting Period (kW) Emergency Events: Performance Payment = Payment Rate ($/kWh) x Total Performance (kWh) over Reporting Period	Device paid if performance exceeds minimum participation uptime threshold	Managed Charging: Device paid if performance exceeds participation uptime threshold Vehicle to Grid Planned Events: Performance Payment = Payment Rate ($/kW) x Average Performance over Reporting Period (kW) Emergency Events: Performance Payment = Payment Rate ($/kWh) x Total Performance (kWh) over Reporting Period

VPP Program Matrix
Dynamic Grid Management Service Cont.

Performance Payment Timing and Method	[Monthly/quarterly/bi-annually/annually] to the System Owner in payment form selected at time of enrollment, assignable to another party at time of enrollment.	[Monthly/quarterly/bi-annually/annually] to Customer in payment form selected at time of enrollment, assignable to another party at time of enrollment.	[Monthly/quarterly/bi-annually/annually] to Customer in payment form selected at time of enrollment, assignable to another party at time of enrollment.
Bill Credit for Exports during Grid Event	1:1 monetary credit equivalent to retail rate	n/a	1:1 monetary credit equivalent to retail rate
Co-Participation in other Programs	Yes, except as otherwise provided by Commission or another program's rules	Yes, except as otherwise provided by Commission or another program's rules	Yes, except as otherwise provided by Commission or another program's rules