Overview of DSGS Option 4

Date: June 26, 2025

Agenda

1. Introduction

2. Eligibility & Enrollment

3. Reporting

4. Events

5. Performance & Incentives

6. Q&A

INTRODUCTION

Olivine Introduction & Role in DSGS

About Olivine, Inc.

- Olivine is an innovator in advancing electrical load flexibility to enhance system reliability, increase energy equity, and decarbonize the grid

- Learn more at www.olivineinc.com

Role in DSGS

- Implementing DSGS on behalf of CEC

- Responsible for providing program management and infrastructure to support enrollment, dispatch, reporting and settlements
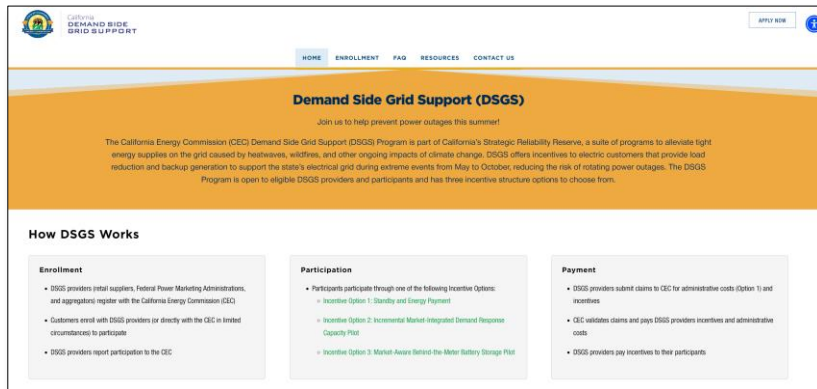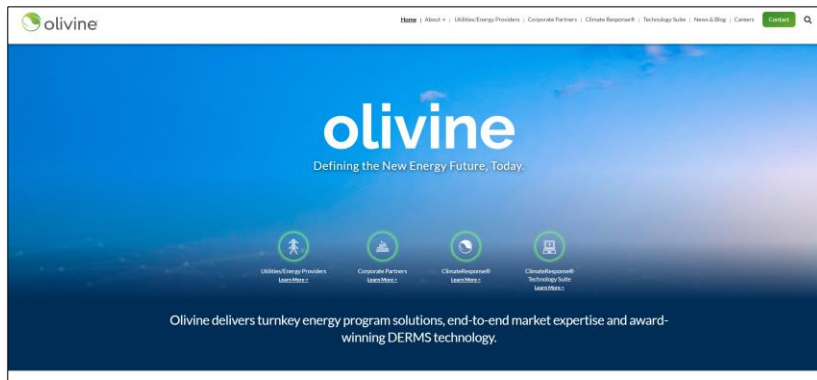
INTRODUCTION

Program Participation Options

	Option 1	Option 2	Option 3	Option 4
Overview	Emergency Dispatch	Market-Integrated Demand Response Incremental Capacity Pilot	Market-Aware Storage Virtual Power Plant Pilot	**Emergency Load Flexibility Virtual Power Plant Pilot**
Eligibility	Limited direct participants through CEC & DSGS Providers (non-residential)	No direct participation, through DSGS Providers only	No direct participation, through DSGS Providers only	**No direct participation, through DSGS Providers only**

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ELIGIBILITY & ENROLLMENT

ELIGIBILITY & ENROLLMENT

Option 4 Eligibility Requirements Overview

Provider Eligibility Requirements

Aggregation Eligibility Requirements

Participant Eligibility Requirements

ELIGIBILITY & ENROLLMENT

Option 4 Provider Eligibility Requirements

- Is a third-party load flexibility provider, POU, or CCA (POUs and CCAs may only serve customers for which they serve as the load serving entity (LSE) or retail provider)

- Receives authorization from participants allowing for the use of their device for program participation

- Sends dispatch signals to or directly control devices participating in the load flexibility VPP

- Collect and provider 15-minute or 5-minute load data from a smart thermostat-controlled HVAC system or other eligible device; If HVAC load data unavailable, HVAC runtime data from a smart thermostat can be provided instead

- Aggregate a minimum of:

200 kW across all aggregations	**OR**	100 kW in at least one single aggregation	**OR**	50 kW in at least 3 aggregations

Option 4 Aggregation Eligibility Requirements

- Must consist of customer sites located within the same utility distribution company (UDC) service territory

- Must consist of a single device technology type of one of the following:
  - Smart thermostats with runtime monitoring capability controlling AC units, including heat pumps, without load monitoring capability
  - Smart thermostat-controlled AC units, including heat pumps, with load monitoring capability
  - Heat pump water heaters
  - Electric resistance water heaters
  - Electric Vehicle Supply Equipment (EVSE)
  - Stationary behind-the-meter (BTM) batteries
  - Residential smart electrical panels (aka circuit breaker box or service panel)

- May include dispatchable devices located at residential (bundled or unbundled), nonresidential (bundled or unbundled) customer sites, or both

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Option 4 Participant Eligibility Requirements

Eligible Participants	A participant is *not eligible* if the participant's load reduction resource is:

Eligible Participants

- Have an operational HVAC system, electric water heater, EVSE, stationary battery, or smart electrical panel capable of reducing net load in response to a dispatch signal by the VPP aggregator by changing*:
  - Device operational mode
  - Temperature setpoint
  - Other method

- Not be participating in a California ISO PDR or RDRR, or registered in the California ISO DRRS

- Not be a distribution service customer of Pacific Gas and Electric Company (PG&E)

*Device operational changes through behavioral actions are NOT eligible

A participant is *not eligible* if the participant's load reduction resource is:

- Enrolled in the Emergency Load Reduction Program, the Base Interruptible Program, or the Agricultural Pump Interruptible Program

- Receiving payment or accounting for the same reduction in use of electricity, including energy export, through any other utility, CCA, or state program, except critical peak pricing rate plans

- A cogeneration facility with a power purchase agreement (PPA)*

* If a participant has a PPA for a renewable generator at the same site as a cogeneration facility, but not one for the cogeneration facility, this does not make the participant ineligible

Option 4 Enrollment Process Overview

1

Complete the DSGS Provider Application Form and Required Attachments
- Attachment requirements are outlined in the provider application form
- Current STD-204

2

Upload Materials to Program Website: https://dsgs.olivineinc.com/upload/

3

DSGS Program Team Review and Approval
- Checks include completeness of documents and attachments
- The team will contact provider applicant if there are additional questions or required updates
- Upon approval, the program team will provide an enrollment confirmation email

4

Prior to enrolling POU, IOU, and/or CCA customers, providers must notify them of their intent to enroll customers within their service territory by providing them with:
- The aggregator's name
- Incentive option(s) the aggregator will offer to participants
- Description of customer types and resources the aggregator plans to enroll in each incentive option
- Providers must also obtain a written statement from each applicable POU – see step 3 here for details
- To submit notices / written statements, email to or CC dsgs-support@olivineinc.com OR upload to https://dsgs.olivineinc.com/upload

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Submit Initial Participant Enrollment Report within 10 days of Enrollment

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Option 4 Enrollment Window & Payment Impacts

- Program season is split into 2 quarters
  - Quarter 1: May – July
  - Quarter 2: Aug – Oct
- Providers may enroll throughout the season
- Enrollment start date will be aligned with the beginning of the next month and contingent on all required reports submitted by the appropriate deadline
- If no events (including test events) occur in the program quarter after the aggregation begins participation, then the payment for that program quarter is set to zero
- Therefore, if Providers enroll their aggregations too late in the season, they take on the risk of not participating in a test event or EEA-triggered event and not receiving payment

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REPORTING

REPORTING

Option 4 Reporting Overview

There are three required reports for Option 4:

Capacity Nomination Report

- **Deadline**: 3 business days before the first month of program participation
- **Content**: Per-device average load reduction nomination for each month of the season by device type and by UDC
- **Format**: See Option 4 Season Capacity Nomination Technical Guide

Participation Reports

- **Deadline**: 3 business days before the **first of each participation month**
- **Content**: Comprehensive list of devices enrolled for each VPP aggregation that month (NOT incremental)
- **Format**: See Option 4 Participant Enrollment Technical Guide

Performance Reports

- **Deadline**: 10 business days after a program or test event occurs
- **Content**: Participating device load or run-time data
- **Format**: See Option 4 Interval Data Specification Guide

Option 4 Capacity Nominations

- **Capacity Nomination Reports**: Per-device average load reduction nomination by device type and UDC for each month submitted **one time** prior to the first month of program participation
  - Once submitted, providers **cannot** update the values for the remainder of the program season
  - Expansion to additional territories (e.g. adding an SCE resource) or new device type requires an additional submission of this report prior to the first month of program participation of the new aggregation

- Total Capacity Nomination = Per-device Nomination x # of Devices Enrolled

  Capacity Nomination Report   **Participation Report**

- Nominated Capacity Incentive (prior to performance adjustments) = Total Capacity Nomination x Month's Incentive Rate

- The CEC sets aside funds each month in an amount equal to 120% of the Nominated Capacity Incentive

- **Incentive payments are impacted** based on the aggregation's performance relative to the total capacity nomination

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Option 4 Report Submission

- Reports must be submitted via the Olivine DER™ platform Provider Portal
    - Email DSGS Support (dsgs-support@olivineinc.com) to create an account or add users

- Provider Portal: https://app.olivineinc.com/i/dsgs
    - Navigate to **Submit Data File**
    - **Select File** for submission – one separate file per UDC required
    - Select **Validate** for feedback on file format and contents – correct any identified issues then reupload
    - Select **Submit** once file has been validated without issues
    - Contact DSGS Support with any questions

Submit Data File

File Selection   Select File
- You can drag-and-drop a file anywhere in this window.

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Validate   Submit

Back

File is Valid!
Please submit the file when you are ready.

Log Messages

Level	Message
(i)	Validation is complete.

EVENTS

Option 4 Event Parameters

Event Triggers	Host BA EEA Watch or EEA 1-3, CEC Issued Test Event
Event Hours	Determined based on CAISO Day-Ahead Locational Marginal Price (LMP) for Default Load Aggregation Point (DLAP) of the host UDC
Event Duration	1 – 4 hours
Availability	4-10 PM, 7 days per week
Minimum Response Time	20 minutes
Minimum Events	2 per program season, one per program quarter*
Maximum events	60 cumulative hours / season** 3 events in any 7-day period***
Notification Methods	Providers can receive notifications via email, SMS, OpenADR, or Olivine Dispatch API

* If the aggregation is only enrolled in the second program quarter, the minimum is one event. If no events (including test events) occur in the program quarter after the aggregation begins participation, then the payment for the months in the program quarter is set to zero.

** Participation in events beyond 60 hours is optional but may be used to increase demonstrated capacity. If the events called in a month brings the total for a given resource to more than 60 hours for that program year, the events with the highest performance shall be included in the 60-hour maximum and used to determine demonstrated capacity.

*** If there have been more than three Option 4 demonstrated capacity events in the last seven-day period, subsequent events in the rolling seven-day period will not be used to determine demonstrated capacity. Instead, providers are eligible for energy payments at the rate of $1/kWh during core hours and $0.50/kWh during shoulder hours.

Example Consecutive Event Scenario

- Events capped at 3 events in a 7-day period

- Events exceeding this cap are not included in demonstrated capacity calculations

  - Eligible for energy payments of $1/kWh during core hours, $0.50/kWh during shoulder hours

- Table at right shows a scenario in which there are consecutive event days

Day	Payment Type	Notes
1	Demonstrated Capacity Payment	
2	Demonstrated Capacity Payment	
3	Demonstrated Capacity Payment	
4	Energy Payment	Optional Participation
5	Energy Payment	Optional Participation
6	Energy Payment	Optional Participation
7	Energy Payment	Optional Participation
8	Demonstrated Capacity Payment	
9	Demonstrated Capacity Payment	

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Example Non-Consecutive Event Scenario

Table at right shows a scenario in which there are non-consecutive event days

*Determination for Day 8
— 7-day period: Days 2 – 8
— 2 previous demonstrated capacity events (Day 4,5)

**Determination for Day 9
— 7-day period: Days 3 - 9
— 3 previous demonstrated capacity events (Day 4, 5, 8)

Day	Event	Payment Type	Notes
1	Option 4 Event	Demonstrated Capacity Payment	
2	No Event	NA	
3	No Event	NA	
4	Option 4 Event	Demonstrated Capacity Payment	
5	Option 4 Event	Demonstrated Capacity Payment	
6	Option 4 Event	Energy Payment	Optional Participation
7	Option 4 Event	Energy Payment	Optional Participation
8*	Option 4 Event	Demonstrated Capacity Payment	
9**	Option 4 Event	Energy Payment	Optional Participation
10	No Event	NA	
11	Option 4 Event	Demonstrated Capacity Payment	
12	Option 4 Event	Energy Payment	Optional Participation

EVENTS

Option 4 Event Hour Selection

- Option 4 events consist of Core Hours and Shoulder Hours
- **Core Hours:**
  - Up to 2 hours of core intervals targeting 'peak price hours'
  - Peak price hours are defined as the 2 consecutive hours with the highest mean CAISO energy price within the daily availability window
  - In the case that there are more than 1 set of hours meeting peak price hours definition, the earliest set of hours is used
- **Shoulder Hours:**
  - Target the hours immediately preceding and following the core hours
  - Up to 2 hours of shoulder event hours, in 15-minute increments
- Both core and shoulder hours may be shifted or shortened in 15-minute increments to conform to daily availability window and minimum response time (see next slide)
- Performance of core hours is weighted more heavily than performance of shoulder hours in the performance calculation
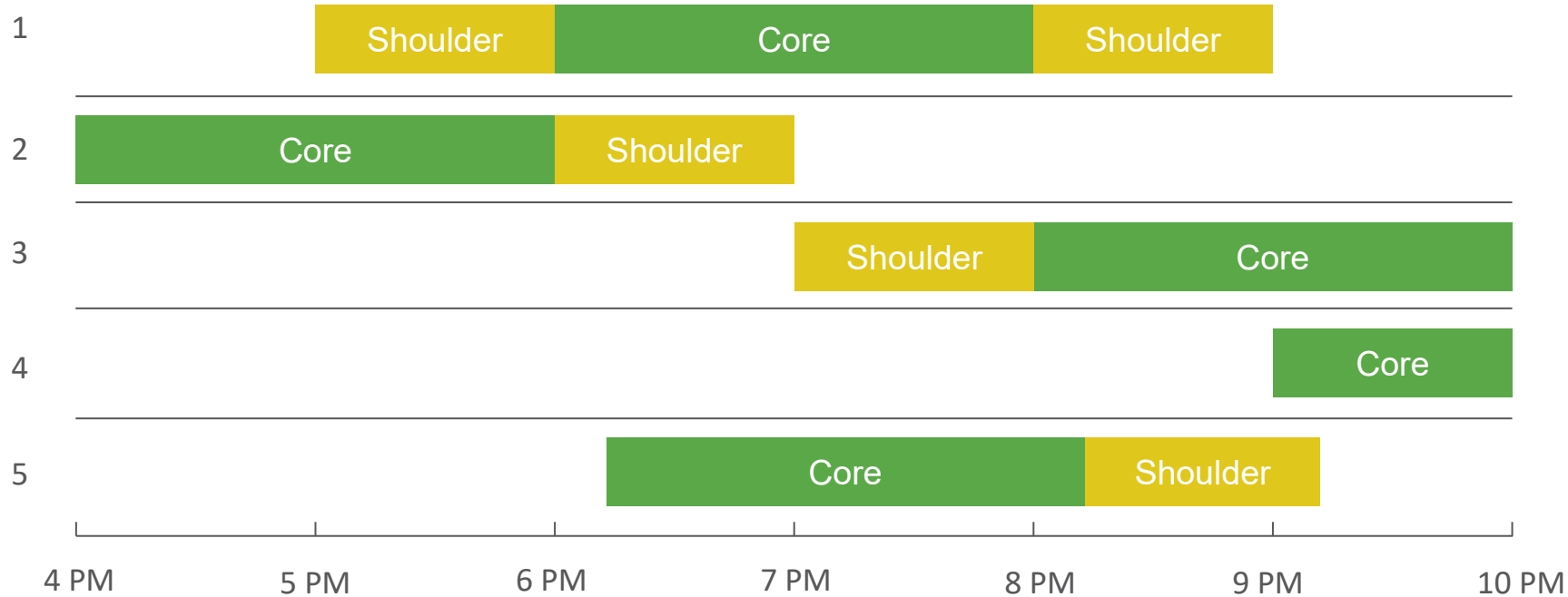
Option 4 Event Notice Types

	Advanced-Notice Events	Short-Notice Events	Real-Time Events
Description	EEA Watch or EEA 1-3 issued at least 1 hour 20 minutes ahead of peak price hours start time	EEA Watch or EEA 1-3 issued more than 20 minutes but less than 1 hour 20 minutes ahead of peak price hours start time	EEA Watch or EEA 1-3 issued less than 20 minutes before peak price hours start time, including notices issued during or after the peak price hours No event called if no EEA issued by 8:40 pm
Core Hours	Peak price hours, hour-aligned	Peak price hours, hour-aligned	First 15-minute interval at least 20 minutes from the announcement of the EEA and last for two hours or until 10 pm (whichever is earlier)
Shoulder Hours	Hours immediately preceding and following peak price hours (unless outside of availability window), hour aligned	15-minute intervals preceding peak price hours start time and at least 20 minutes from EEA notice issued time **and** four intervals immediately following the Core Hours (unless outside of availability window)	Four 15-minute intervals immediately following the event (unless outside of availability window)

EVENTS

Option 4 Event Scenario Examples

| 1 | Shoulder | Core | Shoulder |

| 2 | Core | Shoulder |

| 3 | Shoulder | Core |

| 4 | Core |

| 5 | Core | Shoulder |

4 PM 5 PM 6 PM 7 PM 8 PM 9 PM 10 PM

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Option 4 Event Updates & Cancellations

- Option 4 events will be cancelled if the host BA issues a cancellation of all applicable EEA notices at least 20 minutes before the start of the Option 4 event

- Once an Option 4 event is dispatched, the event start and end times will **not** be updated, regardless of the following scenarios:

  - The BA issues subsequent notice to update the EEA start and/or end times

  - The EEA is underway and the BA cancels the EEA early

  - The BA issues a higher-level EEA for the event day that does not fully overlap with the initial EEA that triggered the Option 4 event

Option 4 Test Events

In the absence of an EEA-trigger Option 4 event in each program quarter:

- The **CEC will initiate a test event** to meet the minimum event requirement of one event per quarter
    - Efforts will be made to align test events with high-need days in coordination with CAISO and avoid days when an EEA-triggered event is likely
    - Test event hours will be determined utilizing the normal event hour selection criteria referencing CAISO LMP DLAP prices
- If an EEA-triggered event occurs after the CEC-initiated test event in the same quarter, performance in both events will be counted in determining the aggregation's overall monthly performance

Option 4 Event Notification Format

Information contained in event notifications:

1. **Event Territory and Date**

2. **Full Event Period**

3. **Core hours**

Subject: DSGS Option 4 Event: MM/DD/YYYY XX:XX - XX:XX in XXX Territory

The following DSGS event(s) have been scheduled for Incentive Option 4:

Territory	Date	Event Period (Core & Shoulder Hours)	Core Hours
UDC	MM/DD/YYYY	XX:XX-XX:XX	XX:XX-XX:XX

Option 4 events are capped at three events in any seven-day period. If there have been more than three Option 4 demonstrated capacity events in the last seven-day period, this event will not be used to determine demonstrated capacity. Instead, providers are eligible for energy payments at the rate of $1/kWh during core hours and $0.50/kWh during shoulder hours.

For more information about Option 4 dispatch criteria, see the program guidelines and the FAQ. You are receiving this message because you have an aggregation enrolled in the Demand Side Grid Support (DSGS) program Option 4. If you no longer wish to receive these emails, send an email to dsgs-support@olivineinc.com to let us know.

Thank you for all you do to help support California's electrical grid during extreme events to support grid reliability and reduce risk of rotating power outages.

DSGS is implemented and managed by Olivine, Inc., on behalf of the California Energy Commission. To learn more, visit olivineinc.com.

PERFORMANCE & INCENTIVES

PERFORMANCE & INCENTIVES

Option 4 Load Impact Measurement Calculation

- Load Impact Measurements are calculated at the aggregation level for all event (and test event) intervals
- Load Impact is the adjusted baseline minus event load during event intervals
- Baseline calculation is dependent on resource type

- **Non-Weather-Sensitive Resources Baseline**
  - Non-Weather-Sensitive Resources: Electric water heaters, EVSE, stationary batteries
  - 10-in-10 (weekday), 4-in-4 (weekend/holiday) day-matching non-event-day baseline
  - No day-of-adjustment

- **Weather-Sensitive Resources Baseline**
  - Weather-Sensitive Resources: Smart thermostats, smart electric panels, and other HVAC devices
  - 4-day weather-matching baseline with 28-day lookback period and day-of adjustment (0.6 – 1.4) applied
  - Underlying load values based on load data (if submitted) or *converted from HVAC compressor runtime data*
  - Runtime-based estimates of load shall use an assumed connected load of 2.5 kW for full or high speed and 1.25 kW for partial or low speed (see Option 4 Interval Data Specification Guide for details)
  - See Guidelines Chapter 6.F for formulas and calculation steps, and further details about temperature data and methodology

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Option 4 Performance Evaluation

- Option 4 aggregations' measured load impacts are compared against the weather-normalized capability (WNC) for each event interval to determine performance and final incentive amount
  - Non-weather-sensitive resources: WNC = nominated capacity
  - Weather-sensitive resources: WNC is a function of nominated capacity, composite temperature, and planning temperature by territory, month, and date (see Chapter 6, Section F.2)

- For weather-sensitive resources, WNC is equal to nominated capacity in high temperature events, but lower if temperature is lower (see example figure to right)

- Monthly Performance Score (P) is a ratio of average event load impact compared to WNC, averaged over the event intervals* for the month and weighted by energy price (LMP)

*Shoulder intervals are derated by 50% in this calculation

Figure 4: Weather-Normalized Capability Profile for SDG&E Aggregation (Planning Temperature = 87°F) With 1 MW Capacity Nomination
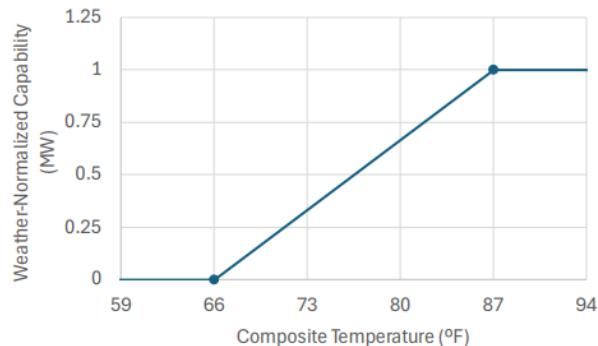
Option 4 Performance-Adjusted Incentive Payment

- Adjusted Demonstrated capacity (ADC) is calculated based on performance band adjustments for the aggregation's monthly performance score (P) (see table below), multiplied by the original nominated capacity

- In months without Option 4 events, P = 1

	PERFORMANCE (P)	INCENTIVE PAYMENT (% OF NOMINATED CAPACITY INCENTIVE)
OVERPERFORMANCE	P > 120%	120%
PRO-RATA	100% ≤ P < 120%	P
DERATED	50% ≤ P < 100%	100% − 2(100% − P)
PENALTY	P < 50%	-50%

*ADC = this column * nominated capacity*

- The DSGS load flexibility incentive rates vary by month (see table to right) and are multiplied by monthly ADC to calculate incentive payment

Load Flexibility Adjusted Demonstrated Capacity Incentive Rates ($/kW-month)

Month	$/kW-month
May	$5.86
June	$7.10
July	$9.79
August	$13.42
September	$15.41
October	$9.00
Season Total ($/kW-yr)	**$60.58**

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Option 4 Performance-Adjusted Incentive Payment (cont'd)

- If the cumulative incentive payment across all months in the program season is a negative quantity, the seasonal payment is set to zero

- For performance below 50 percent of nominated capacity, an additional 50 percent of the nominated capacity incentive in that month shall be deducted (**penalty**) from other load flexibility VPP incentives earned by the provider in other months of the program year

- Refer to guidelines for complete rules

Figure 5: Performance-Adjusted Incentive Payment Illustration

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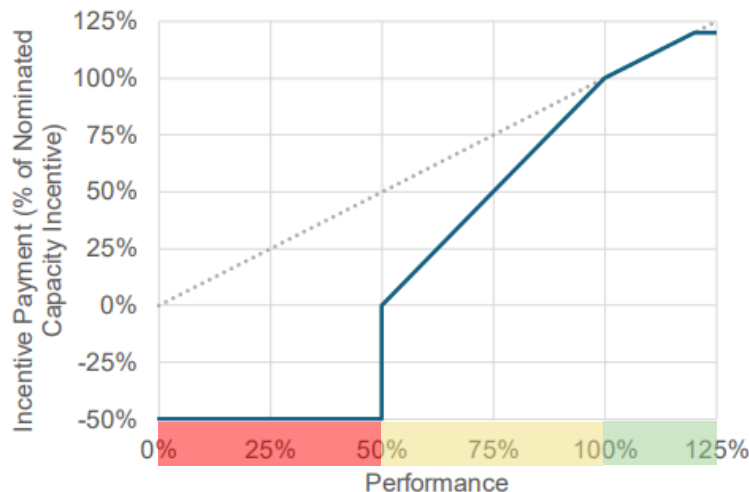
Option 4 Claims Process Overview

1 **Gather Documents for Claim Package**
- Option 4 Claim form
- DSGS Attestation
- **Submission deadline for 2025 : November 28**

More information on claim to be provided near end of the season

2 **Upload Claim Package to Program Website:** https://dsgs.olivineinc.com/upload/
- Note that meter data / runtime data is required each month, not at the end of the season

3 **DSGS Program Team Calculations, Review, and Approval**
- Checks include completeness of documents and agreement between participant reports and claim form

4 **Incentive Summary sent to Provider for Approval**

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Q & A

For more information, please contact DSGS Support or check out the DSGS Program Website

DSGS Support
dsgs-support@olivineinc.com
(866) 208-6352

DSGS Program Website
dsgs.olivineinc.com

THANK YOU!