



olivine™

Excess Supply Pilot Introduction

Outline

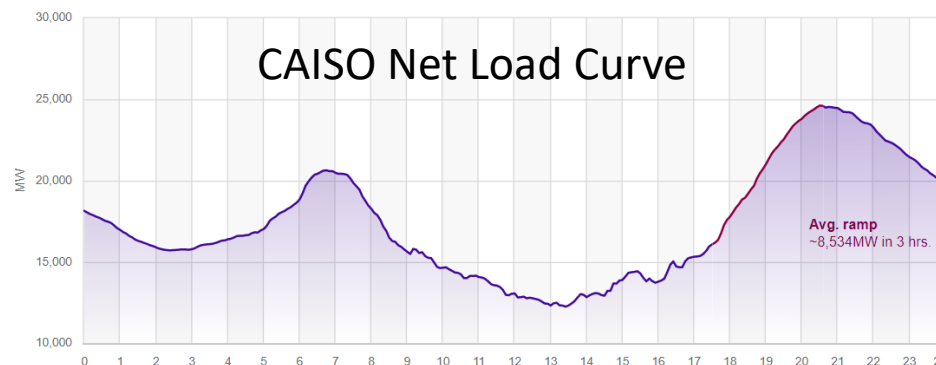
1. Design
2. Requirements
3. Settlements



Excess-Supply Pilot (XSP) Design Features



- Grid needs are time-varying
- Flexible resources are better able to accommodate grid needs
- Goal is to shift loads away from times of limited supply to times of abundant supply

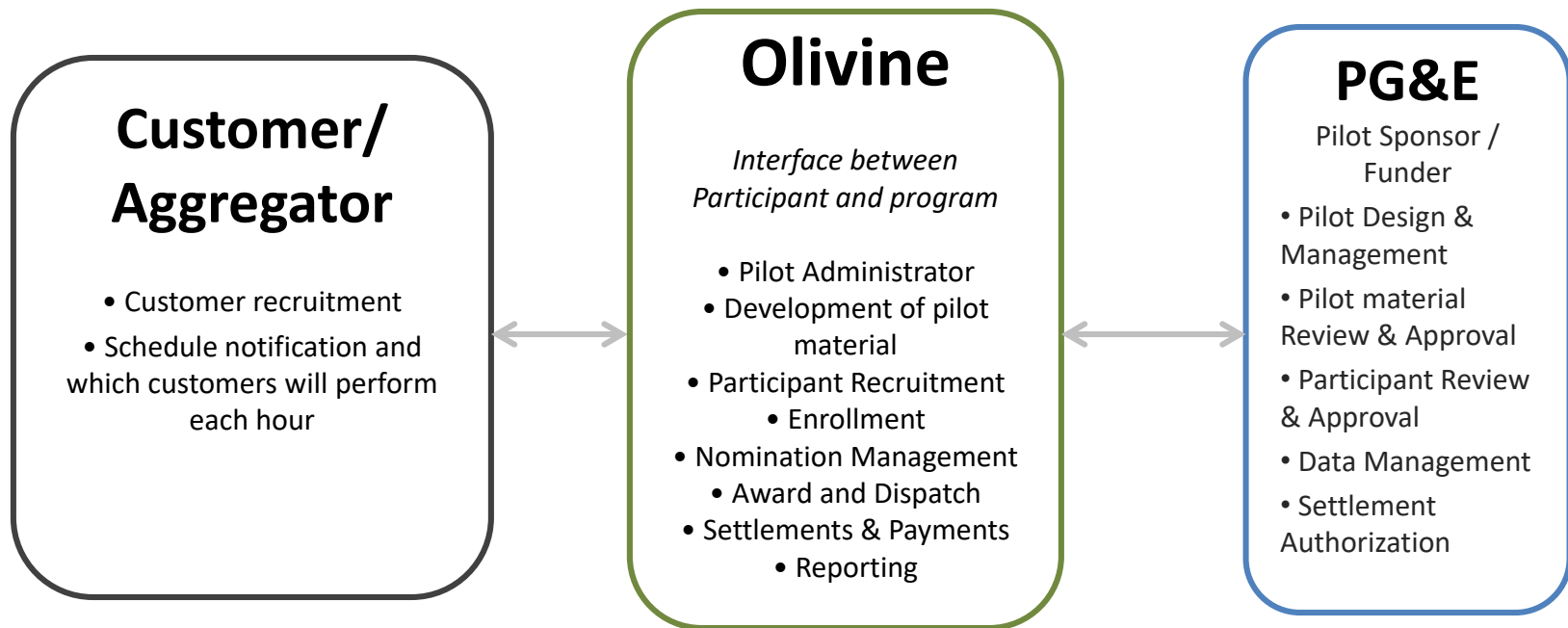


XSP Design Features



- Participants will nominate load increase:
 - Select 5 availability hours between 8am to 4pm
- Dispatches:
 - From over-generation forecast
 - Economic based on participant bids
 - Dispatches are 1 or 2 hours
- Performance calculated with a baseline
- Up to \$10/kW-month payment
- Option: Elect to decrease load
 - 5 availability hours from 4pm to 9pm
 - Potentially wholesale market integrated

Roles

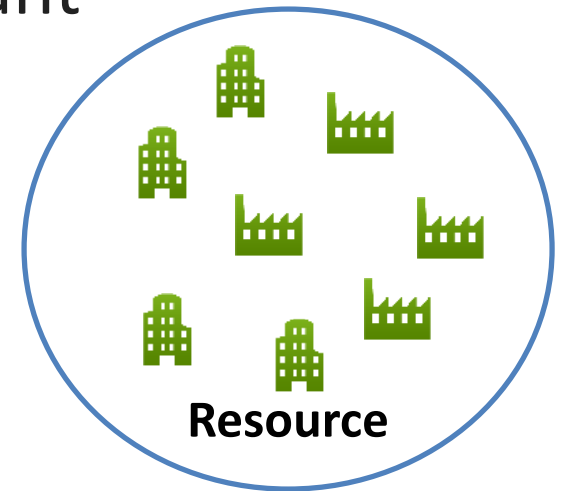


Design > Requirements > Settlement

Eligibility Criteria



- One or two resources per participant
- Locations cannot be speculative
- All locations within same Sub-LAP



- Each resource must be able to deliver 30kW
 - two **(2)** consecutive hours of increase
 - four **(4)** consecutive hours of decrease

Eligibility Criteria



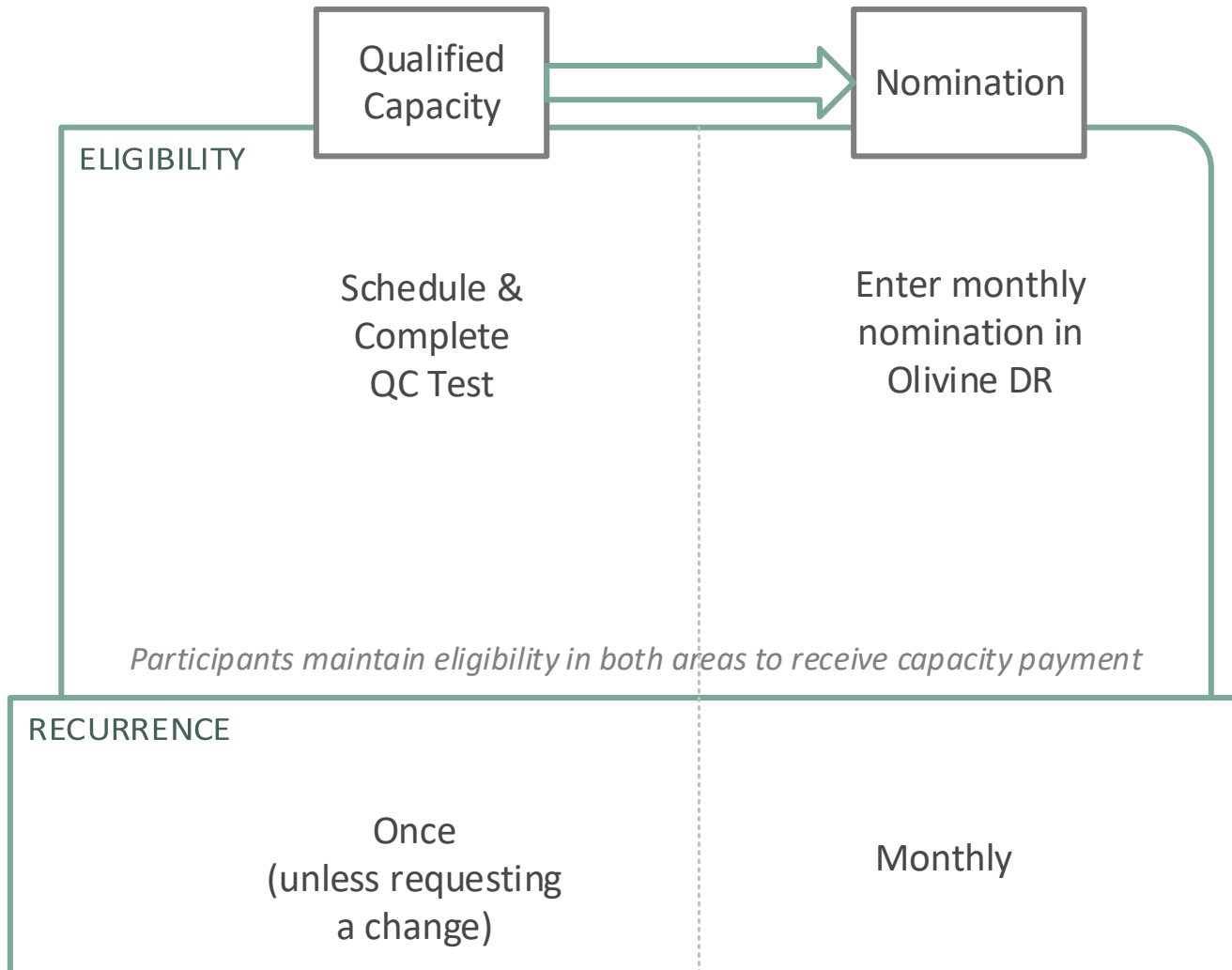
- Underlying customers may **not** be on any other DR program or rate
 - Including PDP / SmartRate
 - Must first de-enroll

Pilot limitations



- Total capacity award may be limited
- All underlying customers must be interval metered
 - Limits on number of locations
 - Limits on registration changes

Pilot Requirements (Overview)

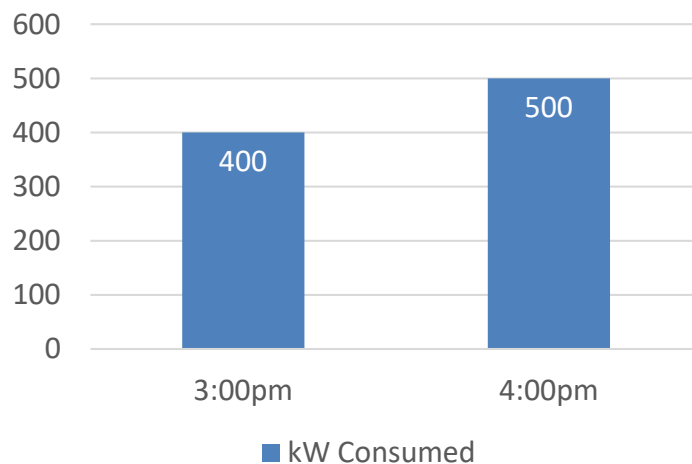


Design > Requirements > Settlement

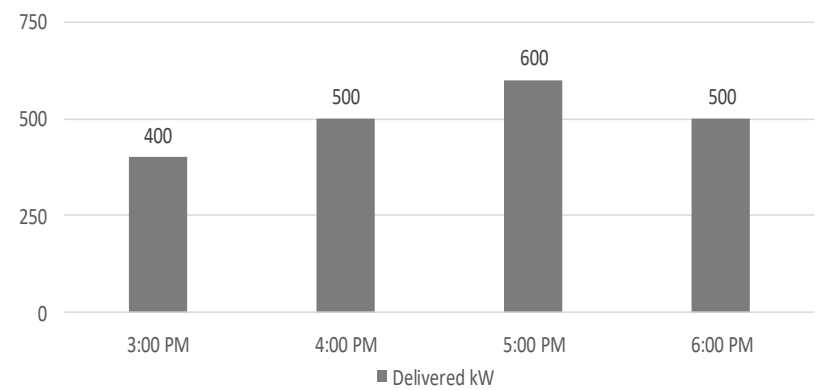
Qualified Capacity (QC)

- Load Increase QC & Load Decrease QC
- QC = Max quantity that can be nominated into XSP
- Test of average additional energy consumed over the period

$(400 + 500) / 2 = 450 \text{ kW}$
Increase Qualified Capacity



$(400 + 500 + 600 + 500) / 4 = 500 \text{ kW}$
Decrease Qualified Capacity



XSP Nominations



- Participants nominate a monthly kW capacity and for load increase and decrease
- $30 \text{ kW} \leq \text{Nomination} \leq \text{QC}$
- Availability:
 - Load Increase: 5 hours between 8am – 4pm
 - Load Decrease: 5 hours 4pm – 9pm (optional)
 - 5 days (non-holiday weekdays only) or 7 days a week
- Dispatch notifications day ahead
- OpenADR optional

# of Days	Max Expected Hours per Month	Load Increase/Decrease Hours	\$/kW-month (load increase)	\$/kW-month (load decrease)
5	24	12/24	\$6	\$2
7	24	12/24	\$8	\$2

Design > [Requirements](#) > Settlement

Bid Prices For Load Decrease



- Enter hourly bid prices (\$/kWh) for all load decrease availability hours, 4pm-9pm.
- Dispatches based on bid price and wholesale market price.
- Price ceilings and floors set administratively

XSP Nomination Examples



- Examples of nominations into the XSP, all using a 100 kW capacity

M-F: 8am-1pm (increase)

M-Sun: 11am – 4pm (increase)

M-Sun: 9am-2pm (increase); 4pm-9pm (decrease)

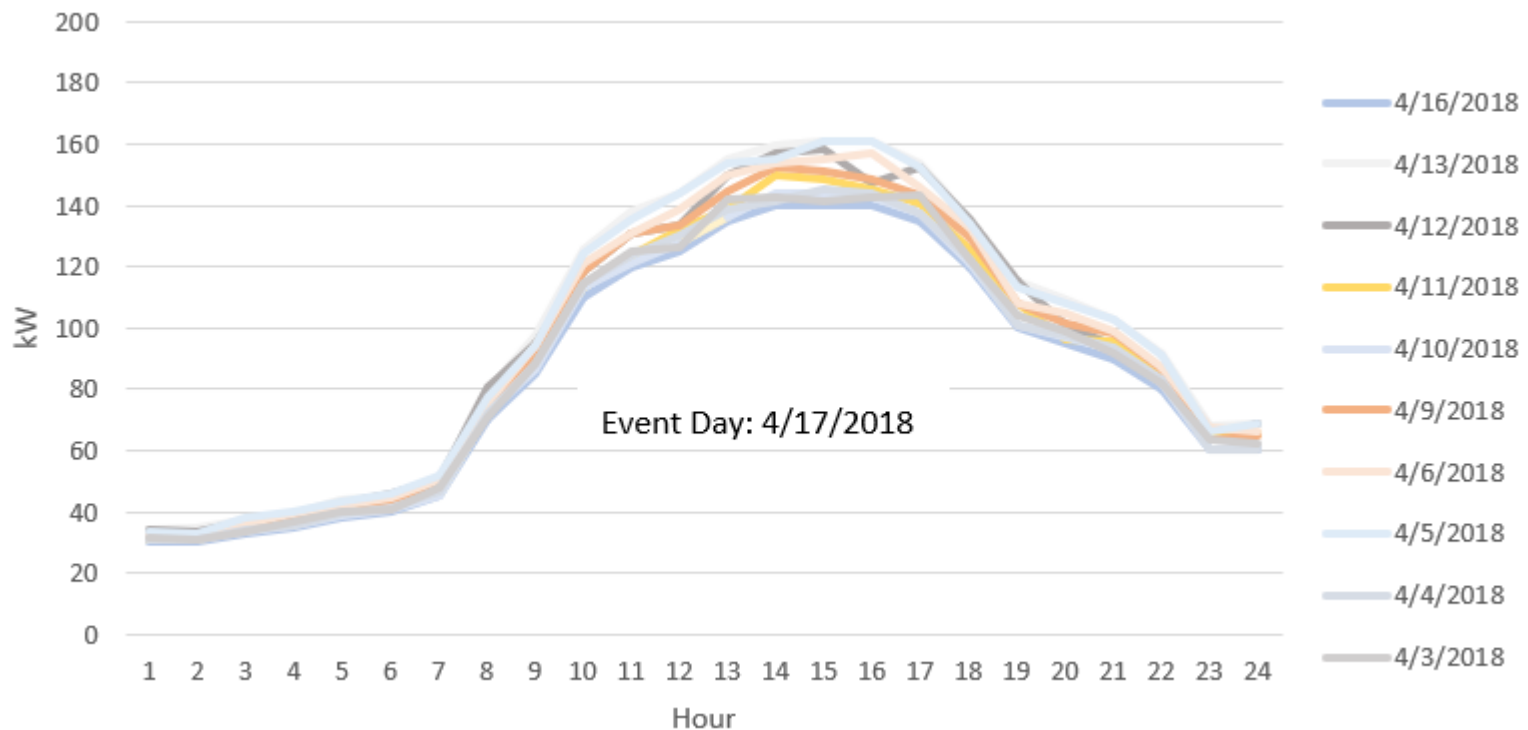
How is performance measured?



- Utilizing “10-in-10” Baseline
- Uses average of the whole premises meter data **(i.e., no sub-metering)**
- Delivery
 - Increase: Load minus baseline
 - Decrease: Baseline minus load
- Hourly Performance
 - Ratio of hourly delivery to the nomination
 - Hourly performance has no “zero” floor

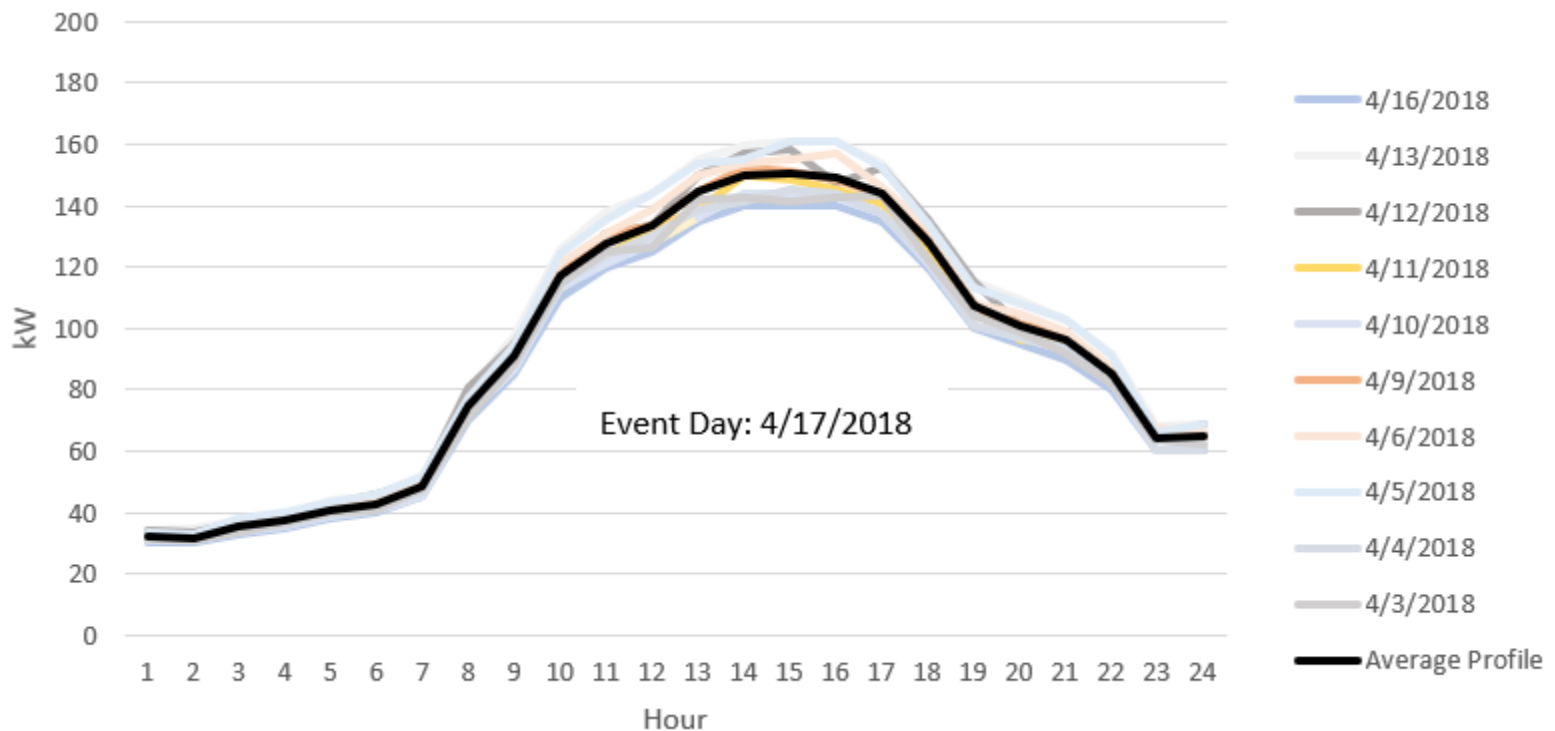
Baseline Step #1

- Identify 10 similar, non-event days



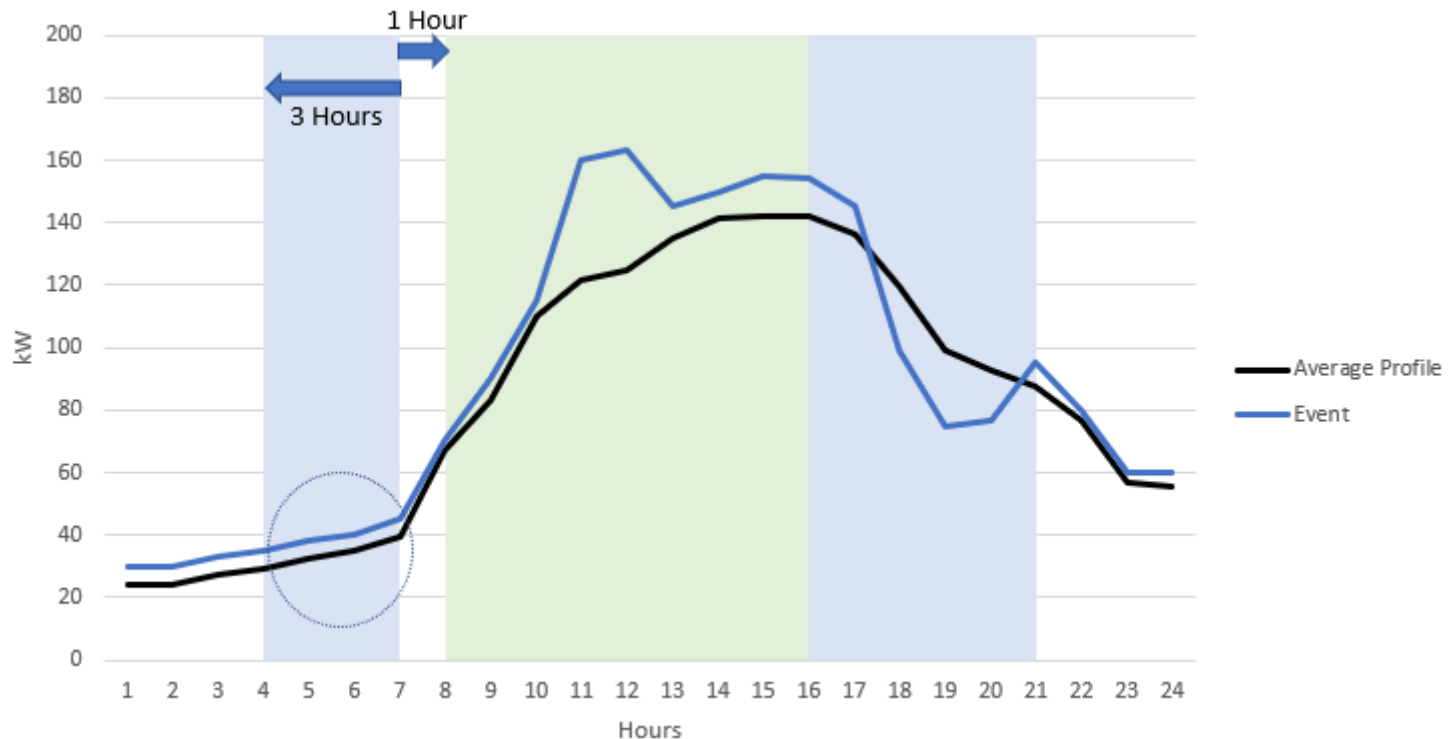
Baseline Step #2

- Calculate Average Profile



Baseline Step #3

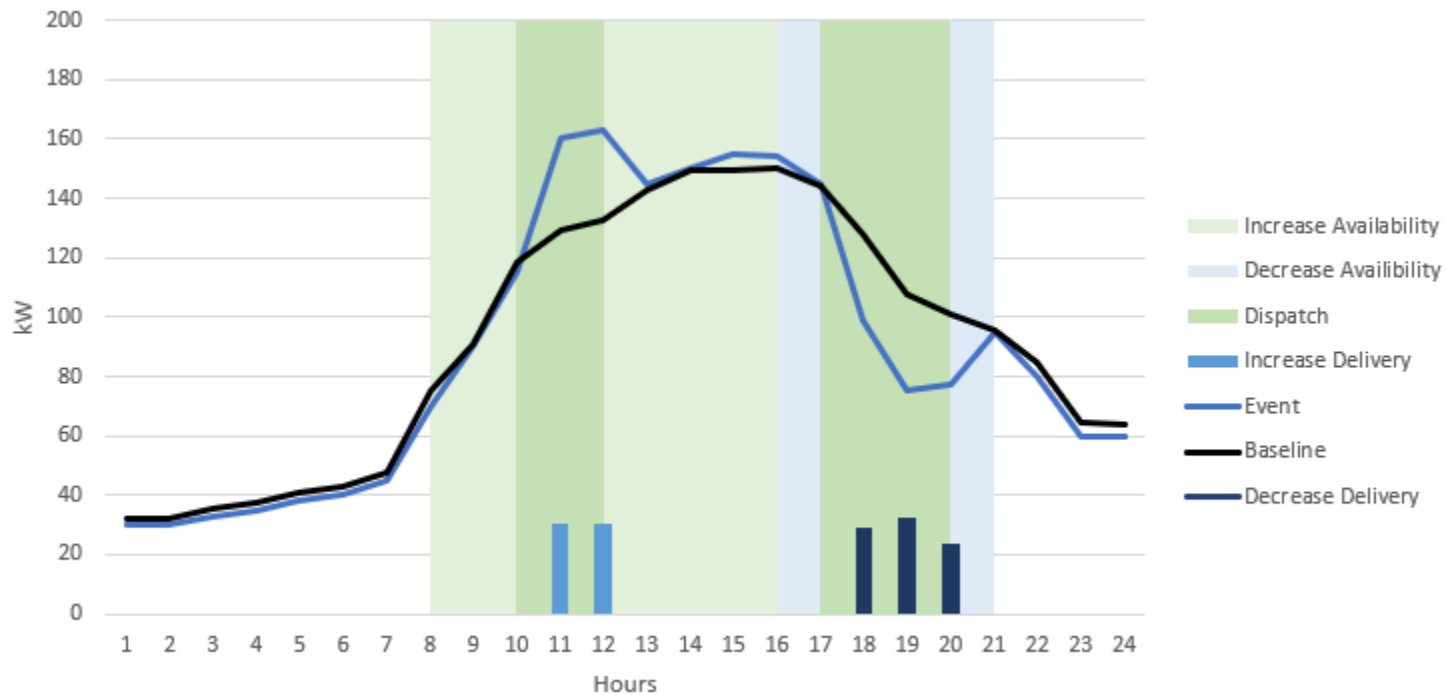
- Determine day-of adjustment
 - 1 hour prior to event, take preceding 3 hours and shift average profile up to $\pm 20\%$



Design > Requirements > Settlement

Event Performance Calculation

- Event period minus baseline



Design > Requirements > Settlement

Settlement



Sources of revenue from XSP:

- Load Increase Capacity Payment:
 - \$6/kW-month or \$8/kW-month
 - No energy payments
- Load Decrease Capacity Payment:
 - \$2/kW-month
 - Wholesale market settlements (if integrated)

- Dependent on fulfillment of pilot requirements above and performance

Note the pilot is intended to influence *when* energy is consumed, not *how much* energy is consumed.

Design > Requirements > Settlement

Capacity Payments



- If monthly pilot requirements are met, then:

Capacity payment =

[Capacity Price] x [Nomination] x [Monthly Performance]

- Load increase and load decrease calculated separately
- **Capacity Price:** \$6 or \$8/kW-month
- **Nomination:** Monthly kW number chosen by participant
- **Raw Performance:** Simple average of each hourly measurement of performance
- **Monthly Performance:** (see next slide)

Adjustment Factor



Raw Performance	Adjusted Performance
$1.00 < x$	1.00
$0.20 < x \leq 1.00$	x
$x \leq 0.20$	0

Demand Charge Offsets



- Customers with TOU demand charges may be eligible for compensation for any new demand charges that are a direct result of XSP.
- Max Peak Demand Summer, Max Part Peak Demand Summer/Winter
- Will not compensate for Max Demand Summer or Max Demand Winter

Enrollment Process	Responsible	Deadline (in Calendar time before the first trade date, T)
Declaration of Interest Form	Participant	
Enrollment Workbook, CISR Form, Customer Acknowledgement Forms (<i>Aggregators only</i>), Pilot Contact Form	Participant	T – 5 weeks
PG&E Eligibility Check	PG&E	T – 4 weeks
Participation Agreement Executed	Participant	T – 4 weeks
Pilot Training	Participant, Olivine	T – 2 weeks
Qualified Capacity Test	Participant, Olivine	T – 1 weeks
Hands-on Training	Participant, Olivine	T – 1 week
>>>Begin Operations		T

Conclusion: *Participant Next Steps*



- Complete DOI forms (if haven't already)
 - 2 resources per participant, with limits on capacity & number of locations
- Complete enrollment forms ASAP
- Contact:
 - Pge-pilots@olivineinc.com
 - <http://olivineinc.com/xsp/>