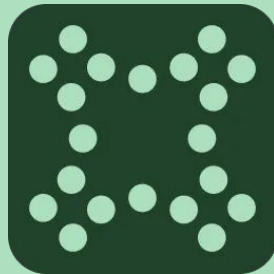


OpenEAC Alliance

Quarterly Meeting
Q4 2025
November 20, 2025

McGee Young
Stephen Suffian





Agenda

1) Welcome and review of existing resources

- www.openeac.org
- methods.openeac.org
- <https://github.com/wattcarbon/open-eac-alliance>

2) Quarterly update

- Deep dive on demand response and load shifting methods
- Generalization of Electrification Weather Normalization to incorporate EE

3) Roadmap

- Battery methodologies (direct, FIFO)
- Generator vs grid switching

4) Discussion



OpenEAC Alliance Resources

- www.openeac.org
- methods.openeac.org
- <https://github.com/wattcarbon/open-eac-alliance>
- docs.wattcarbon.com



Methodology Development Process

- 1) Draft methodology developed for implementation by one or more stakeholders
- 2) Preliminary release for public comment/review
- 3) Methodology revised and submitted
- 4) Final version published for review at methods.openeac.org
- 5) Open source license for future use



New Methodologies Released

- 1) [Demand Response](#): Whole-Building Meter Data & Short-Term Counterfactual, Weather-Normalized Regression
- 2) [Load Shifting](#): Whole-Building Meter Data and Weather-Normalized Regression

Explicit Demand Response

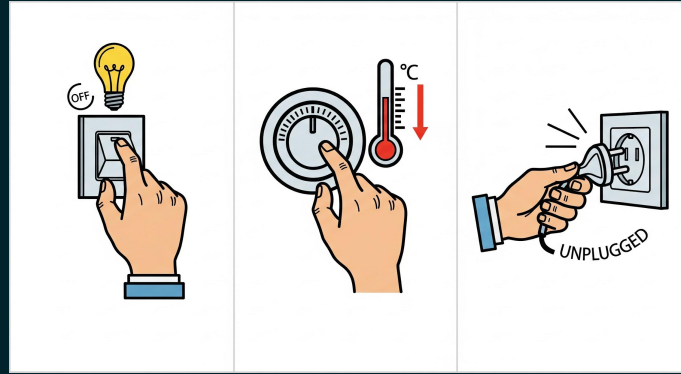
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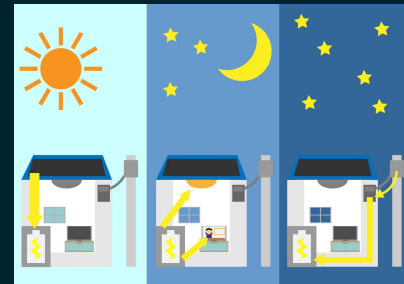
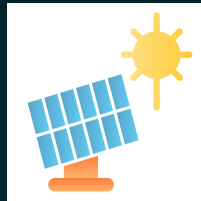
Demand Response



DR is an event-based reduction in energy for a particular period of time (typically 1-3 hours).



We must predict what would've otherwise happened if this event hadn't existed.

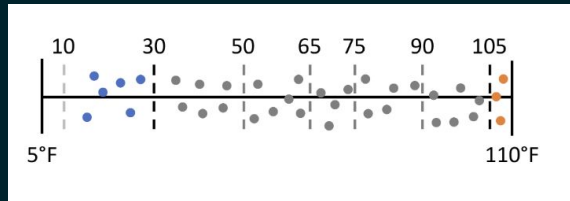


OpenDSM - EEMeter

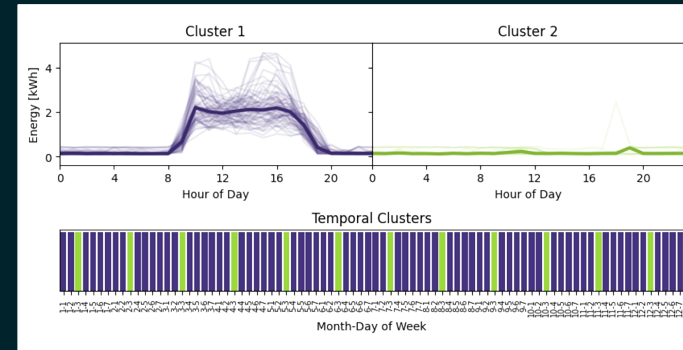


OpenDSM models whole-building, hourly, temperature-driven and temporal usage patterns.

Temperature Bins



Temporal Clusters



Typically requires 1-year of baseline data to build long-term reporting period counterfactual.

OpenDSM for Demand Response



A shorter baseline is sufficient to capture how a DR event differs from recent consumption.

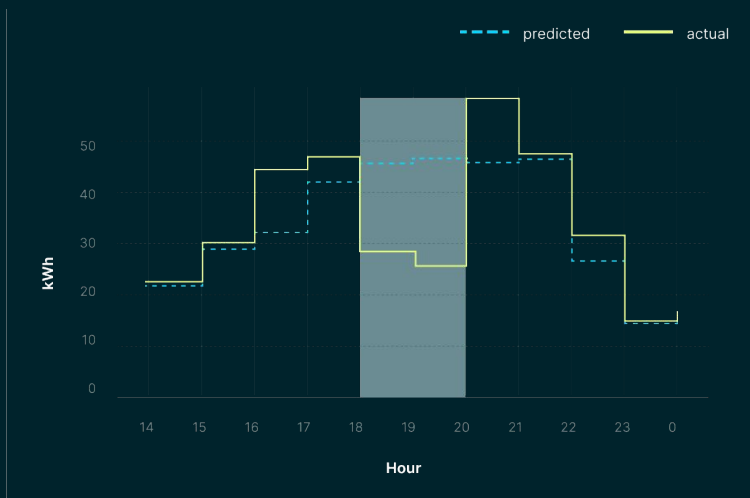
Since an event period is short and rare, our prediction only needs to model the building under similar weather conditions to the event.

The baseline length should be 28-days, but the baseline data may be adjusted with justification in the M&V plan.



Methodology Steps

- **Data Requirements**
 - **Hourly electricity consumption**
 - **Localized hourly temperature**
- **Construct OpenDSM model on short (28-day) baseline period preceding the event**
- **Predict over event window**
- **Subtract the counterfactual from observed to get savings in the event window.**





Methodological Decisions

1. **By default, include prior-event days in baseline**
 - a. **Allow for M&V plan to decide**
2. **We intentionally don't incorporate bounce-back effects**
3. **We allow for adjustable baseline (within limits)**
 - a. **Seasonal constraints (such as beginning of summer) may require shorter**
 - b. **If prior-event days are excluded, may require longer**
 - c. **Future work may lead to adjustments in suggested length**

[Methodology URL](#)

Load Shifting/Implicit Demand Response

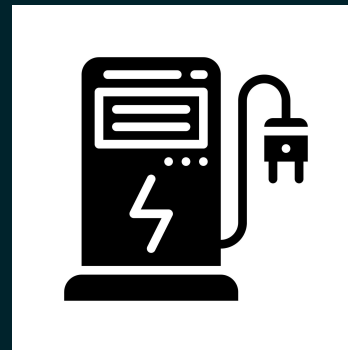
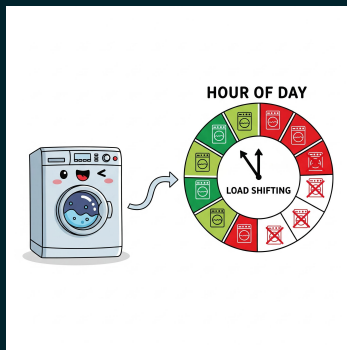
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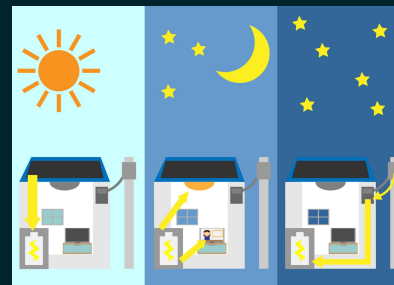
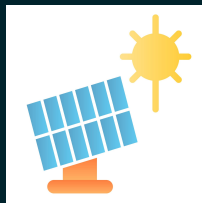


Load Shifting

Load Shifting is a persistent, ongoing shift in energy from one time period to another period.



We must predict what would've otherwise happened if this shift didn't occur.

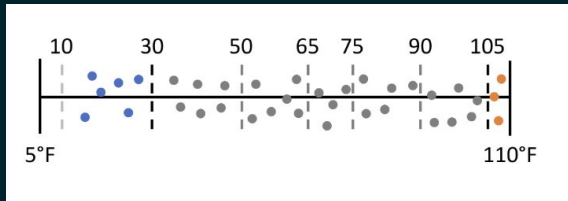


OpenDSM - EEMeter

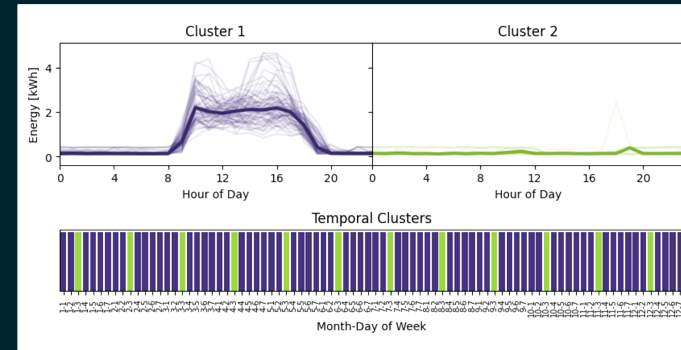


OpenDSM models whole-building, hourly, temperature-driven and temporal usage patterns.

Temperature Bins



Temporal Clusters





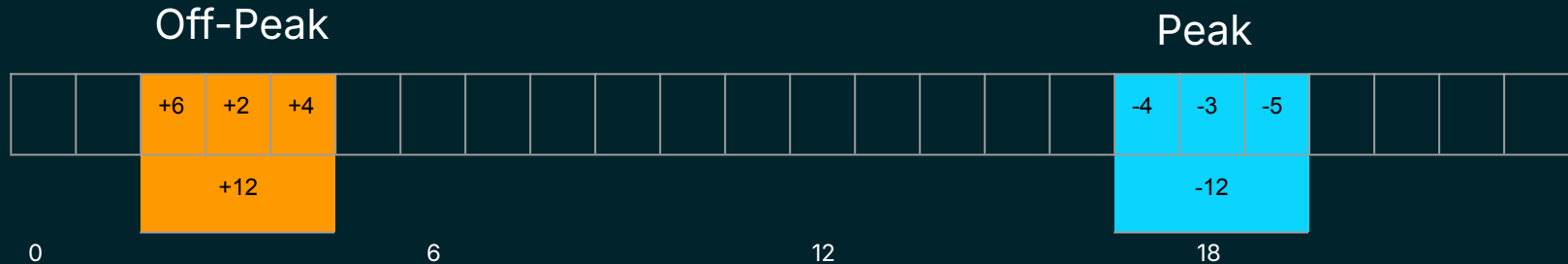
Methodology Steps

- **Data Requirements**
 - Hourly electricity consumption
 - Localized hourly temperature
 - Defined Peak and Off-Peak Windows (either fixed or time series)
- **Construct OpenDSM model on a 1-year baseline period preceding the change in schedule**
- **Predict over the measurement period**
- **Subtract observed from prediction to calculate hourly savings**
 - Differs from an energy efficiency methodology by recognizing this project shifts energy from one intra-day period to another intra-day period
 - We shift load from Peak to Off-Peak

Constraining OpenDSM to Load Shifting Impacts



We want to only measure impacts that we can reasonably attribute to deliberate load shifts.

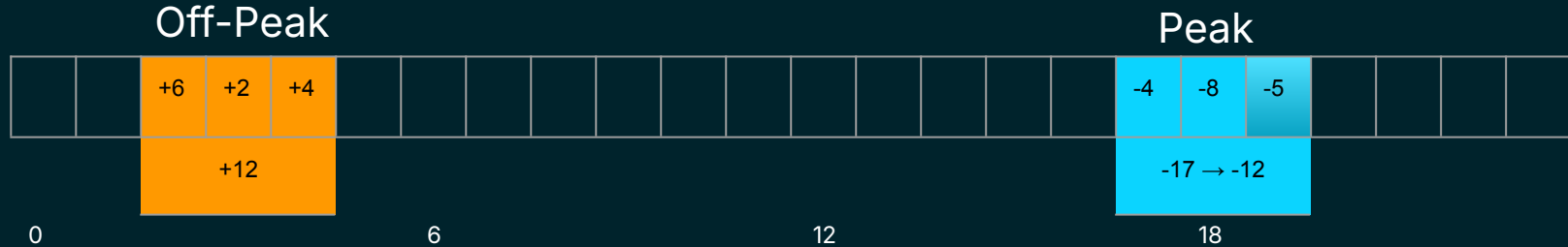


In this example, the impact of the intervention leads to energy increases in the off-peak window and decreases in the peak window.

Constraining OpenDSM to Load Shifting Impacts



Savings in the peak window is constrained by the level of increase in the off-peak.



In this example, only 12 kWh of off-peak increases can be attributed to peak decreases, despite additional decreases occurring in the peak window.



Methodological Decisions

1. **Specific hours of Off-Peak increased consumption are assigned to specific hours of Peak savings**
 - a. **Used for 24-hour and savings cap constraints**
 - b. **Provides a mechanism for assigning net carbon impact**
2. **Peak/Off-Peak windows must be defined, but the definition allows for dynamic updating (e.g., day-ahead price signal)**

[Methodology URL](#)



Roadmap

- Battery
 - FIFO
 - Direct
- Generator fuel switching
 - Onsite power generation vs grid



Next Meeting

Next Meeting: February 19th, 2026

Sign up here: www.openeac.org

Submit a methodology!