

# DER-VET Task Force

## ESIC Working Group 1: Grid Services and Analysis

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September 1, 2022



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# Agenda

- Reference Cases Update
- Software Update



# Reference Cases Update

# New Reference Case Available (Flow Battery)

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## Command-Line Cases

- **Energy Shifting Value Across US ISO\_RTOs 2020**

This command-line only case implements a broad scenario analysis of the energy time shifting value of Lithium ion-like energy storage in all US ISO/RTO regions at durations ranging from 2 to 96 hours.

  - [Presentation Materials](#) | [Project Data Files v1.1](#)

## Other GUI Cases

- **CAISO Market with Degradation**

This case modifies the CAISO Market reference case to include some information about degradation. A cycle life curve is included and a penalty on energy throughput (variable O&M) is added to reduce low-value cycling and maximize the energy shifting value of the system over its life.

  - [Presentation Materials](#) | [GUI v1.2 Import Files](#) | [GUI v1.1 Import Files](#)
- **Flow Battery Plus EV Demo**

An 8-hour duration, 63% roundtrip efficiency storage system is used to shift energy based on 2021 Long Island wholesale energy prices and participate in resource adequacy. This is paired with a large electric vehicle charging load, which is curtailed when the price of energy climbs too high.

  - [GUI v1.2 Import Files](#)



# Software Update



# DER-VET Software Update

- Latest Version: v1.2.2 (updated July 11<sup>th</sup>, 2022)
- Bugs and Features being worked on currently:
  - Optimization errors with multiple batteries
  - DR service should be compatible with other services
  - Reliability Sizing with PV is buggy
    - If the outages with the most critical load are exclusively during solar hours, the algorithm that checks for feasibility in all outages fails.
    - Applies to short reliability targets where storage is being optimally sized with PV and/or generators
  - Add validation tests on pre-defined use cases
  - RA and DR revenue should grow each year after the optimization year
  - Disallow negative DA energy prices when sizing any technology
- **New Bugs:**
  - Cost vs. Benefit by Value Stream GUI plot fails to render Stacked Benefits in some cases
  - External Incentives in the GUI should apply to the Start Year, if called for
- *We expect to release an update in the coming weeks this month (September)!*



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