FINDINGS FEBRUARY 2022

ENABLING CLEAN ENERGY IN DISADVANTAGED COMMUNITIES WITH INTEGRATED PV + STORAGE

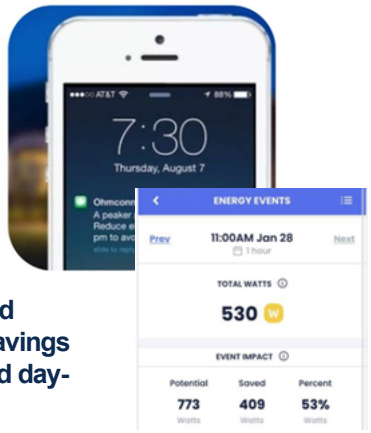
TECHNOLOGY INNOVATIONS

Pioneering experiment with rigorous data collection exploring these cutting-edge technologies:

Bifacial PV + Storage

- Two 60 kW bifacial solar PV arrays
- Two 60 kW EnergPort battery cells
- Optimized use of limited roof space (target efficiency of 23%)
- ZNE pathway for multi-family & commercial buildings

Project-Level Controls Objectives

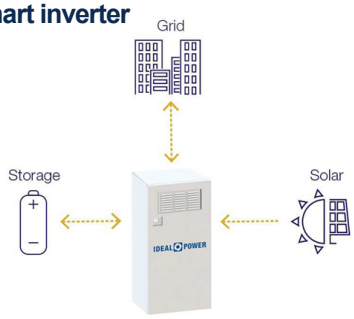


- Cloud-based multi-level controls integration
- Virtual NEM community-sharing business model
- Incorporated TOU - related messaging and energy savings tips into its day-ahead and day-of notifications

Multi-Port & DC-coupled Inverter

3 port bi-directional AC/DC smart inverter

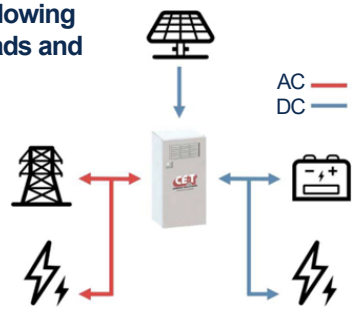
- Allows individual control of storage and PV modules
- Grid-support functionality fulfilling Rule 21 Phase 1 mandates
- RT Efficiency of 97% and avoids conversion losses



DC Distribution & Appliances

Power conversion system allowing simultaneous DC and AC loads and multidirectional power flow

- Low-voltage DC interconnected system
- 24V DC lighting loads
- Variable speed mini-heat pump working in native DC and an AC mode



APPROACH

The evaluation approach analyzed the following metrics:

- Battery and PV Functionality
- Time of Use Utility Rates
- Multiple Battery Control Scenarios
- Energy Utilization pre- vs post-treatment
- Load Shed DR Performance
- PQ Implications

EPRI collected data at 1-second, 1-minute, or 15-minute intervals

FINDINGS

What were the major findings?

$253 MILLION
IN BILL REDUCTION POTENTIAL
IF EXTENDED TO CALIFORNIA'S LOW-INCOME HOUSEHOLDS

THE ALTERNATE BUSINESS MODEL WORKS

- Lowered Costs
- Economic Development
- Greater Reliability
- Environmental Safety

CONCLUSIONS

What were the major conclusions from the study?

The demonstration offers lessons for more effective project, program, and policy targeting the low-income multifamily sector

Lowered costs for the property residents + More load flexibility and benefits for the utility + Technology implementation pathways