



MODELING GRID SERVICES & UTILITY BILL SAVINGS WITH ENERGY TOOLBASE

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SPEAKERS



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WEBINAR AGENDA

Co-Optimization of Grid Services & Utility Bill Savings

What is the Demand Side Grid Support (DSGS) Program

The History of Demand Response Programs

How Does Acumen EMS™ Optimize for DR programs?

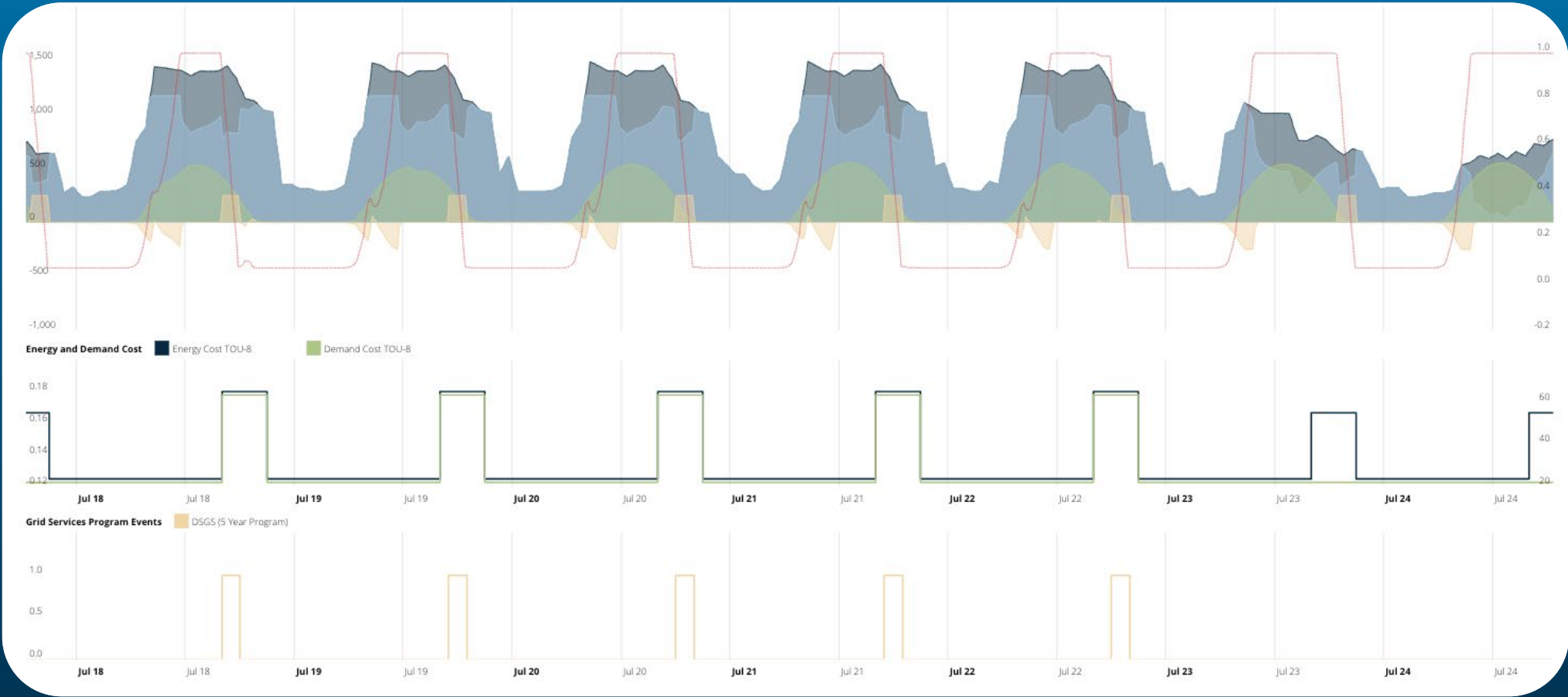
Demo & Examples of Modeling Grid Services

Modeling Technology Powering the New Feature

Overview of the DSGS incentive in ETB Developer

Q&A

GRID SERVICES OPTIMIZATION



DSGS PROGRAM



- **Demand Side Grid Support Program (DSGS):** Incentive program that the California Energy Commission (CEC) has worked to create that compensates participants for reductions in net energy load during extreme grid events.
- Grid support is achieved through the management of demand.

DSGS PROGRAM

Program Eligibility

There are three ways assets can participate in the program. Energy Toolbase provides modeling and execution for the “Market-Aware Behind-the-Meter Battery Storage Pilot”

Eligible battery storage projects must:

- ✓ Have at least a 2-hour, 1kW battery
- ✓ Not dispatch more than 1MW during an event
- ✓ Not participate in a conflicting demand response program
- ✓ Remain in compliance with their interconnection agreements



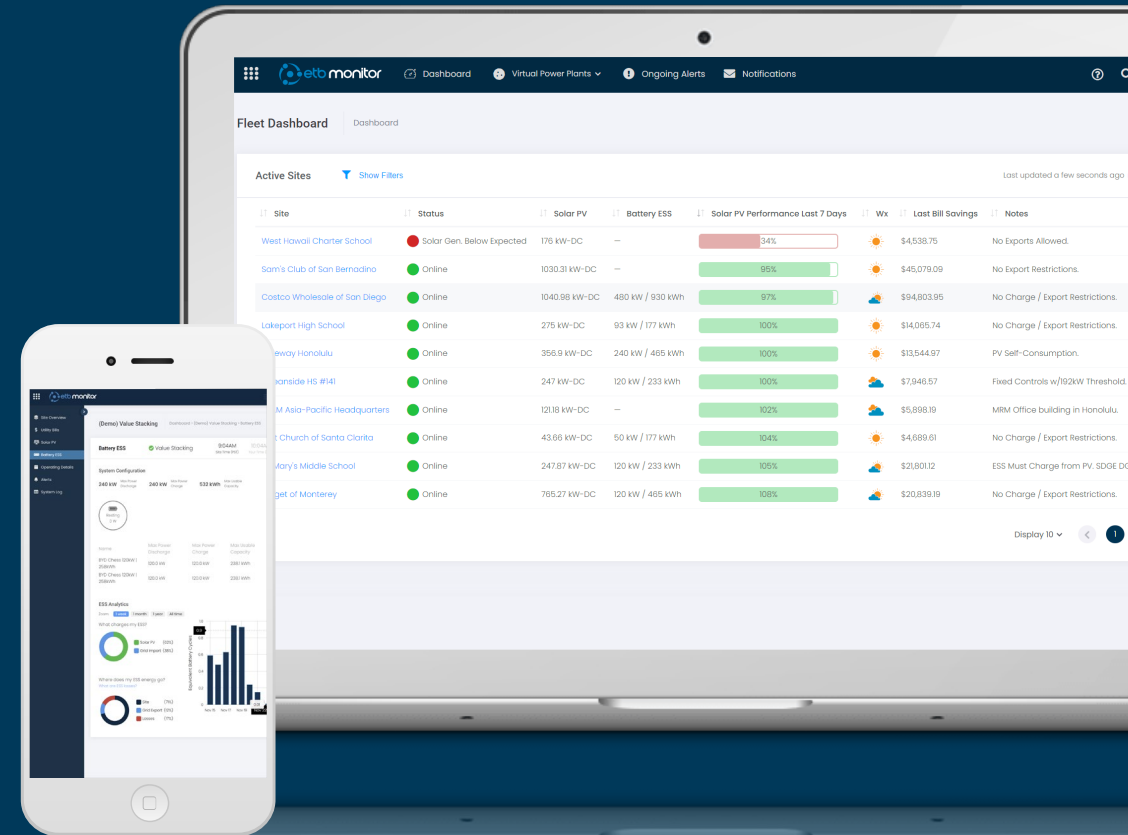
HOW THE PROGRAM WORKS

01 The program operates throughout the months of May through October, 7 days a week.

02 Energy Toolbase receives events when the grid requires support, when the Day Ahead Location-Based Marginal Price exceeds \$200/MWh during the 4-9 PM window.

03 There are a maximum 35 events per year that count towards the revenues you earn.

04 There is at least one event per month.



DSGS PERFORMANCE

- Performance is based on the average demand reduction for each month and each month's performance is multiplied by a different price to calculate the total revenue generated in a month.
- Measurement and verification are done using metering hardware.

Table 2: Monthly BTM Storage Capacity Prices by Month (\$/kW)

Month	4-Hour	3-Hour	2-Hour
May	\$9.00	\$8.10	\$6.75
June	\$9.30	\$8.37	\$6.98
July	\$16.80	\$15.12	\$12.60
August	\$18.00	\$16.20	\$13.50
September	\$19.20	\$17.28	\$14.40
October	\$10.50	\$9.45	\$7.88
Annual Total	\$82.80	\$74.52	\$62.10

Source: CEC staff analysis

WHAT MAKES DSGS ATTRACTIVE?



IT IS SIMPLE TO EXPLAIN

- Easy to sell to your customers
- Not as complicated as other Grid Services



IT IS SIMPLE TO ENROLL

- ETB can help you enroll customers & receive value



IT IS SIMPLE TO OPERATE

- ETB's optimization technology will analyze value & revenues



HISTORY OF DR PROGRAMS

Demand Response programs & Demand Side Management programs have been around since the 1960s & 1970s.

Historically it has been based on the idea of demand reduction.

Increased electrification has driven the development of DR programs nationwide.

Inconsistent supply coupled with inconsistent demand can cause periods of significant strain on the grid.

The advent of DERs – facilities may no longer need to curtail their loads to participate in these programs, they could instead deploy the assets they already purchased.

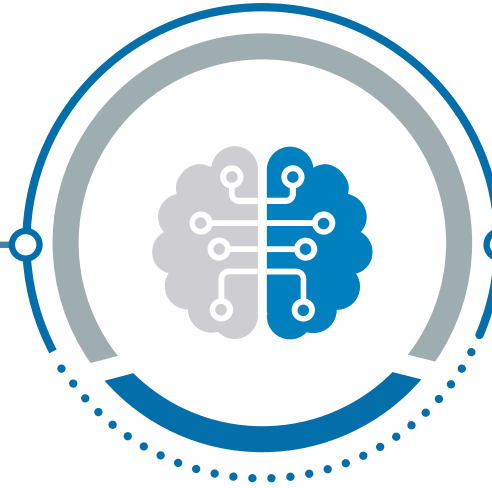
HOW DOES ACUMEN OPTIMIZE FOR DR?



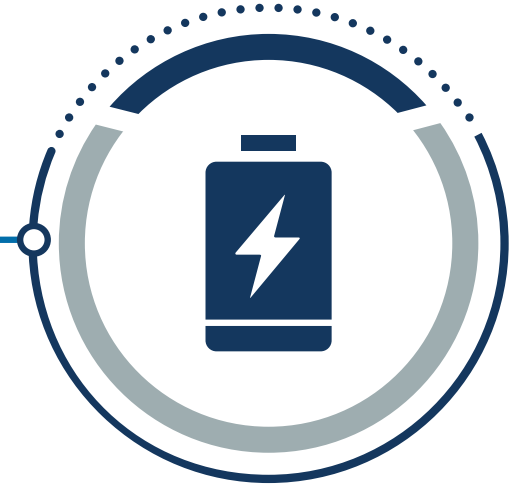
Acumen typically optimizes for utility bill savings.



When a DR notification is received, our cloud infrastructure transfers that event to Acumen.



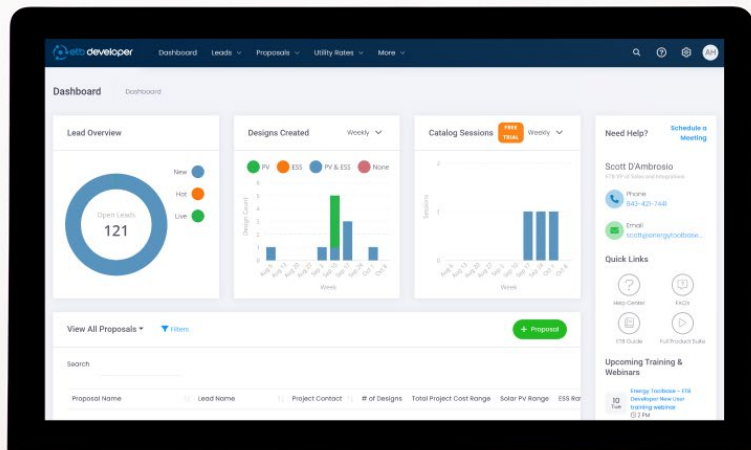
Acumen uses its forecast and optimization engine to plan ahead and ensure that energy is available in the battery.



Acumen ensures that the energy is used during the event while maintaining your utility bill savings.



Q & A



THANK
YOU!

CONTACT INFORMATION



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