# A DRPP Technology Provider

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Who is Enerliance?

- Enerliance was founded in 2005 with a single purpose, deliver 50 years of HVAC Energy Efficiency and Building Automation expertise to the intersection of three high growth markets.
- The LOBOS (Load Based Optimization System) product suite is targeted towards the large commercial office, regional mall, and campus type properties.

Enerliance Product Suite

LOBOS EE — Energy Efficiency

LOBOS DR — Demand Response

LOBOS FDD — Fault Detection and Diagnostics
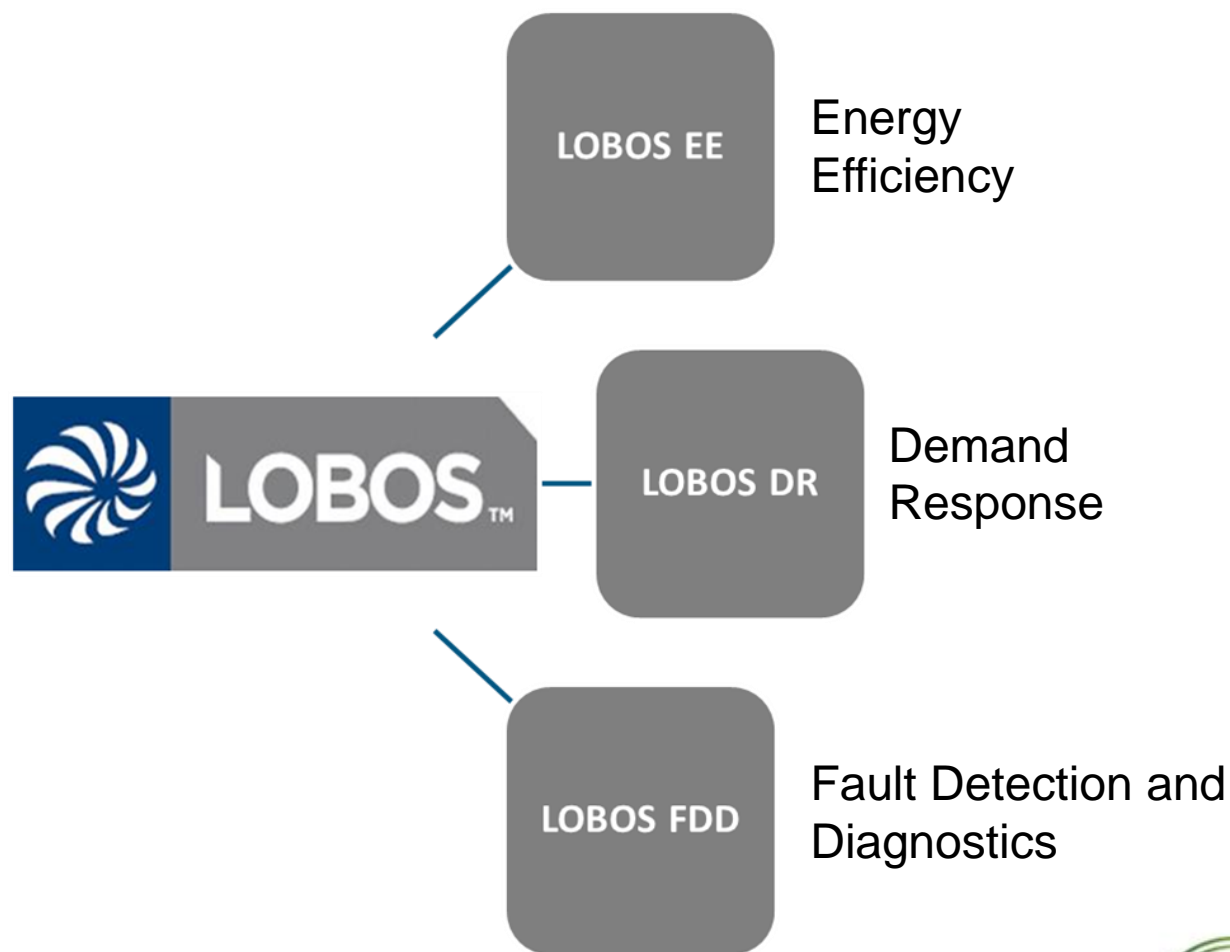
LOBOS Installations and Market Validation

| Data Point	Quantity
Total Buildings	301
Total Square Feet	49 Million
Total Auto-Demand Response Capacity	29 MW
Estimated Annual Energy Savings	$3.5 Million
Total DR Capacity Utility Tested	20 MW
Total Utility Incentives Received	$7 Million

Data Set
Includes all LOBOS installations from 2009 through August 2013. Includes all contracted LOBOS installations as of August 2013. Excludes all LOBOS based projects from 2005-2008

ADR Event Called – Now What?

	Curtailment Event	
Factor	Brute Force	Strategic
Baseline	Pre-Set	Selectable and Real-Time
Dispatch	Fixed	Dynamic
Comfort	Not Managed	Managed Impact

Actual ADR Event – Strategic Results
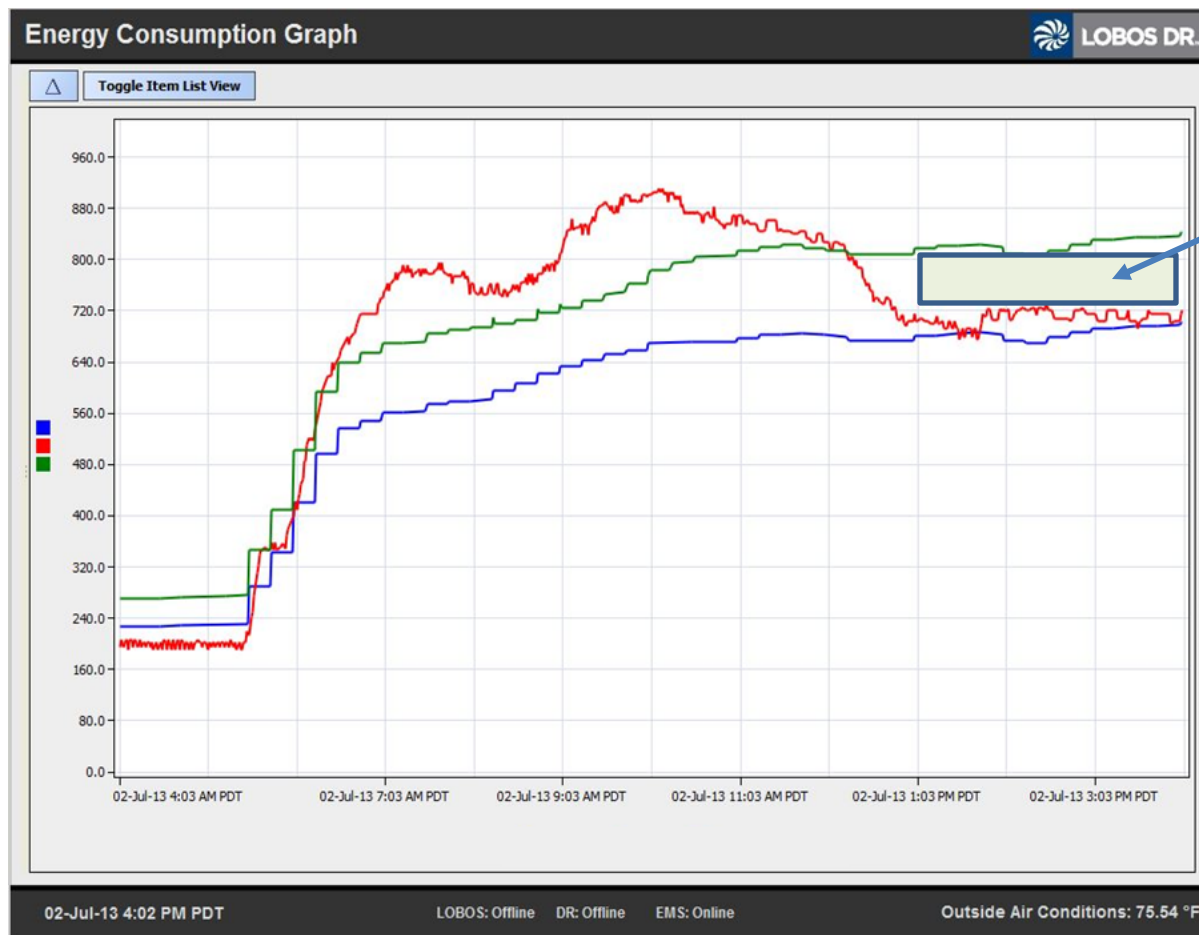
80kW Strategic reduction off adjusted baseline

Green - SCE Day of Event Baseline Adjustment

Red – Real Time Building kW Consumption

Blue - Real Time 10-Day Average

The Integrated EE and ADR Opportunity

245,356 = Commercial Buildings > 50k Square Foot

33 Billion = Square feet of commercial building space, a subset of 81 billion SF feet of commercial buildings

25 GW = Auto DR capacity.

21 = Nuclear Power Plants. Auto DR capacity equivalent to the electricity generated by 21 nuclear power plants.

46,000 GWh = Annual electricity savings

$5 Billion = Annual energy cost savings

Thoughts for Successful ADR Events

- Client focused rather than equipment focused.

- Curtailment via current baseline.

- Provide comfort resources in the building to meet demand loads at various zones.

- *We believe that any optimization system that sacrifices occupant comfort in favor of reducing energy costs will ultimately fail.*

Thoughts for Successful ADR Events

Class A Office Building Example

- Non-disruptive usability of large scale HVAC Automatic Demand Response capacity @ 1 watt per SF

- Assumes LOBOS 10 Stage controller, Auto DR Capacity of 600 kW and early afternoon start

  ½ Hour = 600 kW (100%)

  1 Hour = 300 kW (50%)

  2 Hour = 150 kW (25%)

  3 Hour = 75 kW (13%)

  4 Hour = 60 kW (10%)

- Dispatch at zone, building, portfolio or virtual power plant level.

Thank You

Enerliance is honored to be a part of the DRPP and to help shape successful Demand Response solutions for the US market first, followed by successful worldwide solutions.