

Session 3: Integrating Energy Efficiency with Demand Response

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Moderator: *Mary Ann Piette*

Lawrence Berkeley National Laboratory
PIER Demand Response Research Center

Sponsors: CEC, DOE, and NYSERDA

Speakers:

Lynda Ziegler, Southern California Edison

Chris Hall, New York State Research & Development Authority

Bob Kinert, Pacific Gas and Electric Company

Integrating Energy Efficiency with Demand Response

- * **Are there inherent conflicts?**
 - Does program incentive greater electricity on “baseline” days
 - Strategies to reduce kW result in more kWh?
- * **How can these programs be mutually beneficial?**



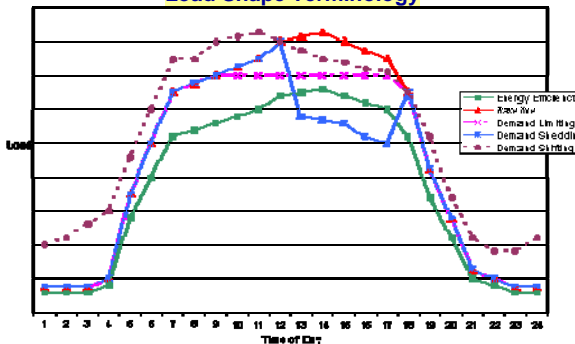
Energy Efficiency, Load Management and Demand Response

Demand Side Management			
	Energy Efficiency <i>(Daily)</i>	Peak Load Management <i>(Daily)</i>	Demand Response <i>(Dynamic Event Driven)</i>
Motivation	- Conservation - Environmental Protection	- TOU - Peak Demand Charges - Grid Peak	- Price - Reliability - Emergency
Design	- Efficient Shell, Equipment & Systems	- Low Power Design	- Dynamic Control Capability
Operations	- Integrated System Operations	- Demand Limiting - Demand Shifting	- Demand Shedding - Demand Shifting

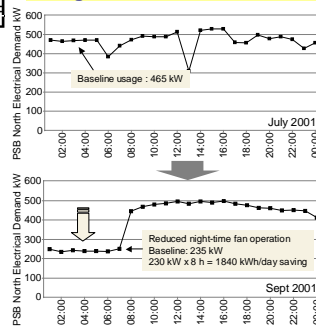
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Load Shape Changes are Key New Information Technology Improves Knowledge

Load Shape Terminology



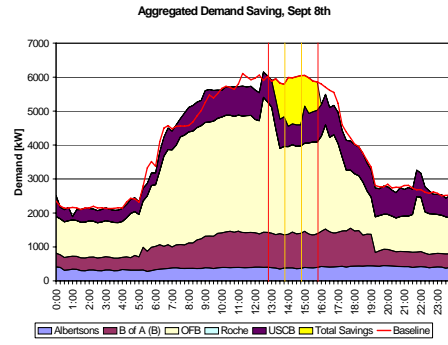
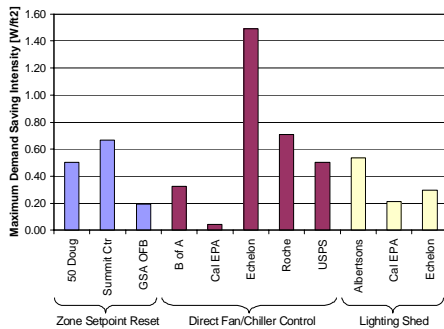
Load Shape Change at UCSB
Night Fan Use Identified



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Advanced Controls and Automation to Support Efficiency and DR

- * New knowledge needed for DR
- * Link to efficiency clear to Automated DR participants



Final report at drrc.lbl.gov

New York Times Head Quarters

NY Times/ Renzo Piano/ Fox & Fowle/ Gensler/ Flack+Kurtz/ Susan Brady Lighting

The Times/LBNL Challenge:

- * Prove integrated shading & dimming
- * Develop reliable robust technological solution
- * Transform market from niche to mainstream
- * Field test supported by NYSERDA, DOE, and CEC

Status:

- * Commissioning in mockup
- * DR strategies under development

