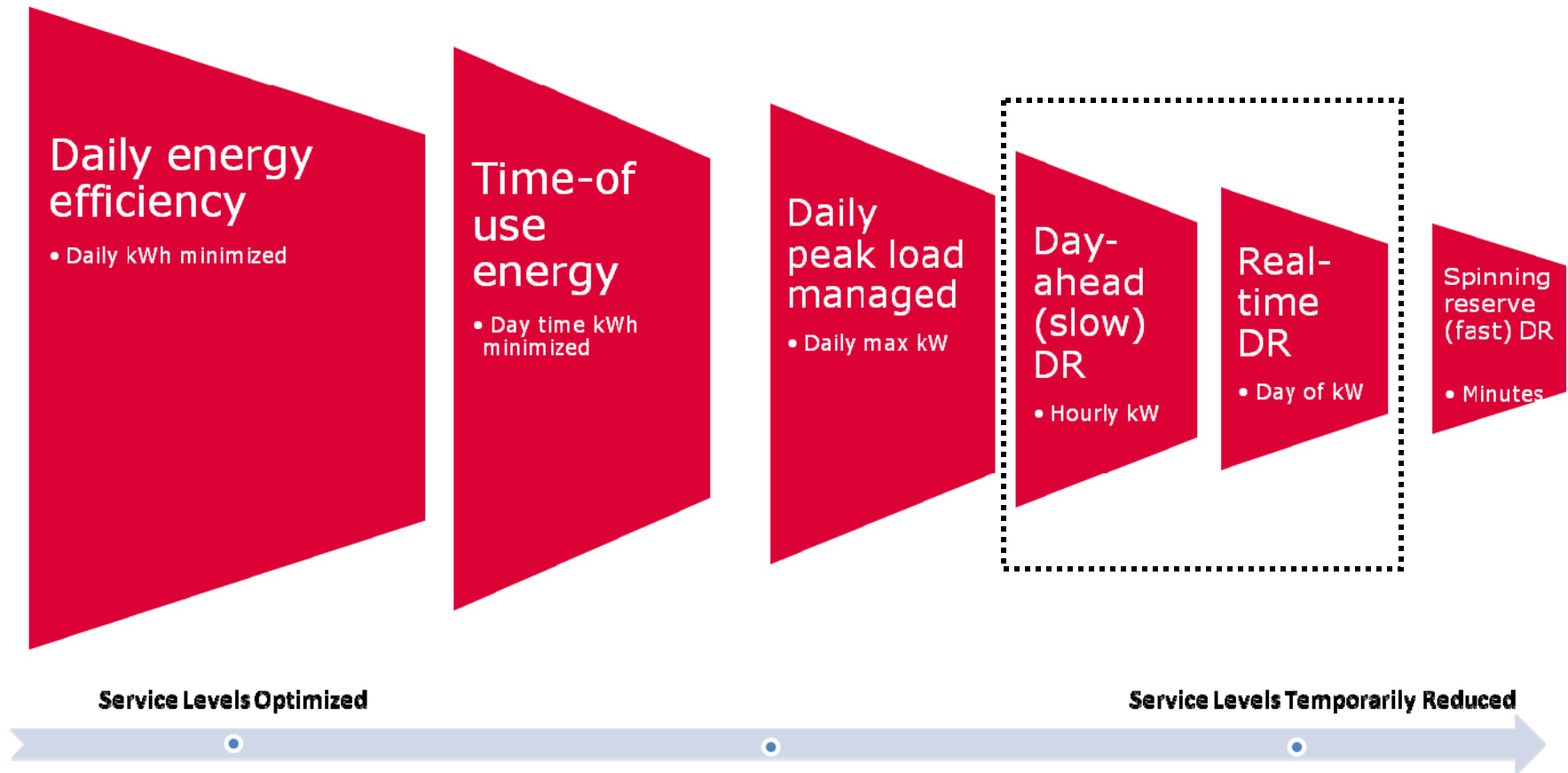


ConnectivityWeek™

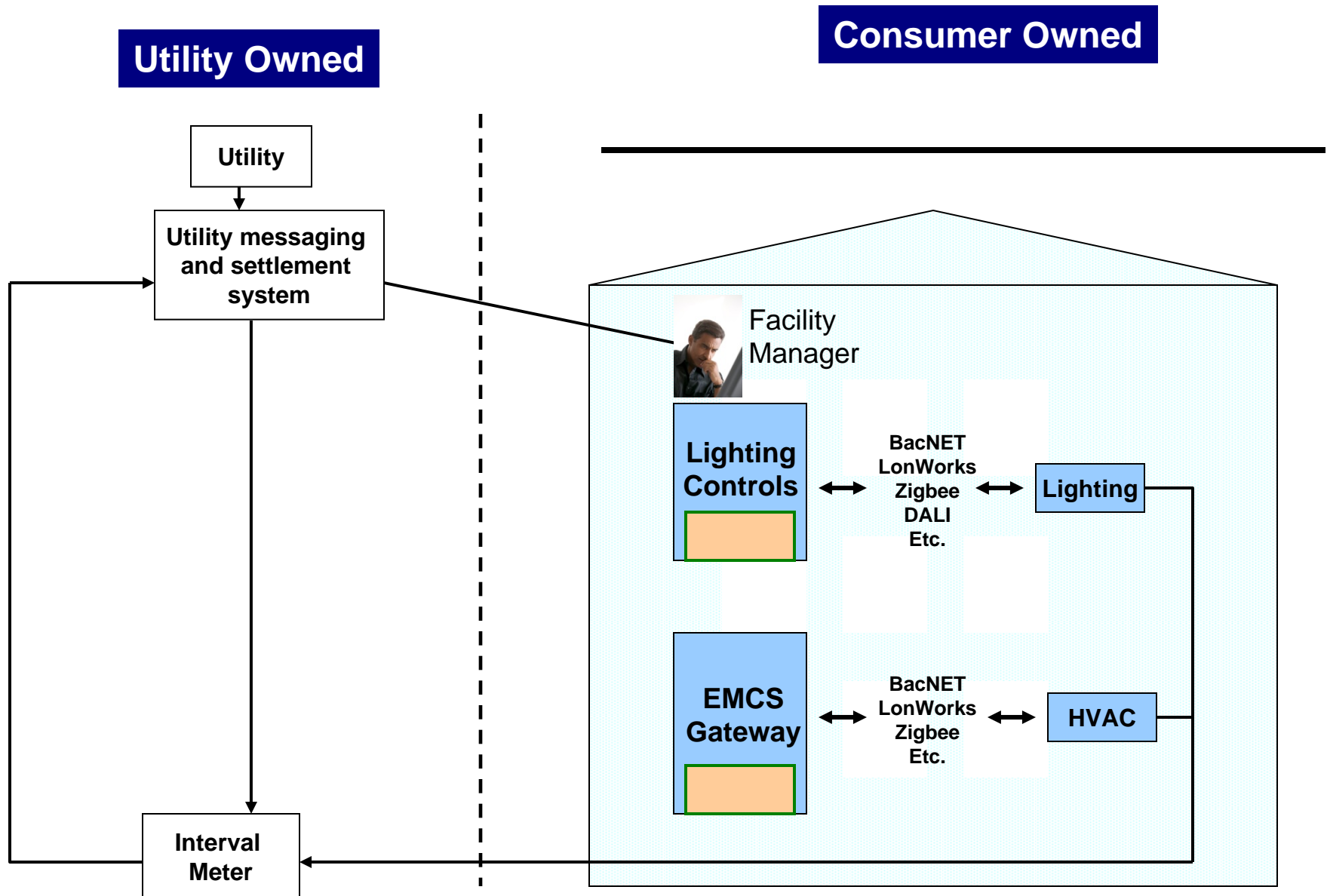
Automated Demand Response Practices in California

Ed Koch
CTO, Akuacom

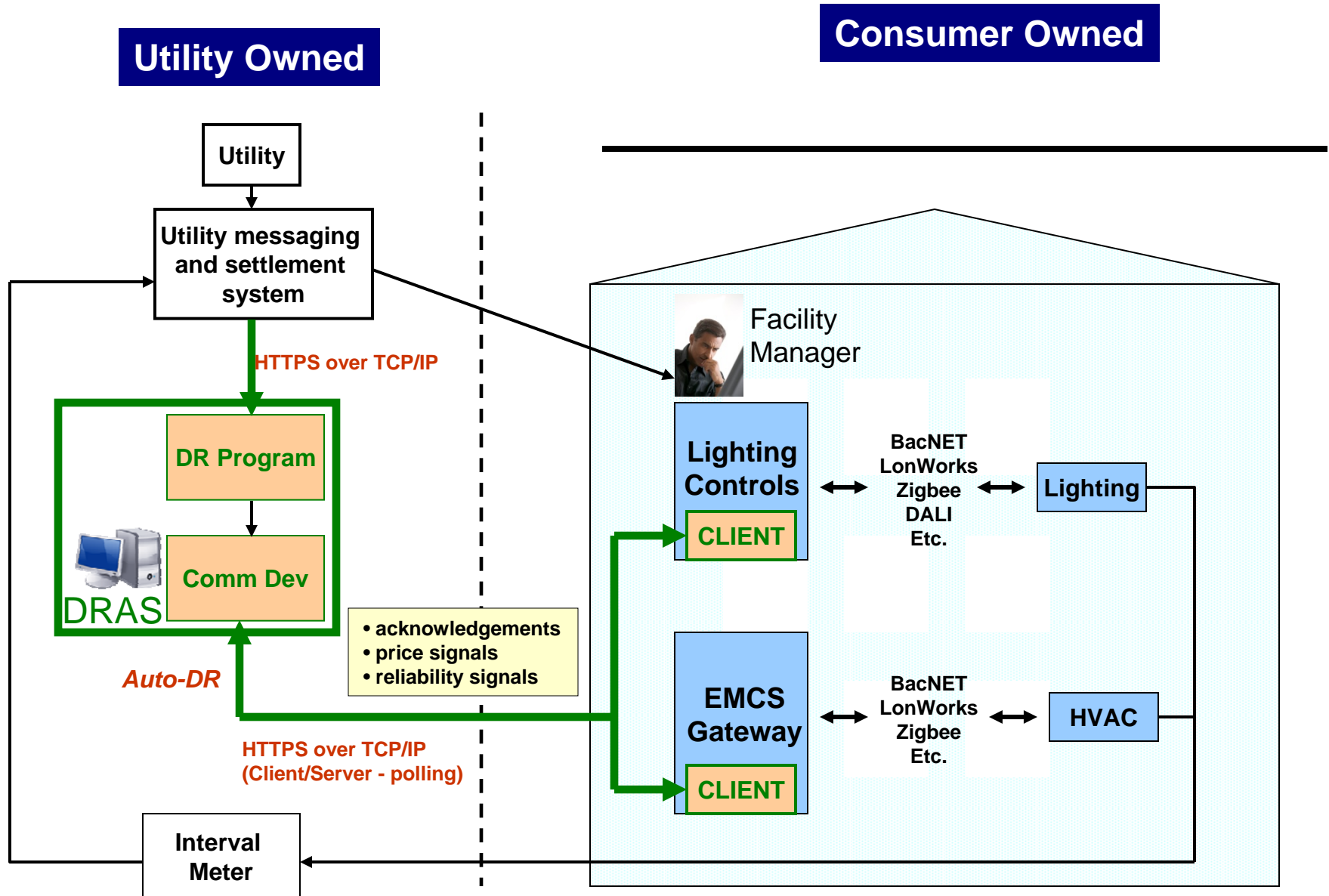
Energy Management/DR Spectrum



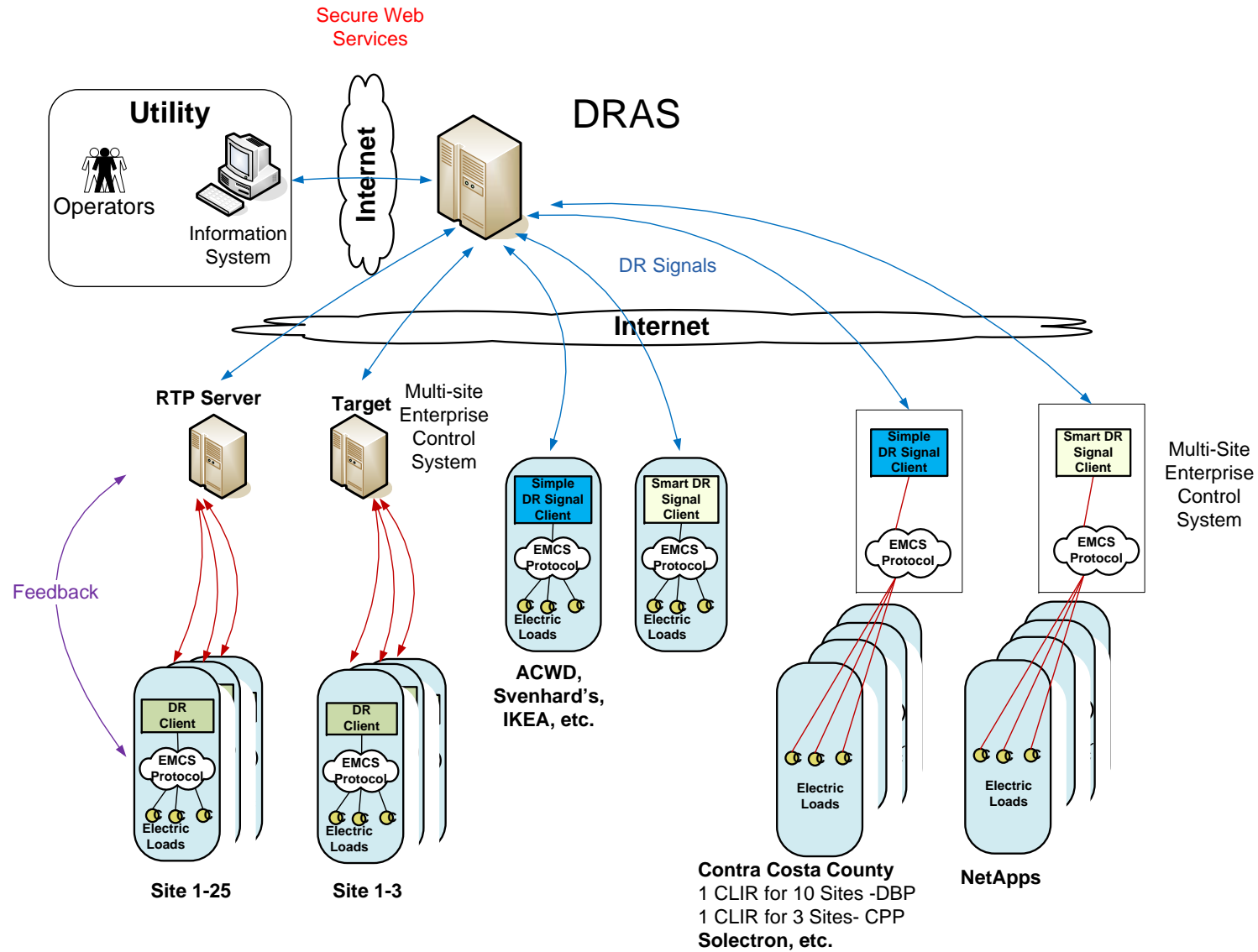
Manual DR



Automated DR



Sample Deployment Scenarios



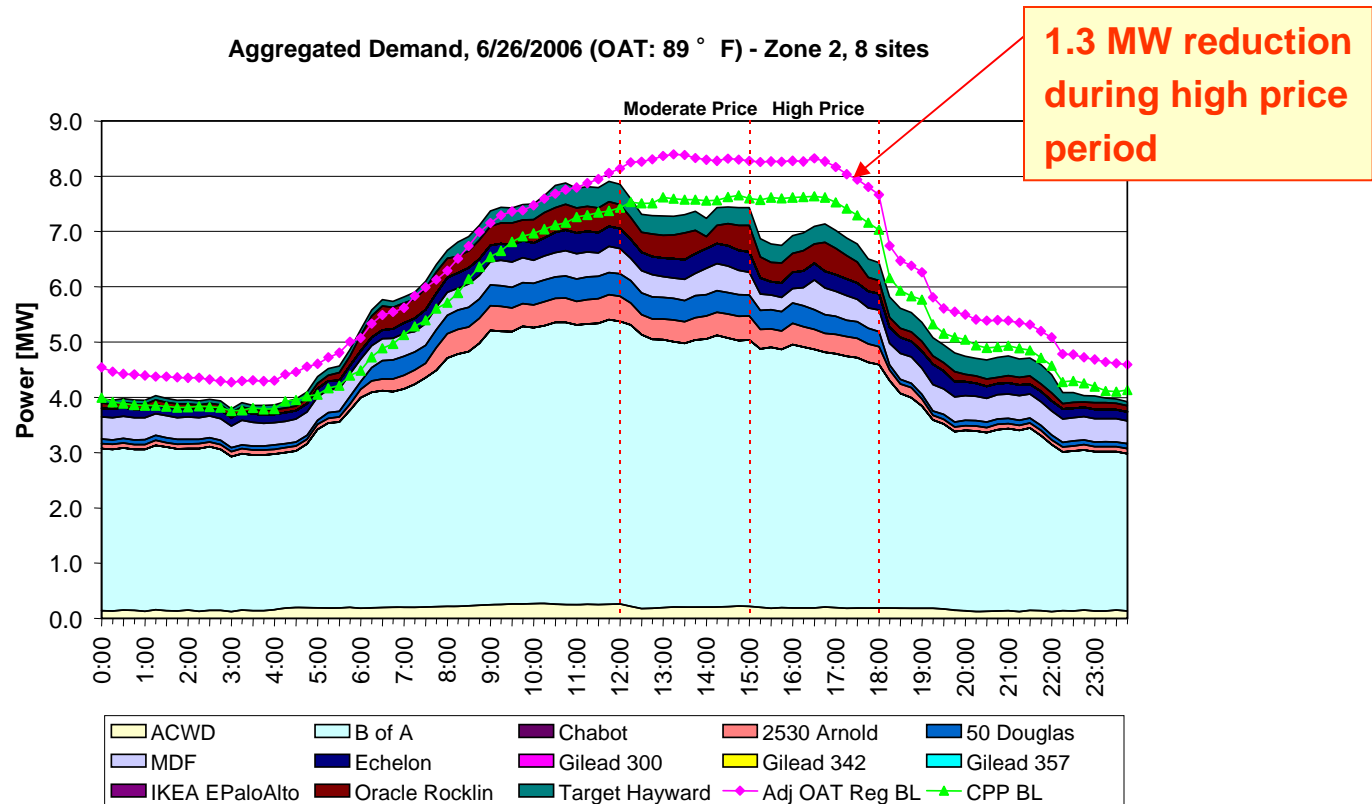
DR Shed Strategies

	Building use	HVAC											Lighting				Other	
		Global temp. adjustment	Duct static pres. Increase	SAT Increase	Fan VFD limit	CHW temp. Increase	Fan qty. reduction	Pre-cooling	Cooling valve limit	Boiler lockout	Slow recovery	Extended shed period	Common area light dim	Office area light dim	Turn off light	Dimmable ballast	Bi-level switching	Non-critical process shed
ACWD	Office, lab	X	X	X		X			X	X		X						
B of A	Office, data center		X	X	X	X			X									
Chabot	Museum	X					X											
2530 Arnold	Office	X									X							
50 Douglas	Office	X									X							
MDF	Detention facility	X																
Echelon	Hi-tech office	X	X	X			X					X	X	X	X			
Centerville	Junior Highschool	X						X										
Irvington	Highschool	X						X										
Gilead 300	Office			X														
Gilead 342	Office, Lab	X		X														
Gilead 357	Office, Lab	X		X														
IKEA EPaloAlto	Furniture retail	X																
IKEA Emeryville	Furniture retail	X																
IKEA WSacto	Furniture retail																	
Oracle Rocklin	Office	X	X															
Safeway Stockton	Supermarket																X	
Solectron	Office, Manufacture	X											X					
Svenhard's	Bakery												X					X
Sybase	Hi-tech office												X					
Target Antioch	Retail	X					X											
Target Bakersfield	Retail	X					X											
Target Hayward	Retail	X					X					X					X	
Walmart Fresno	Retail	X															X	

Global Temperature Reset Migrating to California Energy Code



AutoDR Results – June 26, 2006



	Average kW		Average %		Average W/ft ²	
	Moderate	High	Moderate	High	Moderate	High
ACWD	78	91	28%	32%	1.53	1.78
B of A	478	604	9%	12%	0.67	0.85
2530 Arnold	102	140	20%	29%	0.78	1.07
50 Douglas	57	94	13%	22%	0.63	1.04
MDF	90	155	17%	30%	0.52	0.90
Echelon	-2	80	0%	22%	-0.02	1.07
Oracle Rocklin	85	60	17%	14%	0.85	0.60
Target Hayward	59	56	15%	15%	0.45	0.43
Aggregated	946	1281	11%	16%	0.65	0.88