ACEEE 30th Anniversary
Policy and Analysis Conferences
Washington, DC
December 8, 2010

Jon Wellinghoff
Chairman
Federal Energy Regulatory Commission

ACEEE

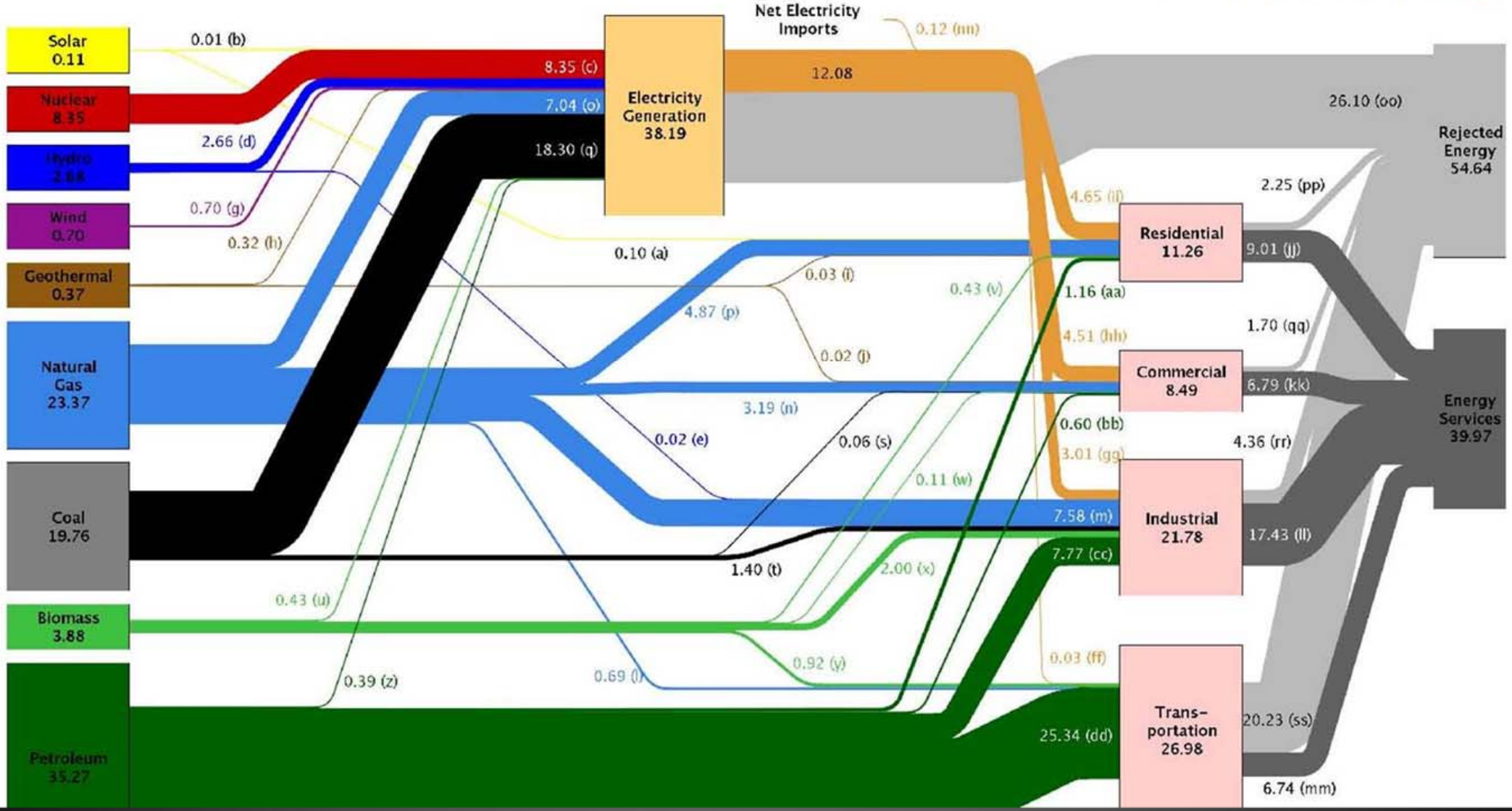
ACEEE Today

ACEEE

ACEEE In 2040

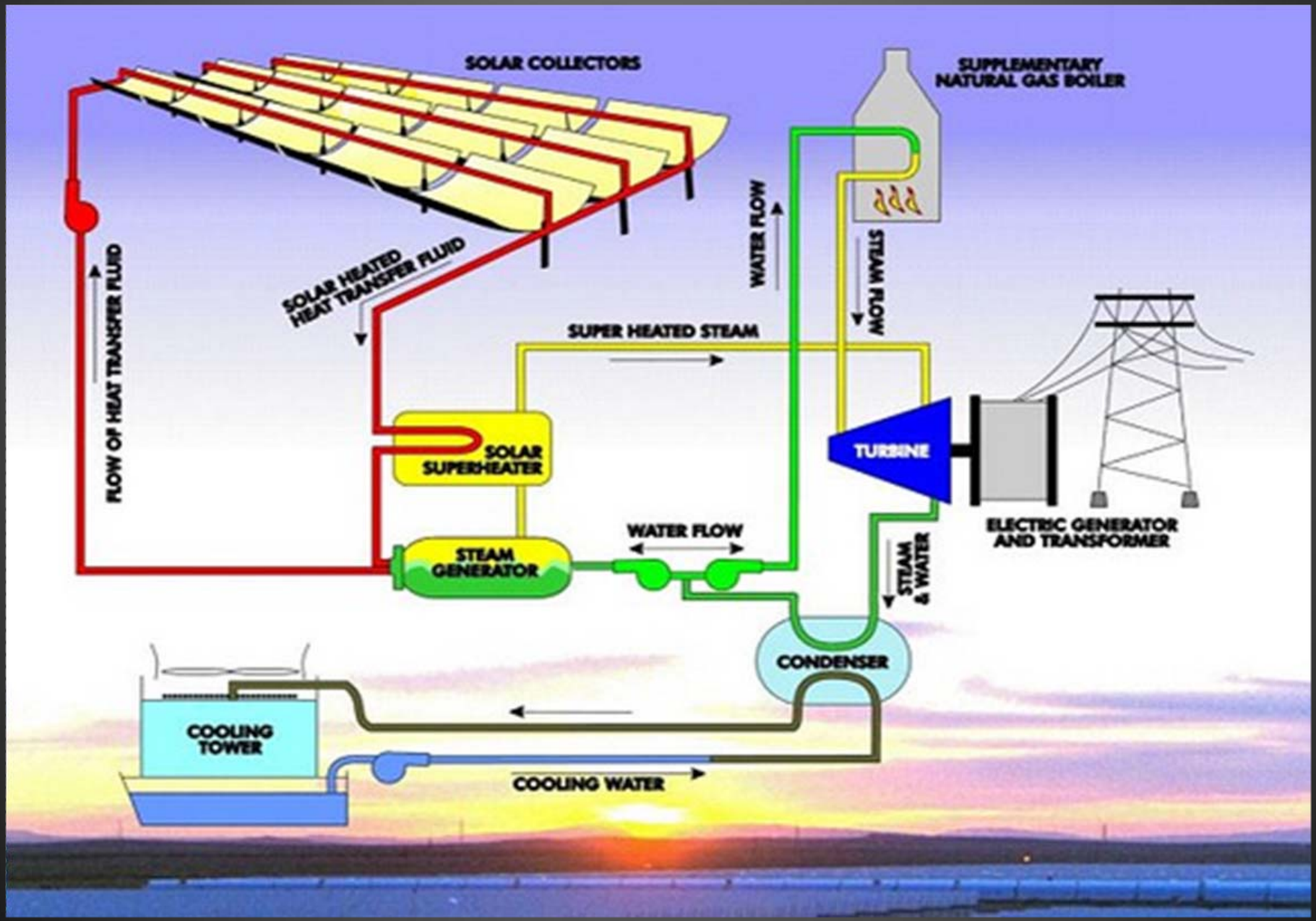
Estimated U.S. Energy Use in 2009: ~94.6 Quads

Lawrence Livermore National Laboratory

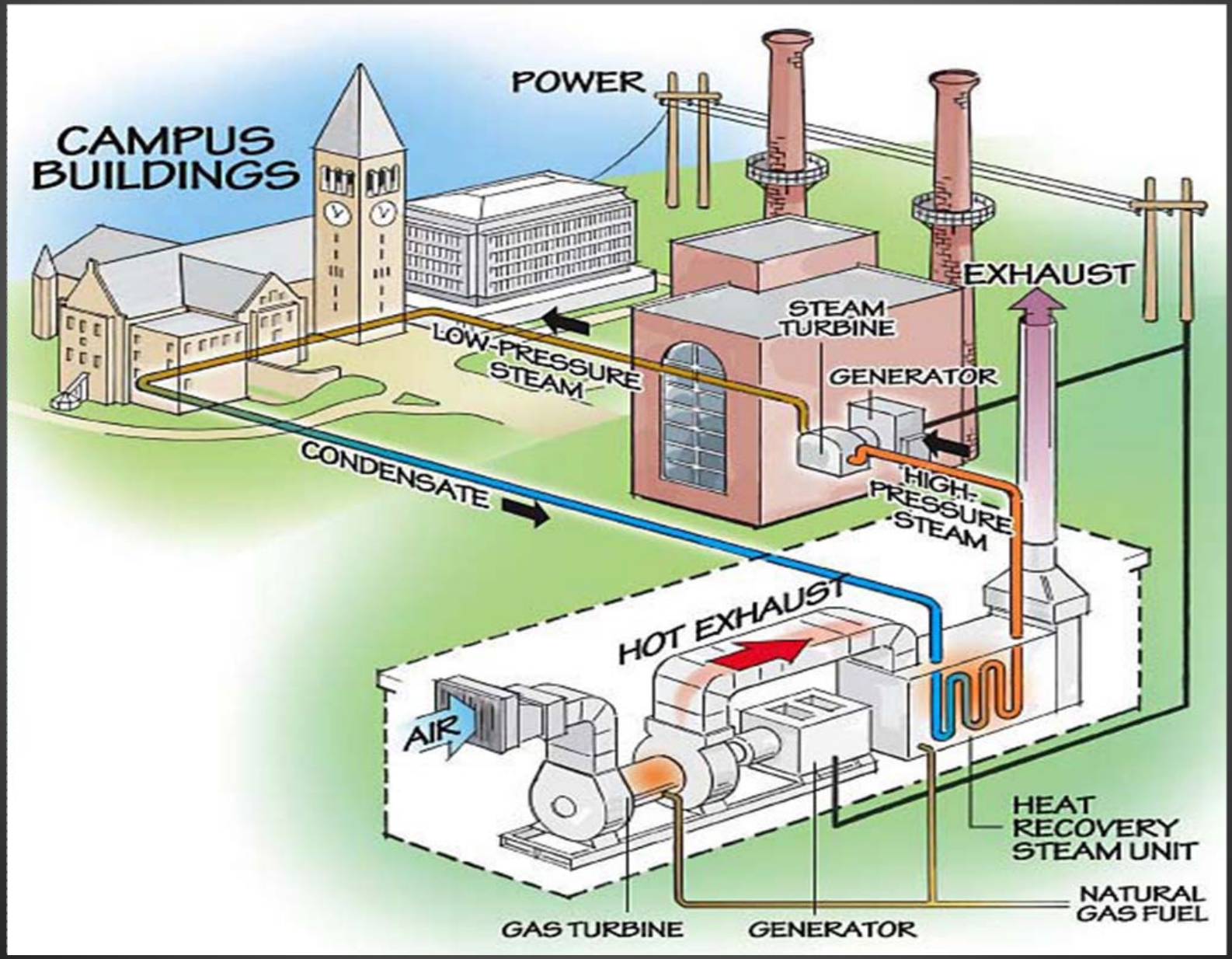


Most Efficient Central Power Plant
Combined Cycle Gas Turbine: 50%-60%

Improving Efficiency: Solar Thermal w/ Gas Turbine



Most Efficient Distributed Generation
Cogeneration: 70%-90%



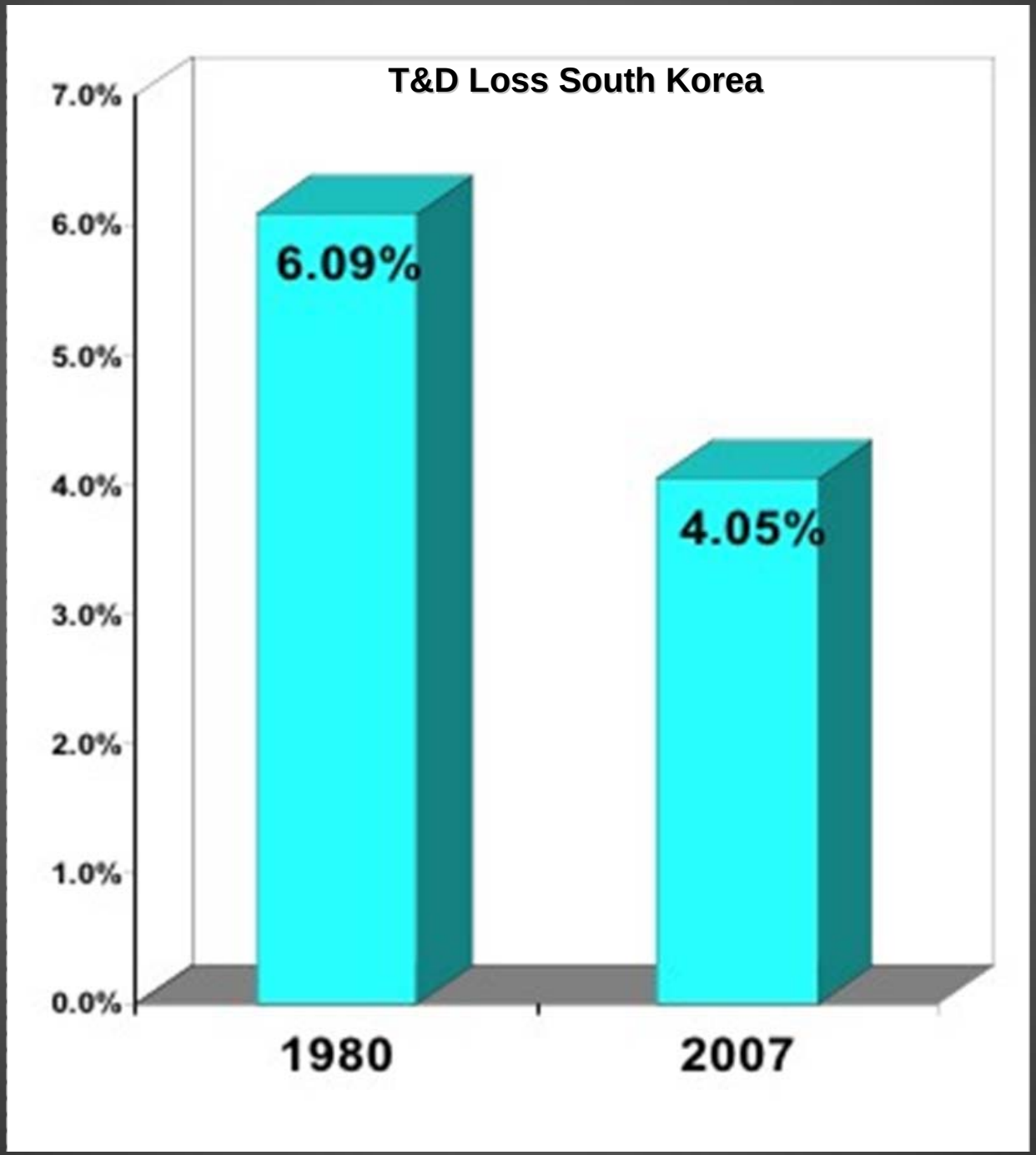
Improving Transmission Efficiency Must Become a Smart & Profitable Business…

Reduce System Losses

Reduce Line/
Equipment Losses

Increase System/ Resource Utilization

Source: EPRI

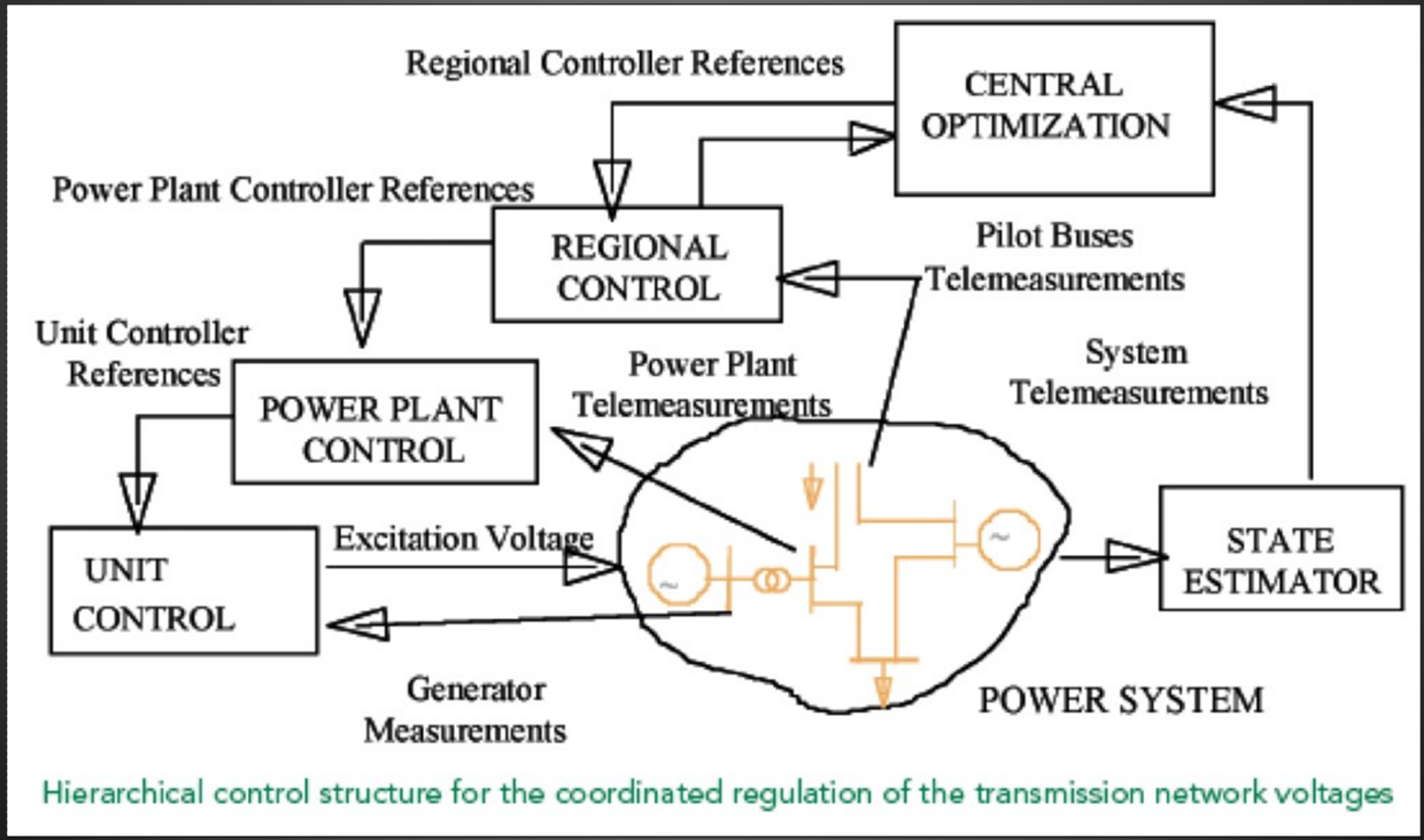


Source: EPRI

Voltage Upgrade/EHV AC/HVDC

Source: EPRI

Dynamic Coordinated Voltage Control - VAR



Hierarchical control structure for the coordinated regulation of the transmission network voltages

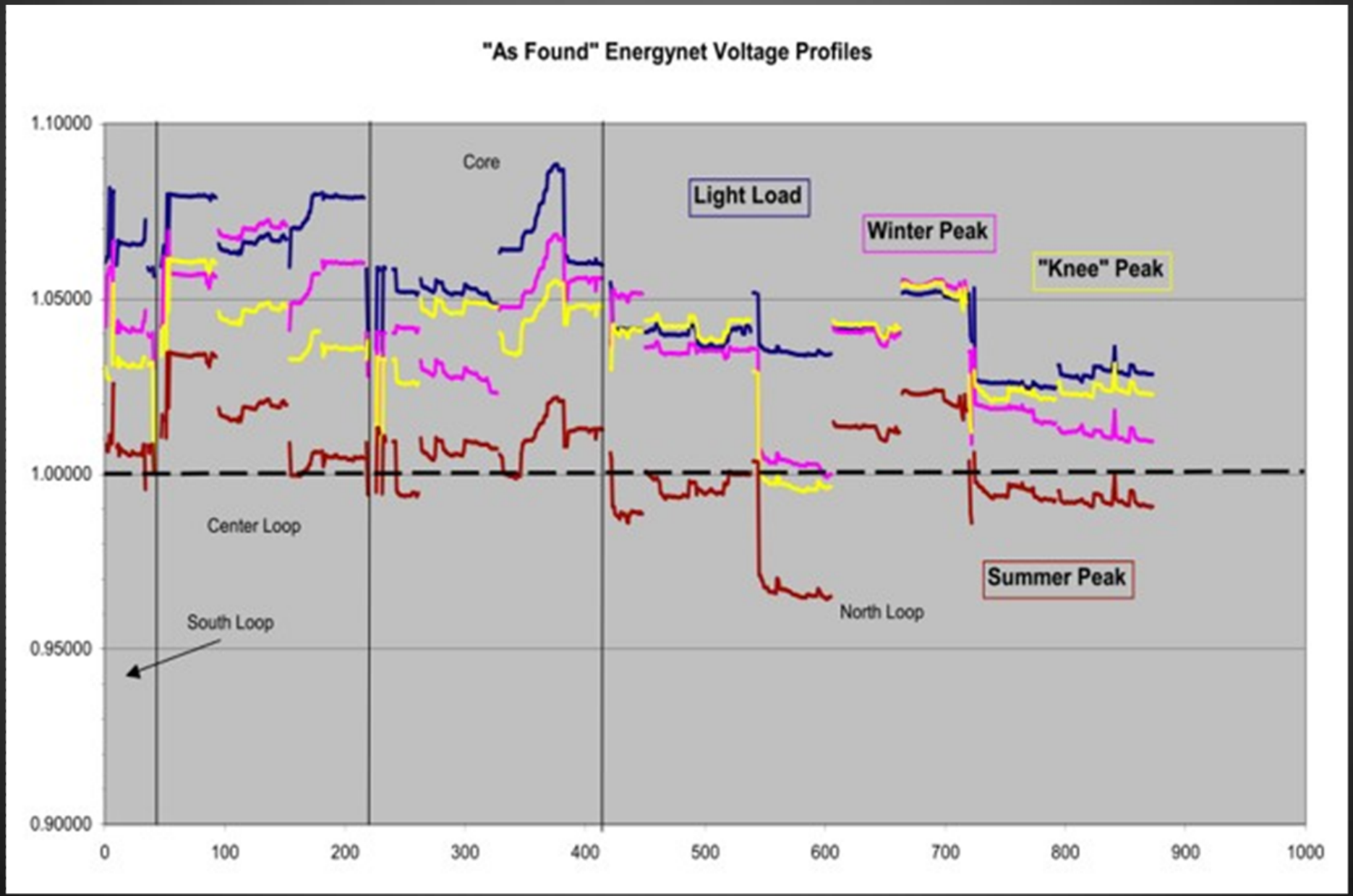
Source: EPRI


Contingency Violations
Doppler

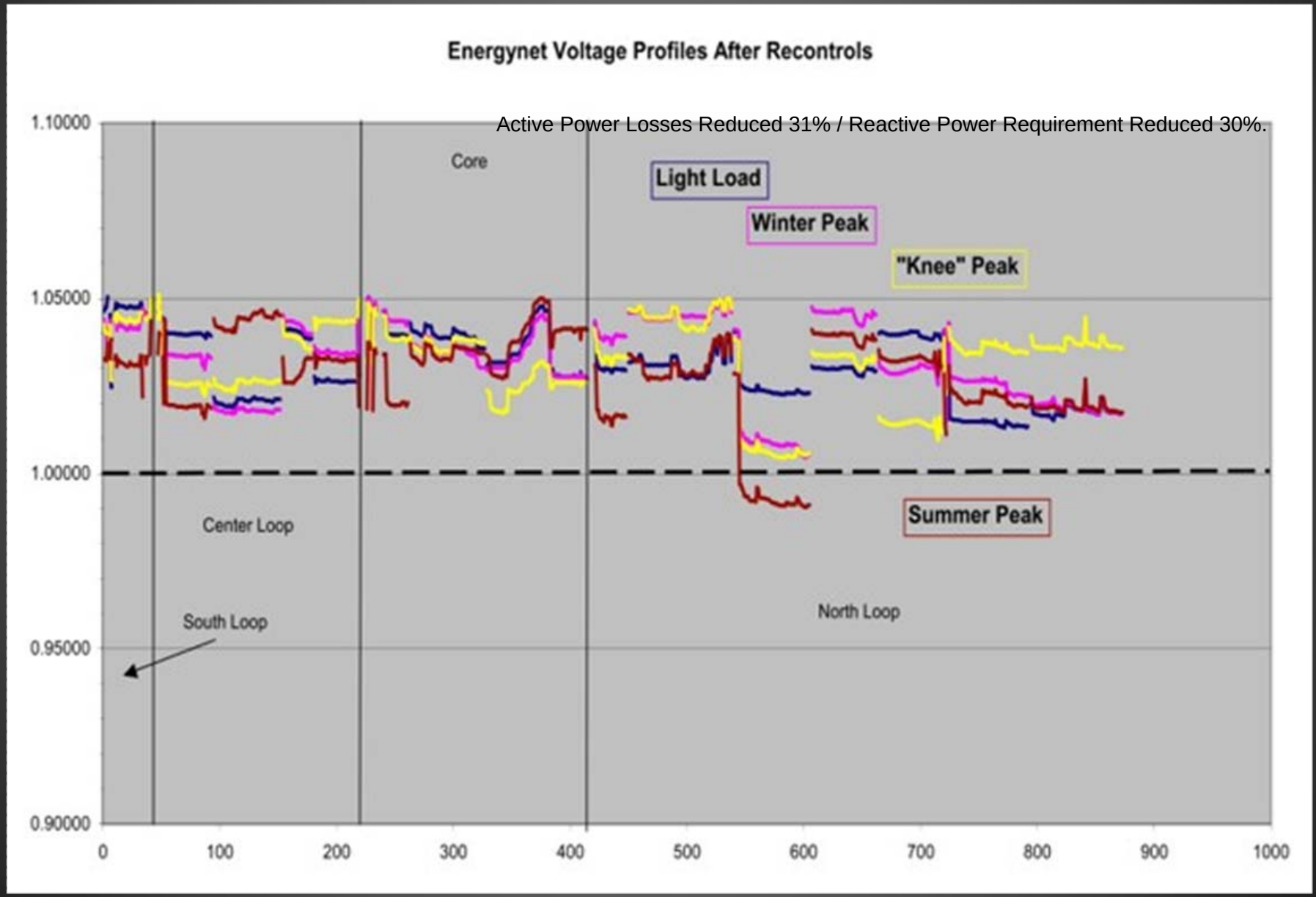
Distribution Efficiency Improving Opportunity	*Technologies to Improve Distribution Efficiency*
Reduce Distribution Line losses	1A. Re-Conductoring
	1B. Phase Balancing
Reduce Equipment Losses	1C. Capacitor Placement, Var Control Strategy
	2A. Distribution Transformers (High Efficiency and Amorphous Metal Transformers)
Improve Utilization	3A. Voltage Optimization (also known as
	3B. Smart Distribution Control

Source: EPRI

“As Found” Voltage Profiles for Small Distribution Utility

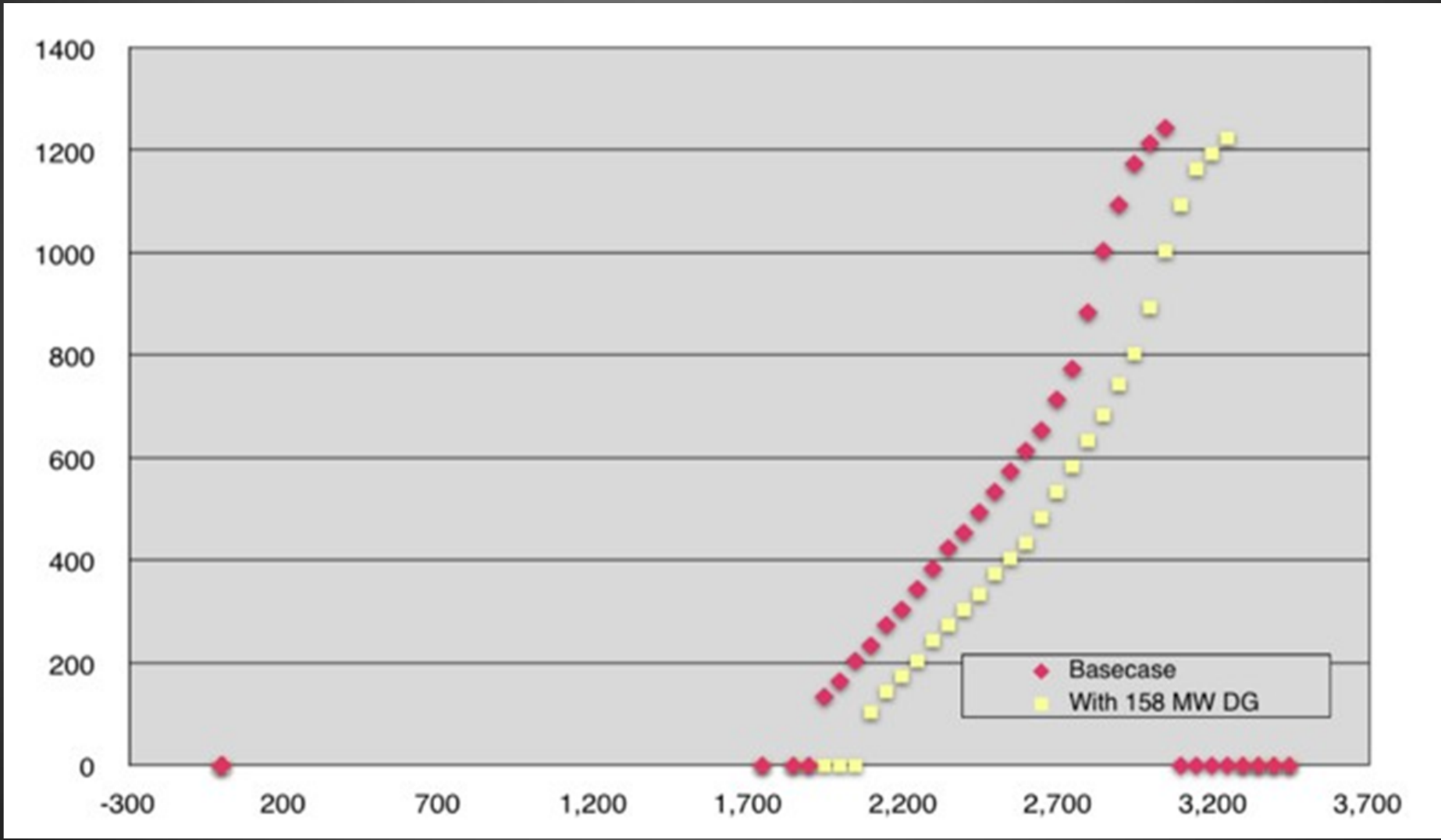


Recontrolled Voltage Profiles Using New Technology



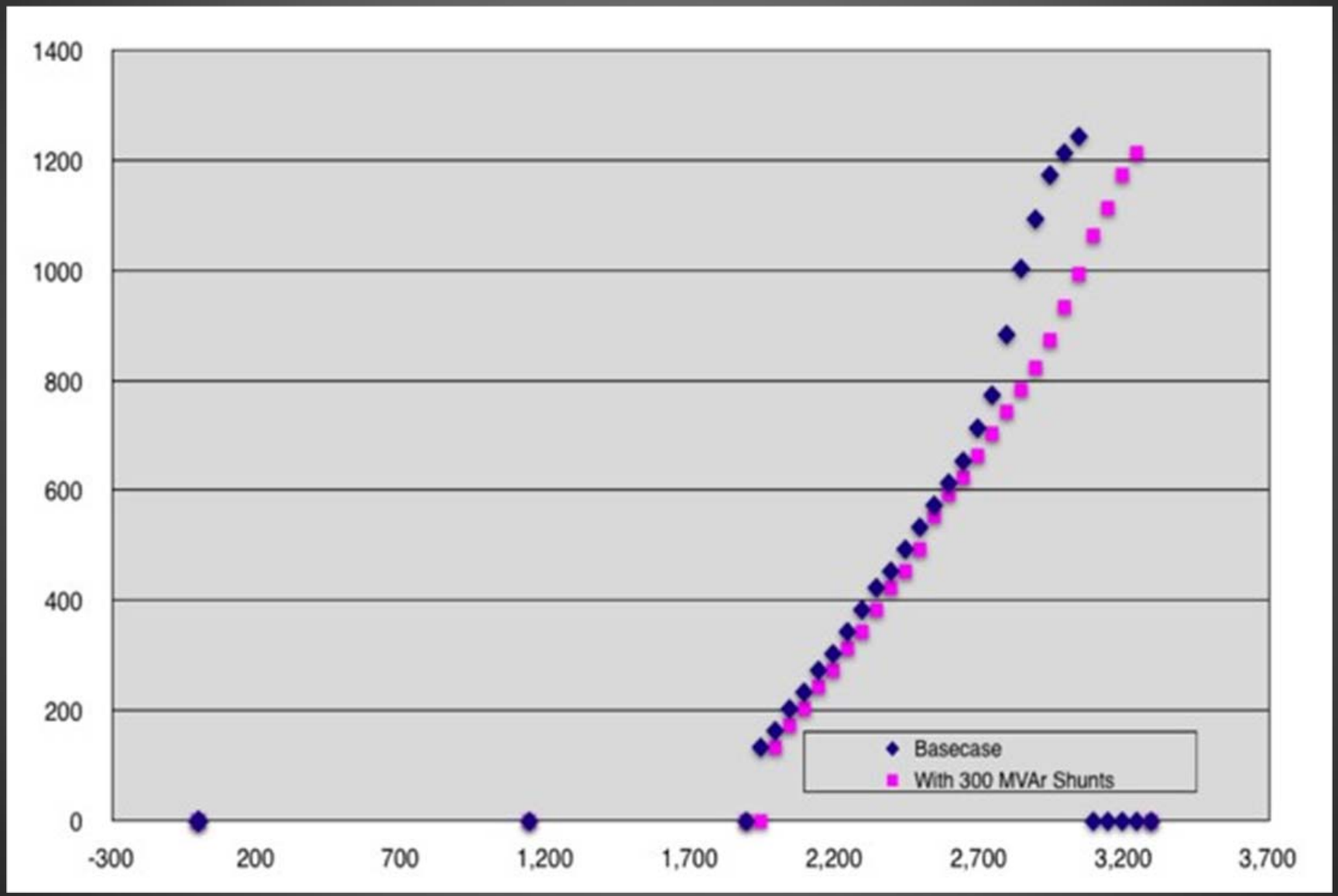
Active Power Losses Reduced 31% / Reactive Power Requirement Reduced 30%.

Optimal Placement of DG: Increases Load Serving Capability

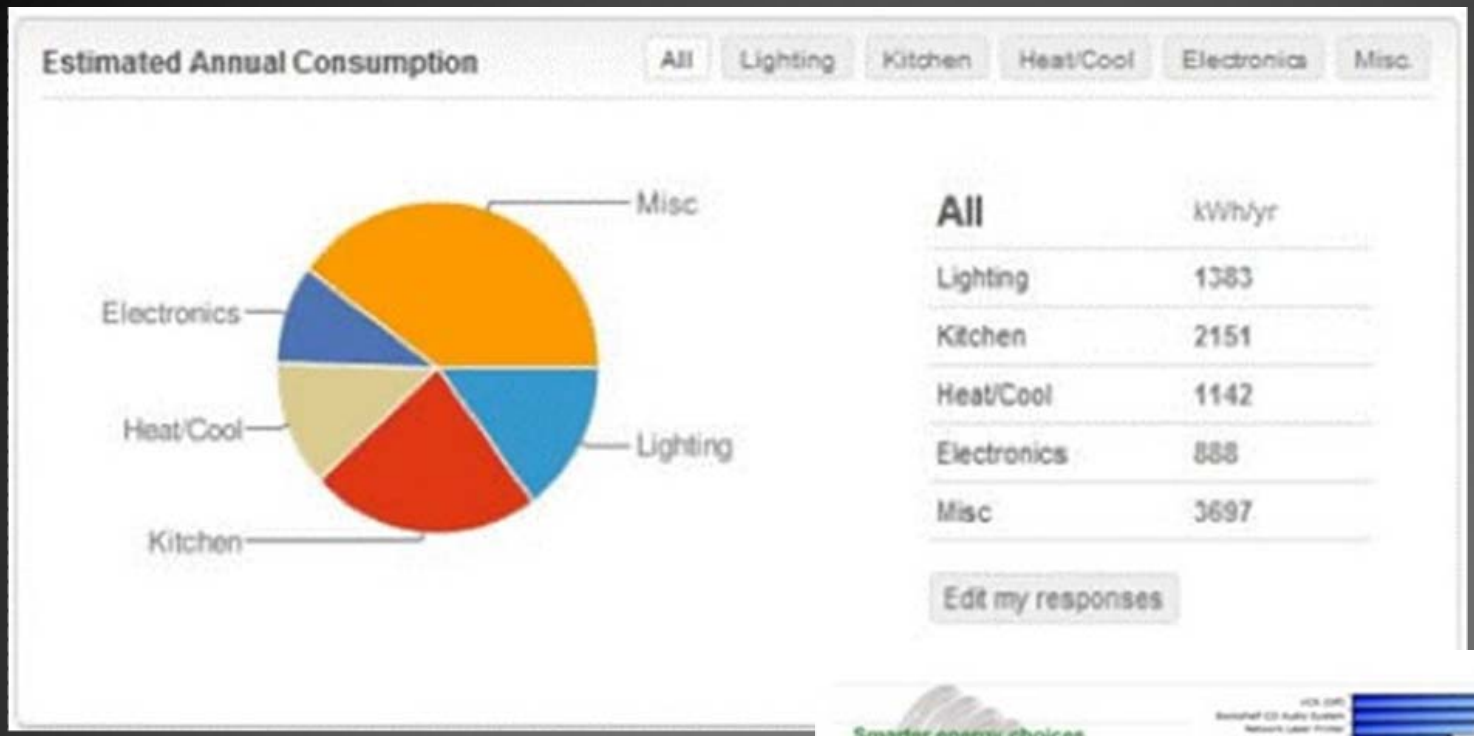


158MW DG Addition Increases Load Serving Capability 240MW (90 MW comes from Congestion Reduction)

Reactive Optimization: Increases Load Serving Capability

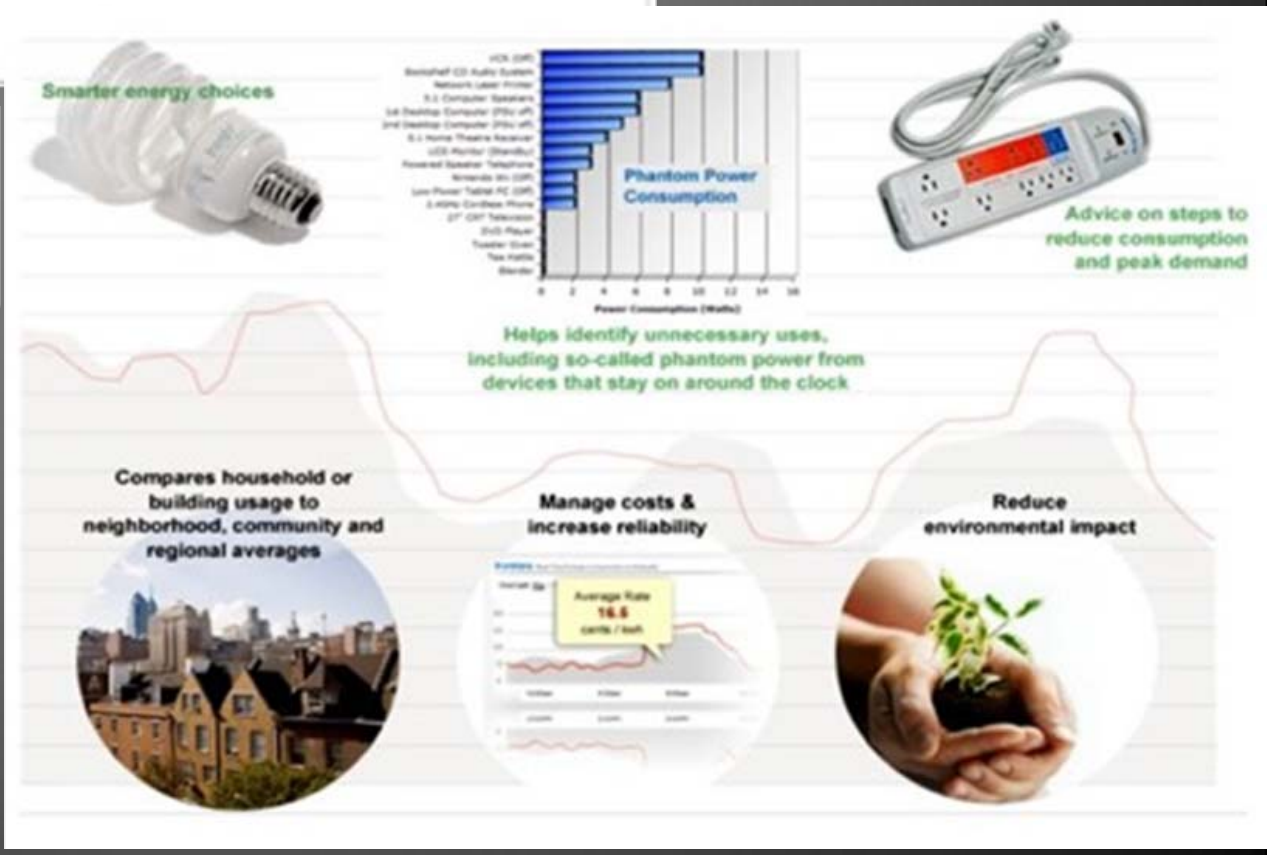


300 Properly Placed Transmission MVAr Increases Load Serving Capability by 250MW

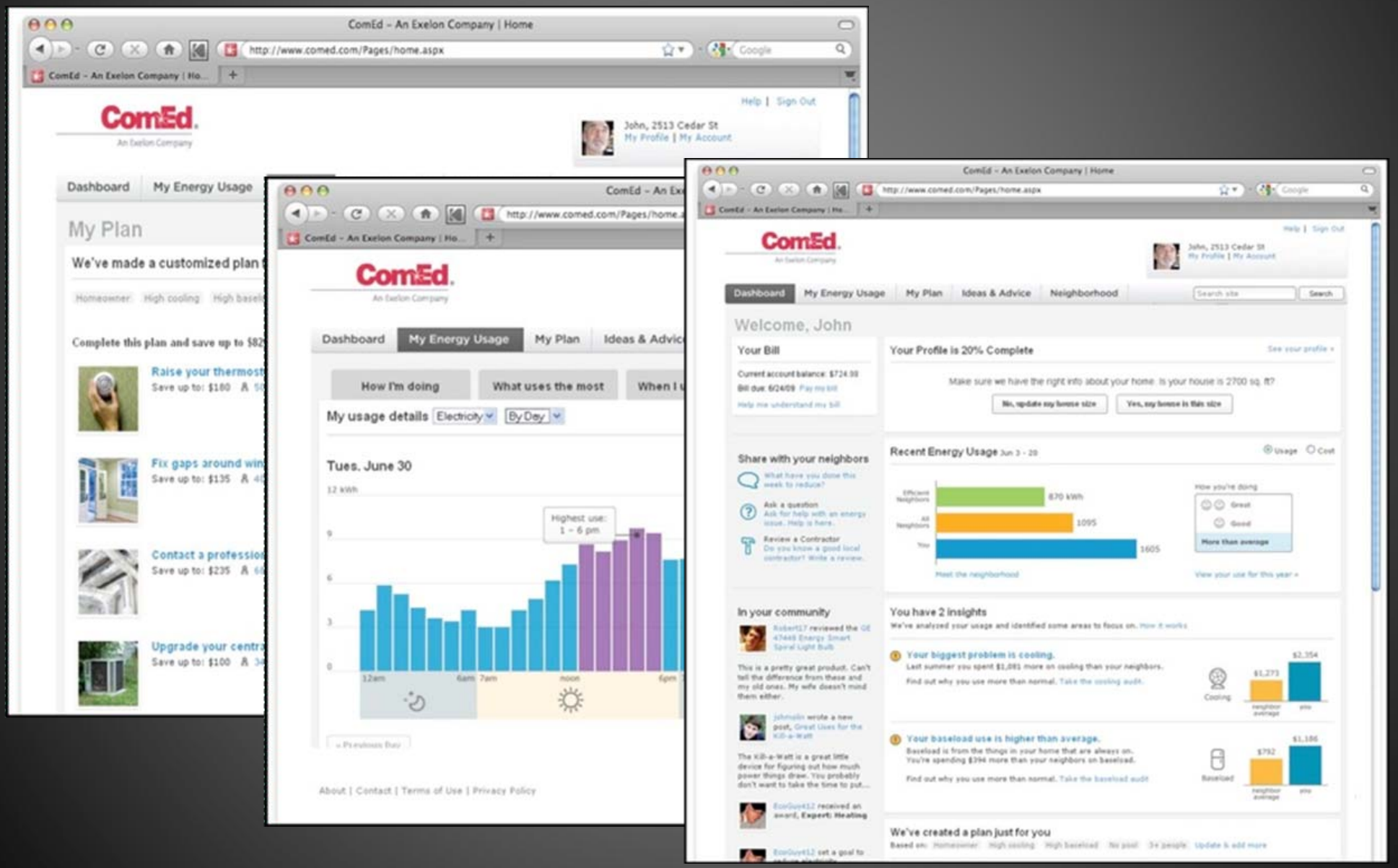


GroundedPower℠

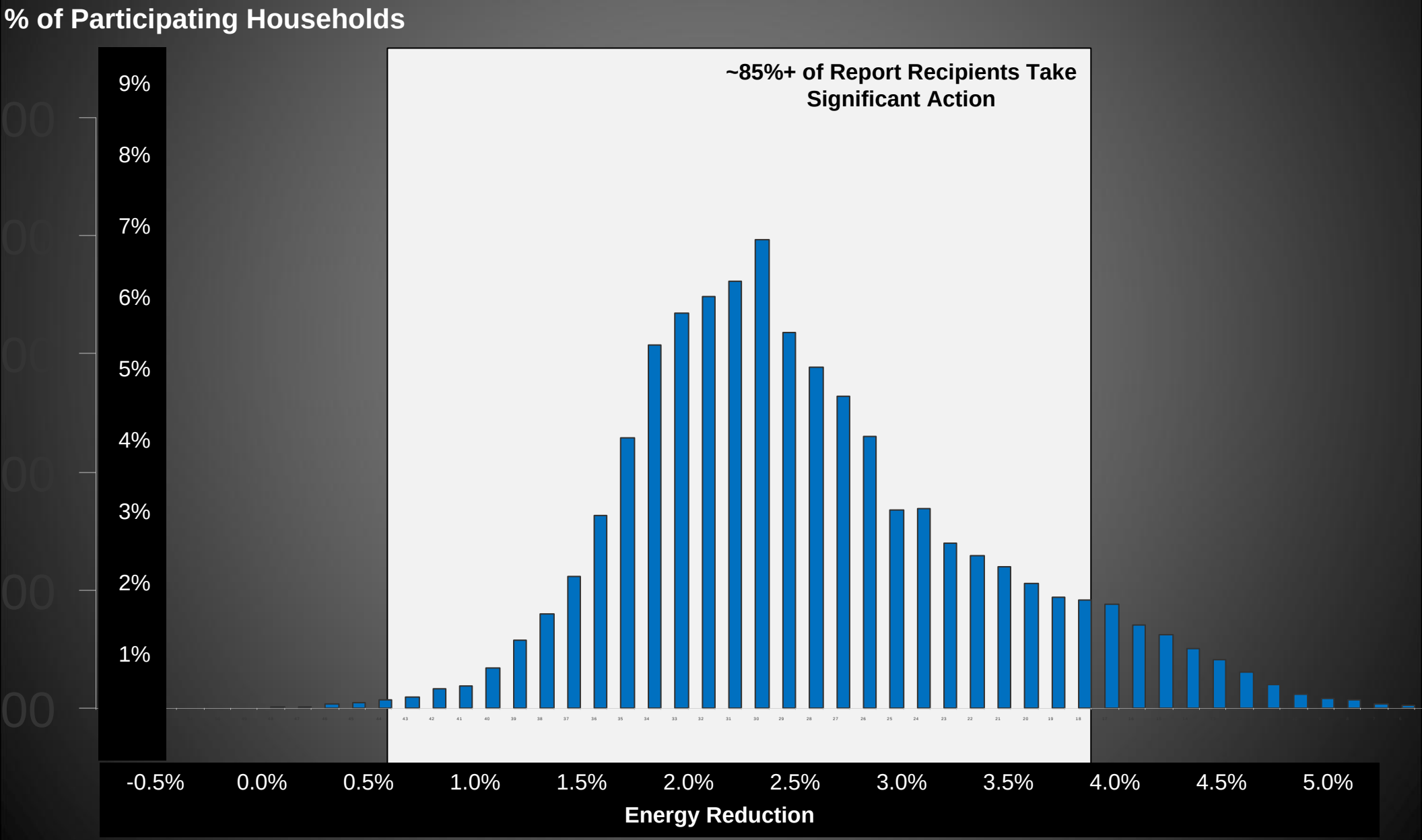
Now a Tendril Company.



OPOWER Product Suite: Web Platform

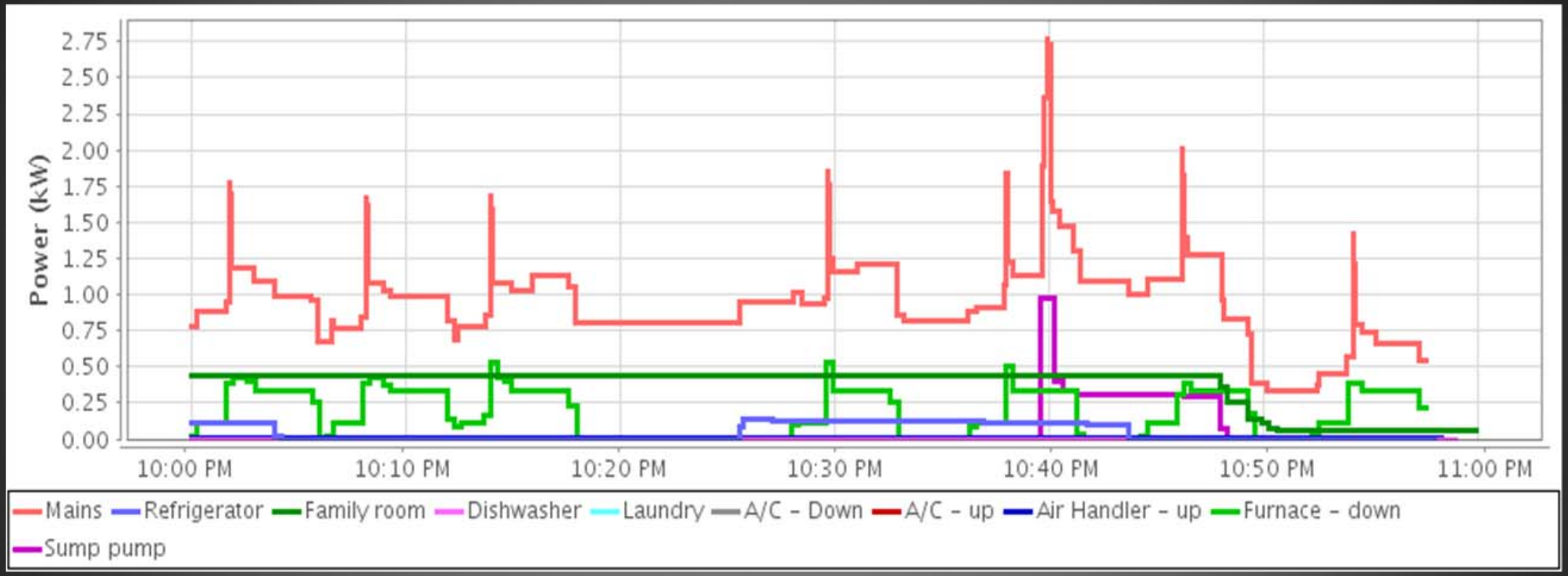


Broad Customer Engagement: Key to Success



Independent Verification by Summit Blue Demonstrates High Customer Engagement

My House


Power (kW)
2.75
2.50
2.25
2.00
1.75
1.50
1.25
1.00
0.75
0.50
0.25
0.00
10:00 PM
10:10 PM
10:20 PM
10:30 PM
10:40 PM
10:50 PM
11:00 PM
Mains
Refrigerator
Family room
Dishwasher
Laundry
A/C - Down
A/C - up
Air Handler - up
Furnace - down
Sump pump

greenNet.com
Together We Save™

Logout

Welcome, jbwellinghoff@yahoo.com

Monitor
Control
User Profile
Downloads
Dashboard
Live
Historical
Monitor Preferences

Top of Form
Monitor:

Time:

Rate: **Chart Style:**

Bottom of Form

Channel	Energy (kWh)	Watts	Voltage	Current (A)	Spent	Last Received
Mains	0.11	615	125.30	6.98	**$0.01**	2:51.10 PM
Refrigerator	0.00	1	125.30	0.00	**$0.00**	2:51.10 PM
Family room	0.02	62	124.40	0.00	**$0.00**	2:51.10 PM
Dishwasher	0.00	0	125.30	0.00	**$0.00**	2:51.10 PM
Laundry	0.00	0	125.30	0.00	**$0.00**	2:51.10 PM
A/C - Down	0.00	0	125.30	0.00	**$0.00**	2:51.10 PM
A/C - up	0.00	0	124.40	0.07	**$0.00**	2:51.10 PM
Air Handler - up	0.00	11	124.40	0.14	**$0.00**	2:51.10 PM
Furnace - down	0.04	328	124.40	0.00	**$0.00**	2:51.10 PM
Sump pump	0.00	12	124.40	0.00	**$0.00**	2:51.10 PM

Energy Voltage / Current All


Thank
You!