



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

**Jon Wellingshoff
Chairman
Federal Energy
Regulatory
Commission**

ACEEE



ACEEE Today



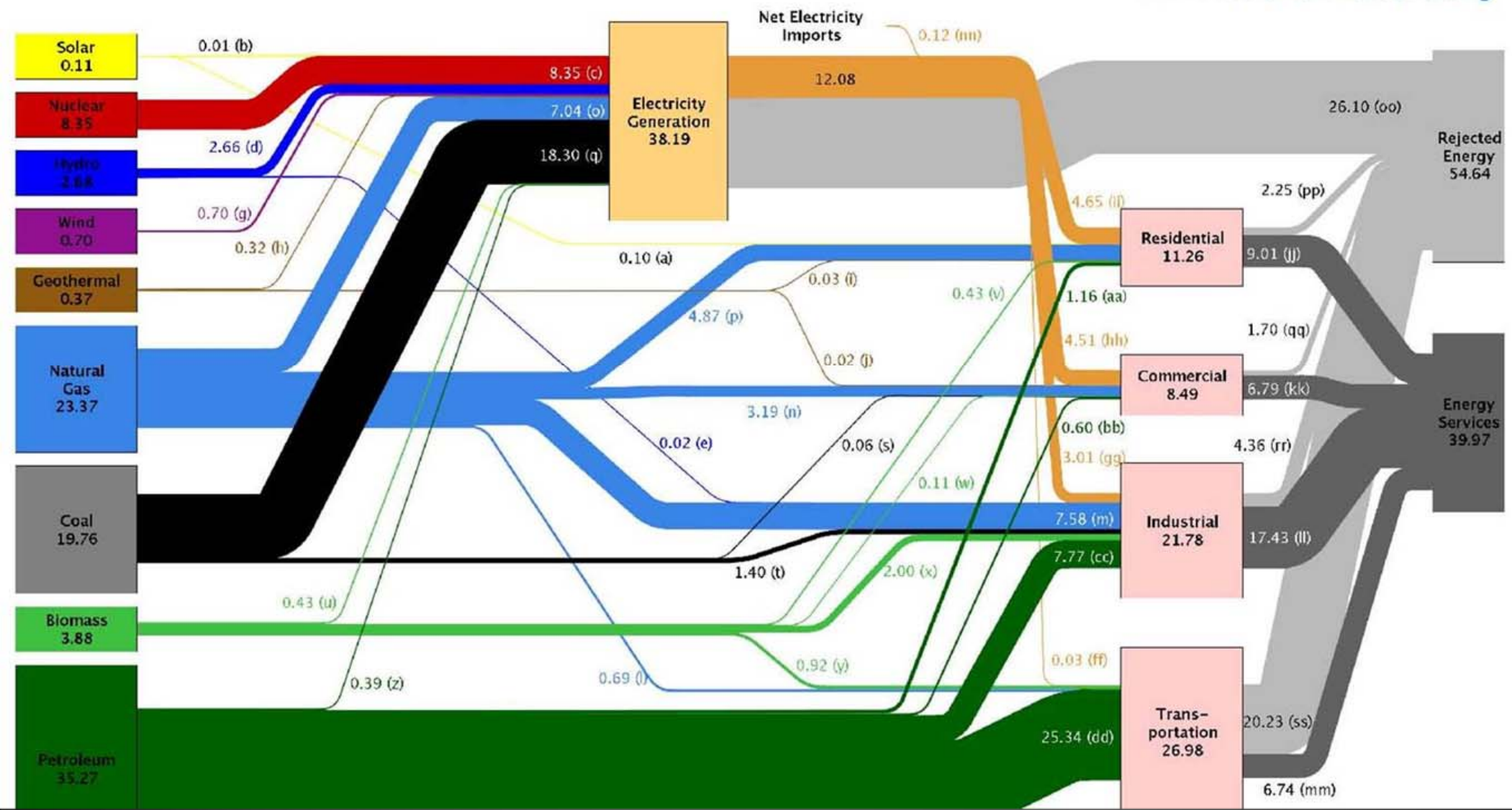
ACEEE



ACEEE In 2040



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

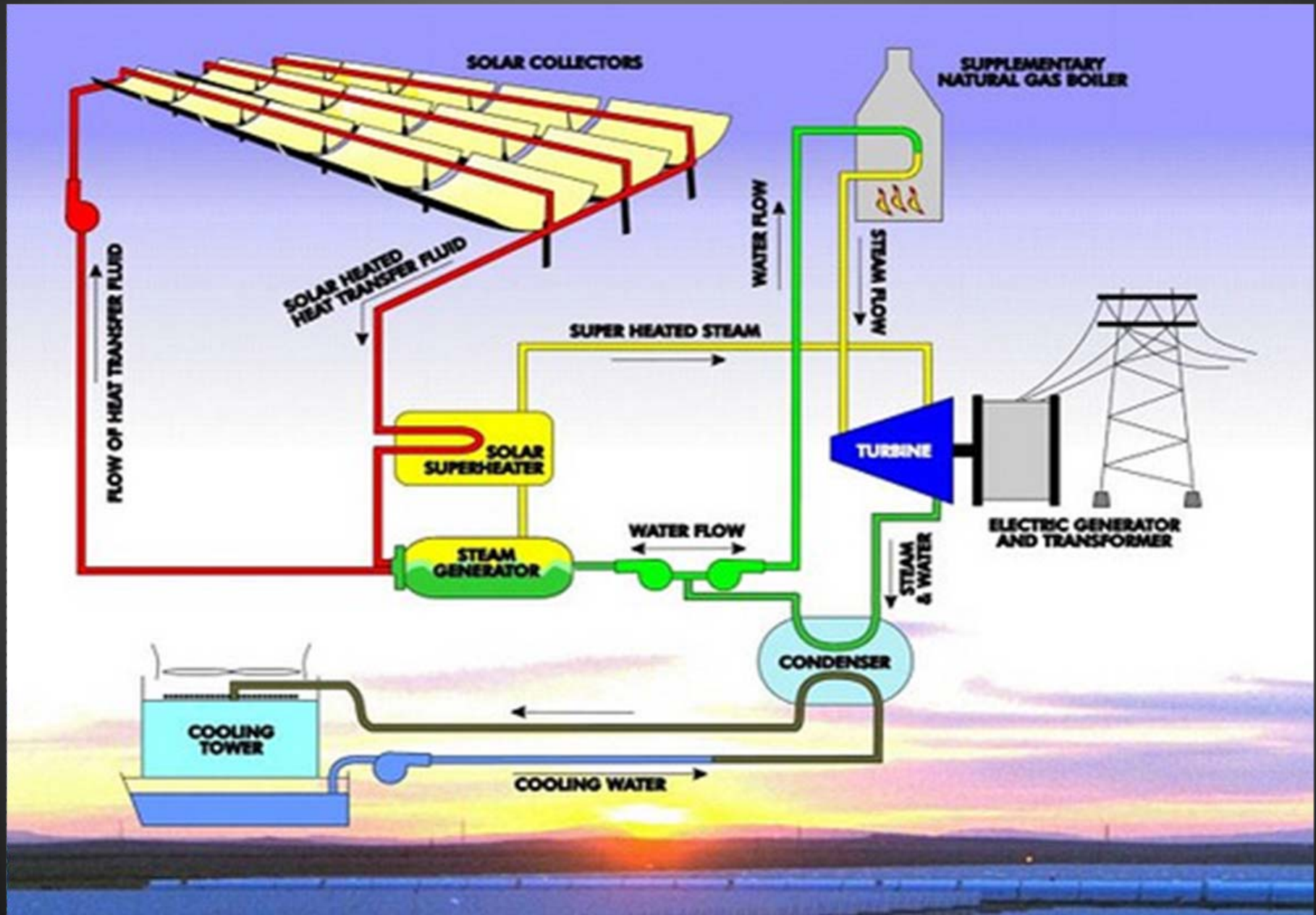


Most Efficient Central Power Plant

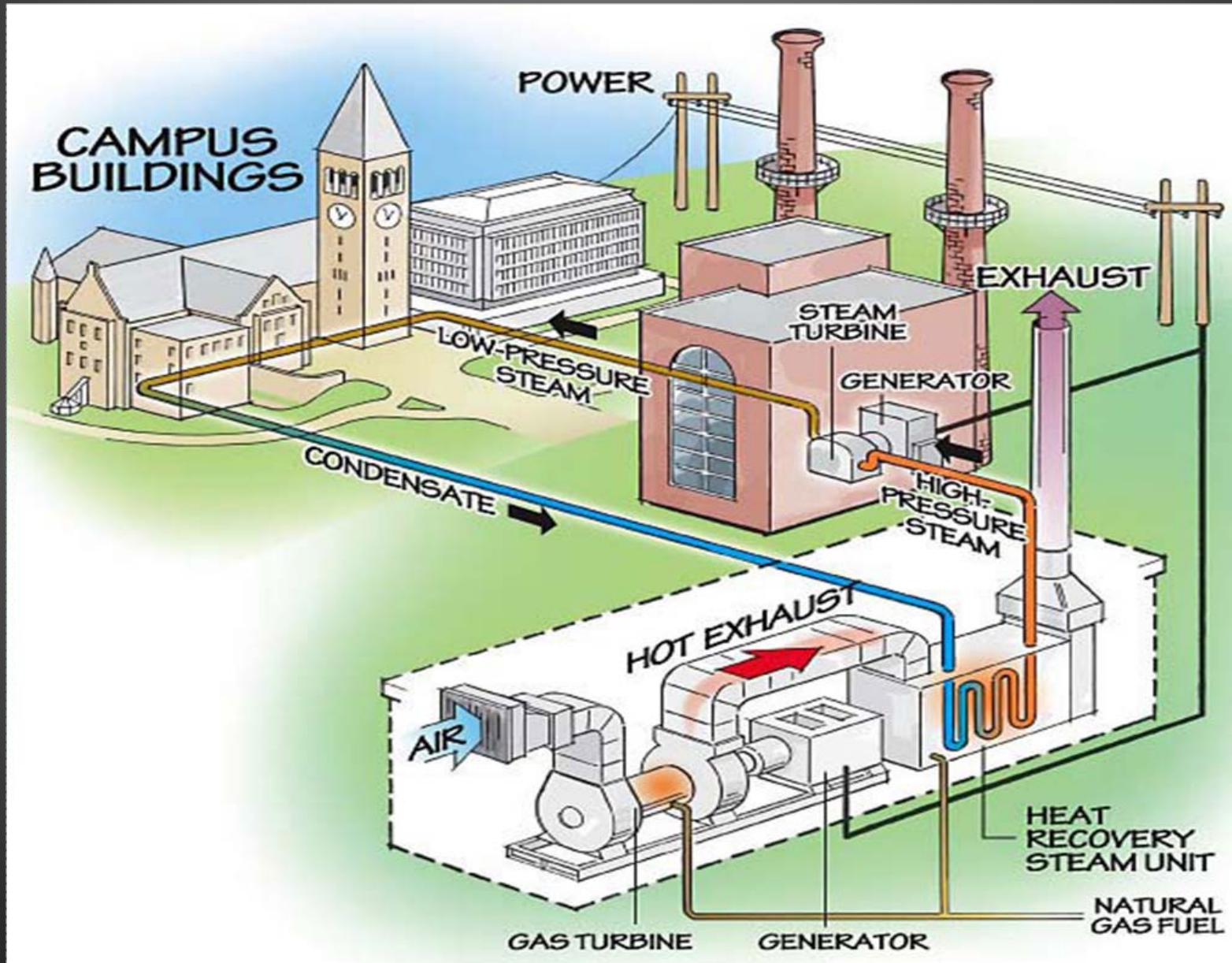
Combined Cycle Gas Turbine: 50%-60%



Improving Efficiency: Solar Thermal w/ Gas Turbine



Most Efficient Distributed Generation Cogeneration: 70%-90%



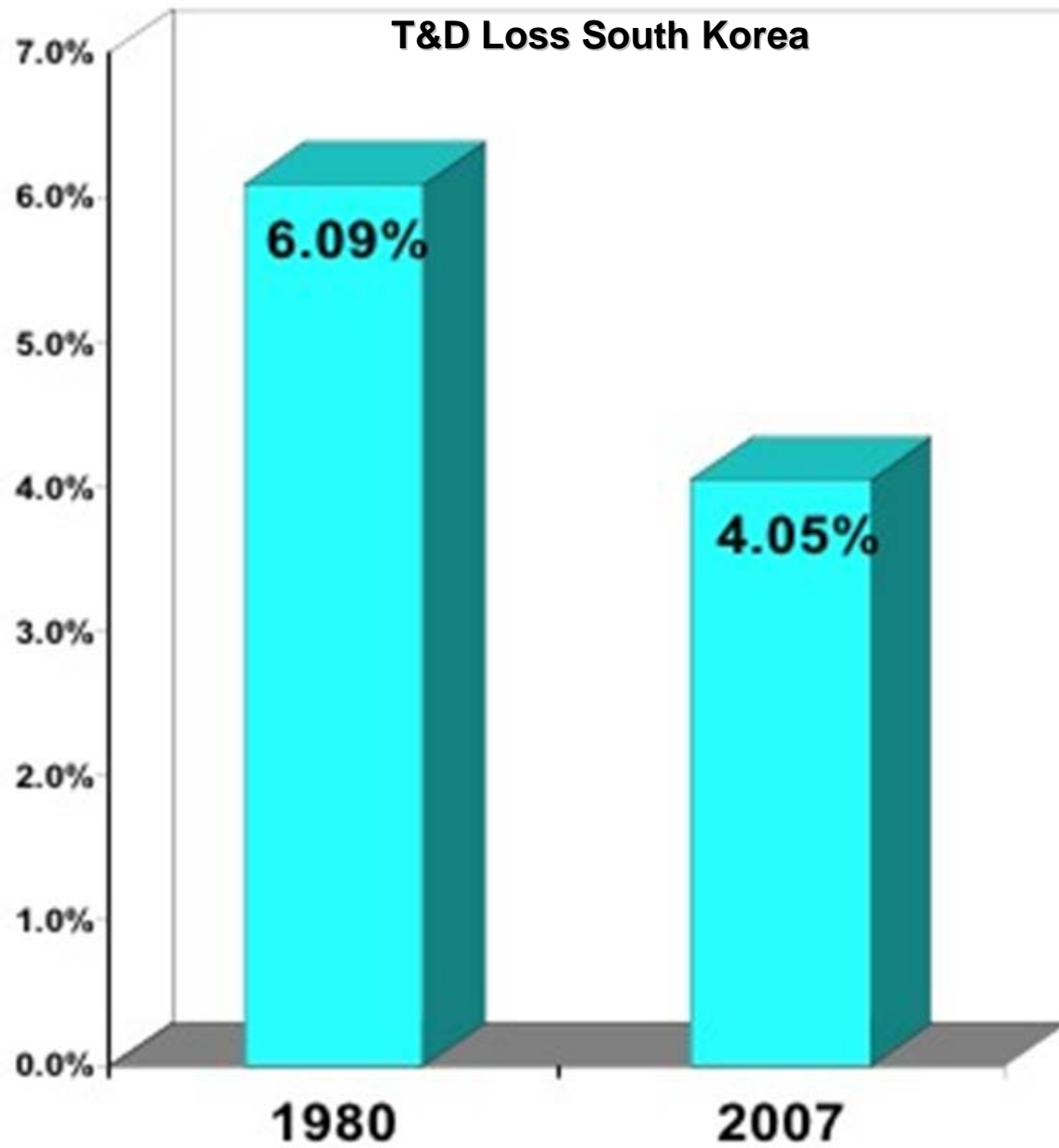


**Improving Transmission
Efficiency Must Become a
Smart & Profitable
Business...**

Reduce System Losses

Reduce Line/
Equipment Losses

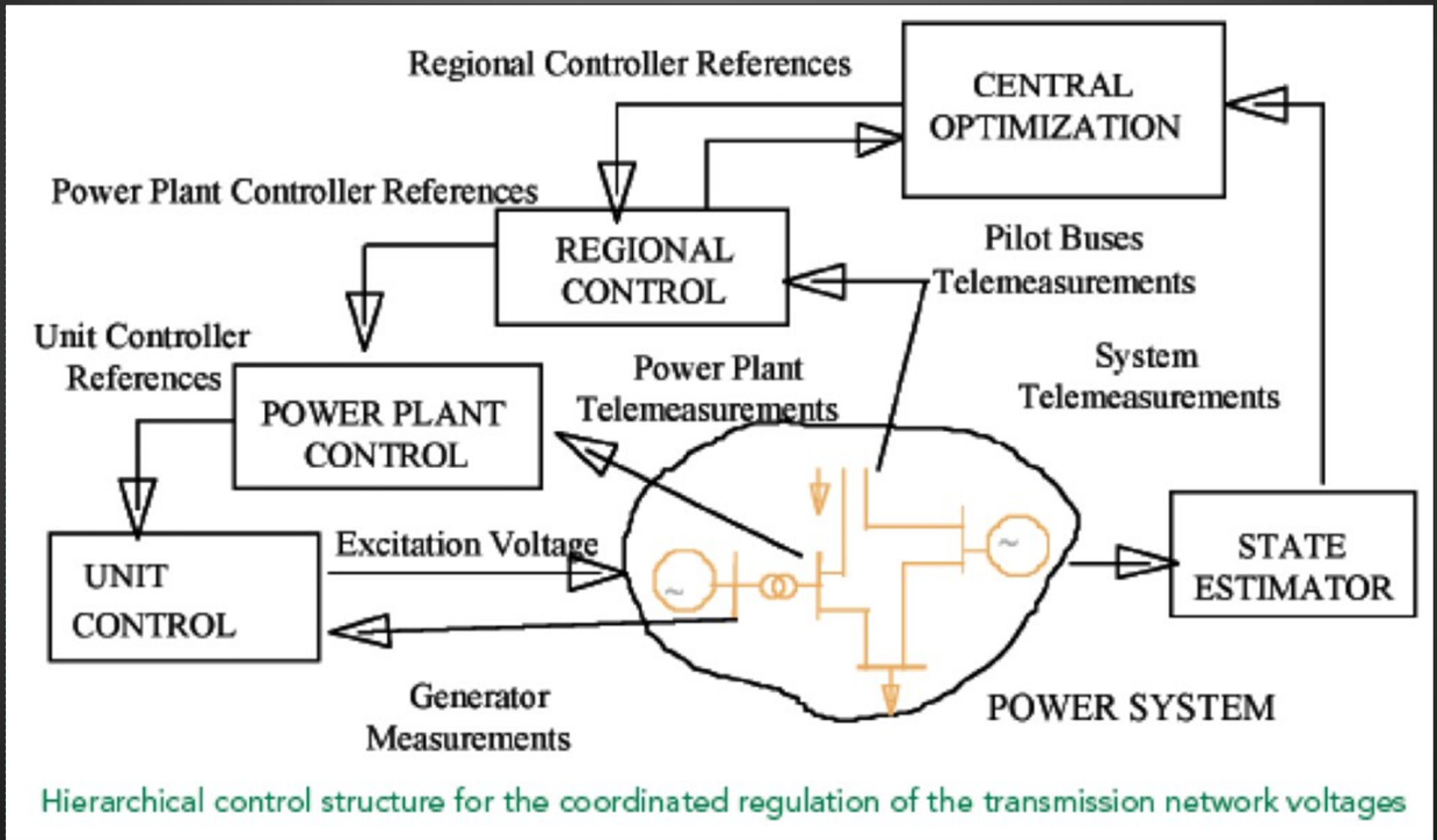
Increase System/ Resource Utilization



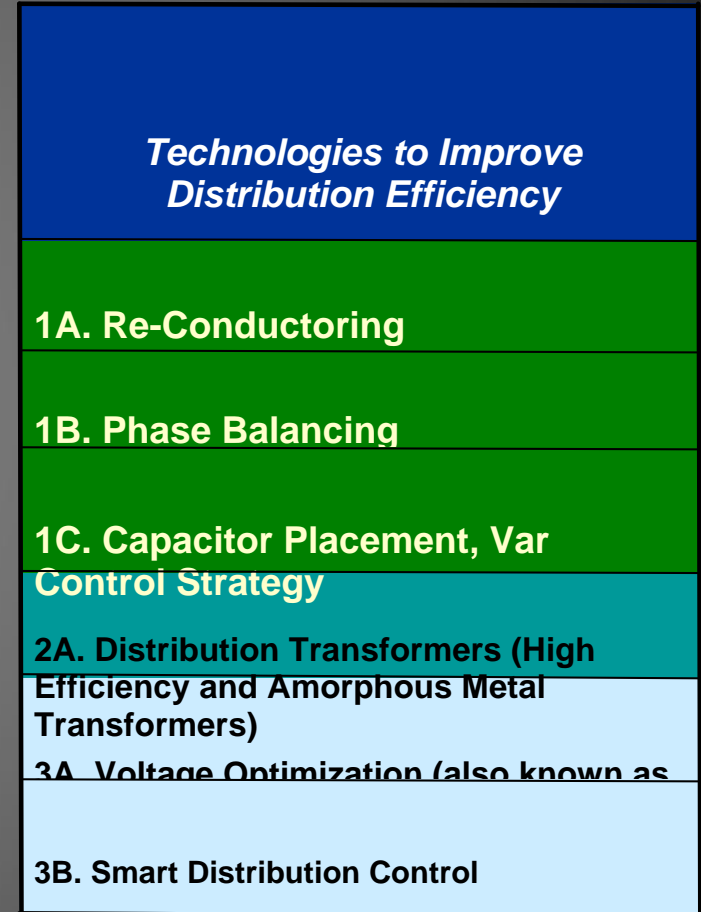
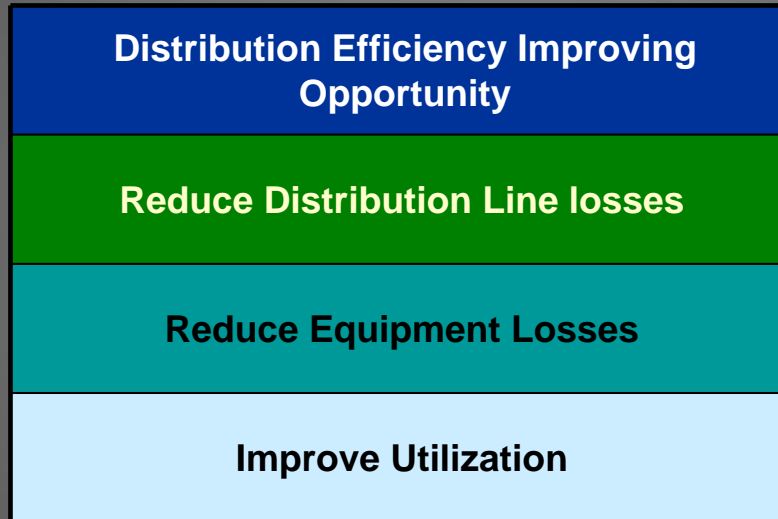
Voltage Upgrade/EHV AC/HVDC



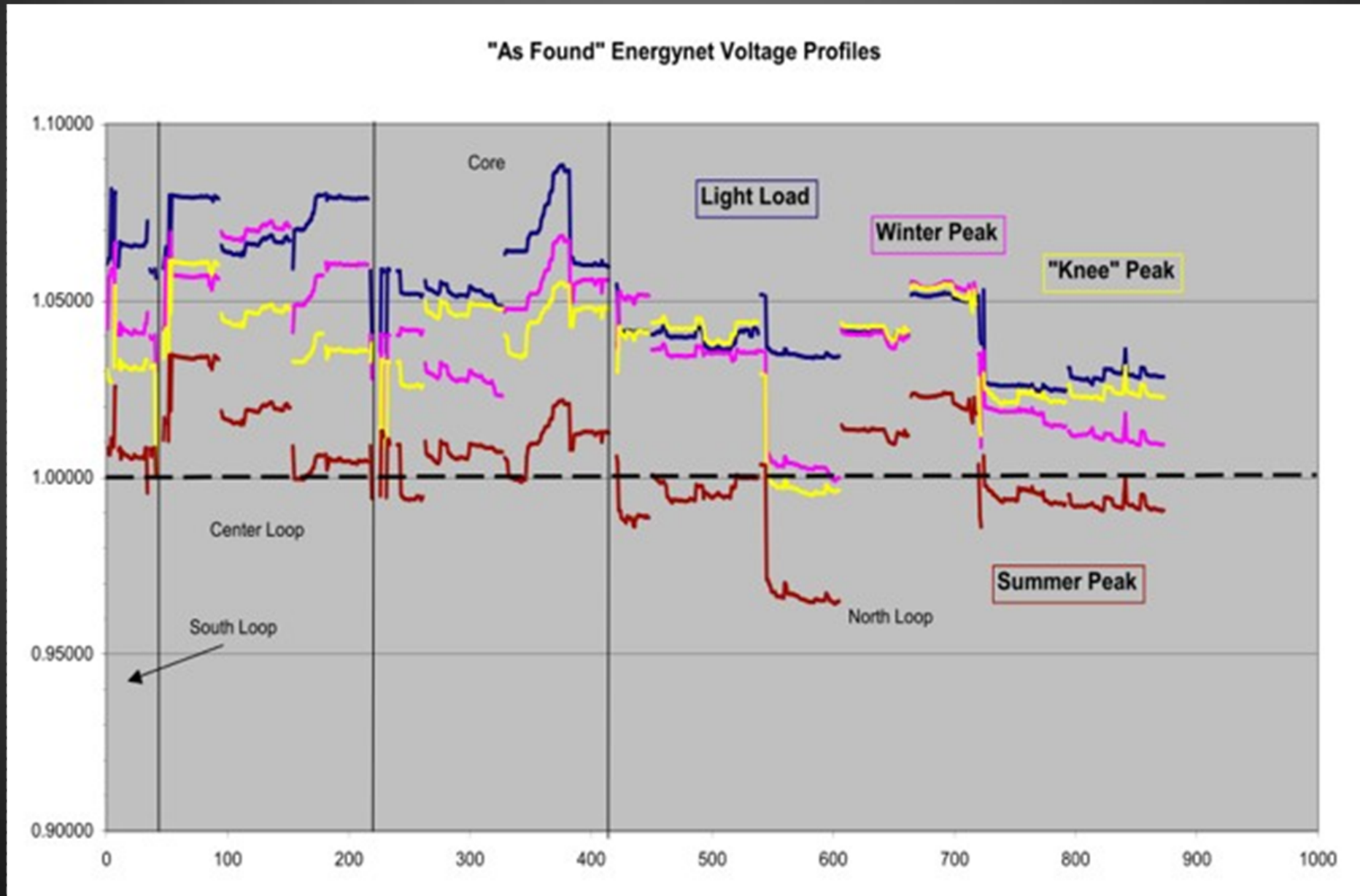
Dynamic Coordinated Voltage Control - VAR



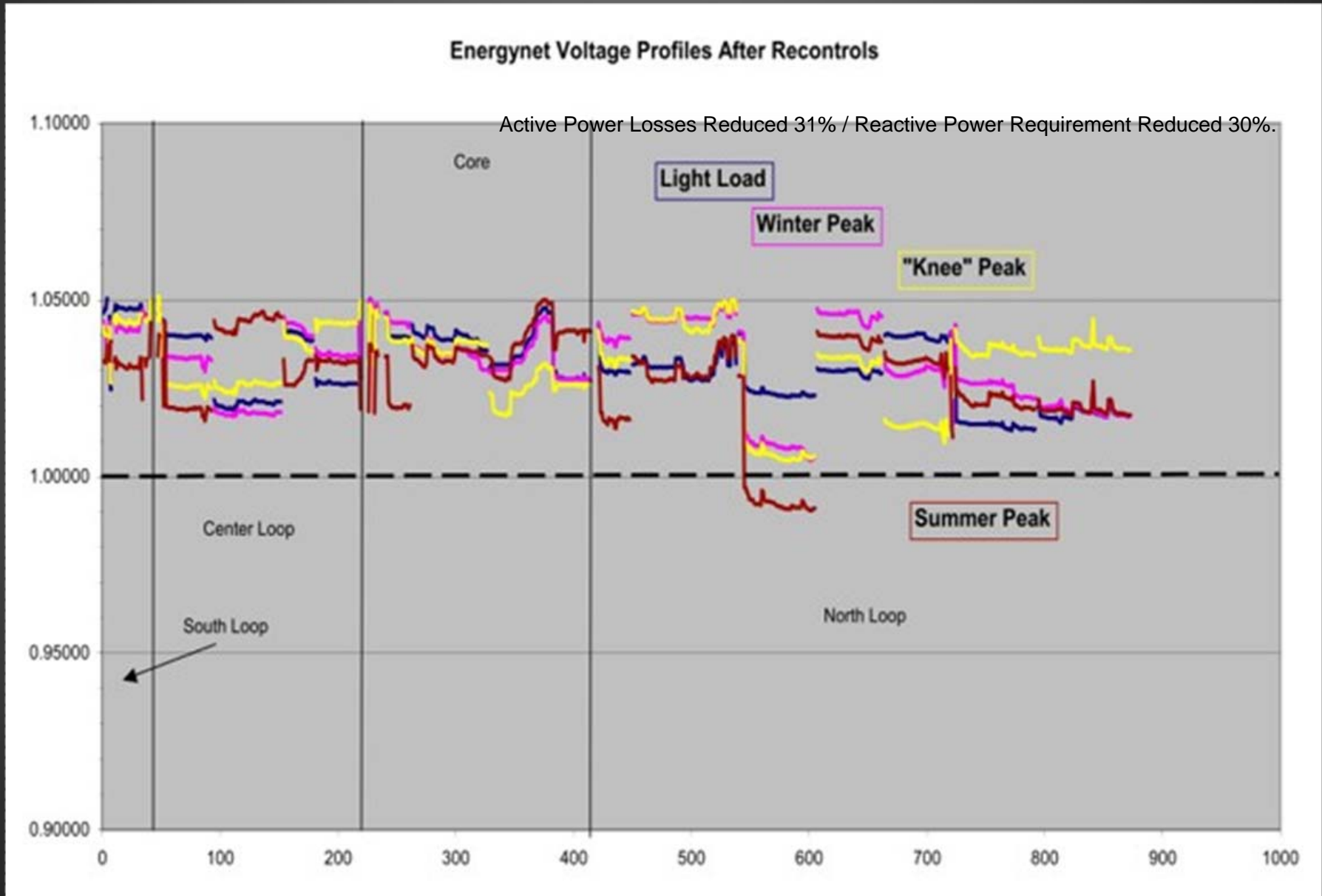




“As Found” Voltage Profiles for Small Distribution Utility

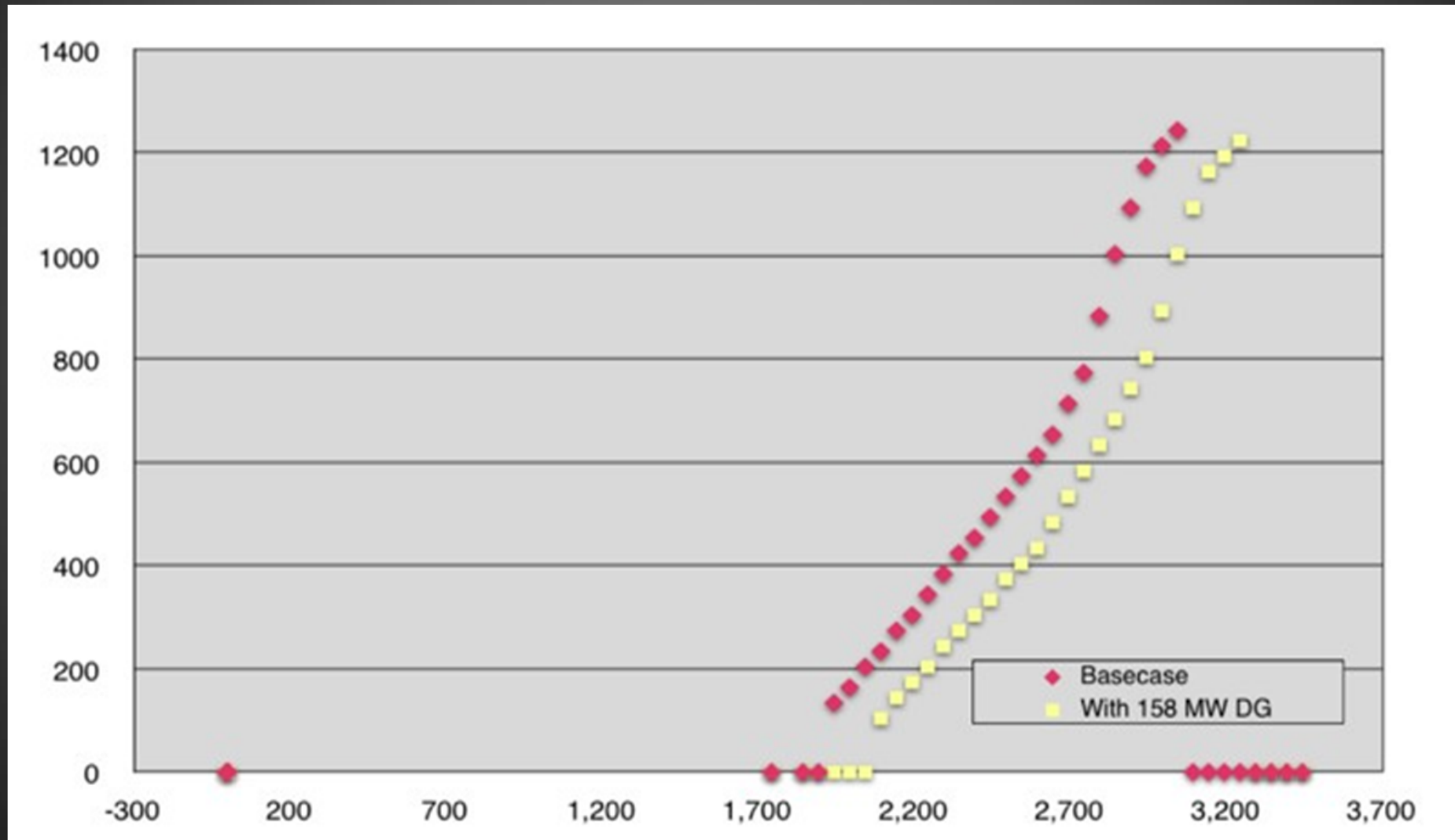


Recontrolled Voltage Profiles Using New Technology



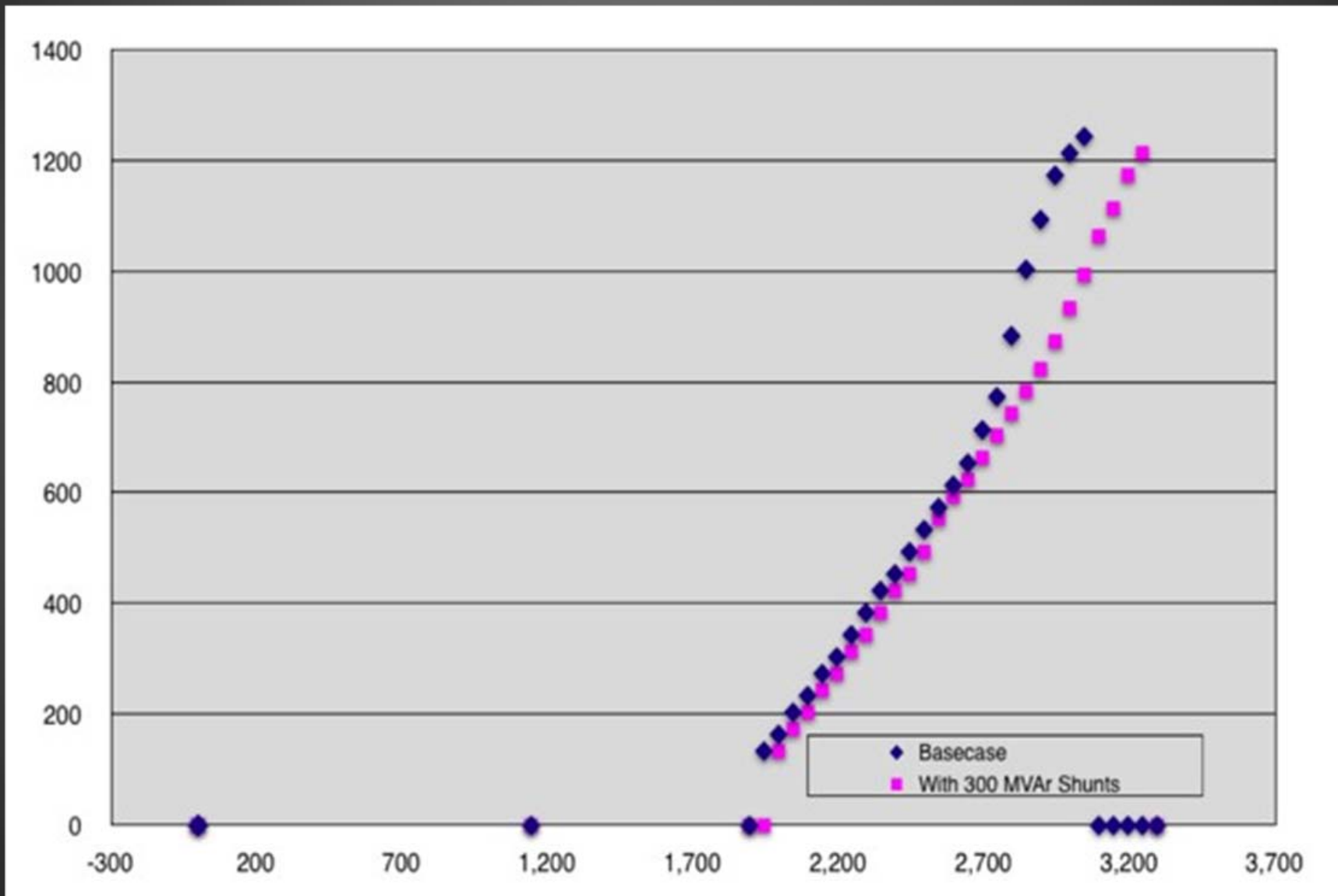
Active Power Losses Reduced 31% / Reactive Power Requirement Reduced 30%.

Optimal Placement of DG: Increases Load Serving Capability



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

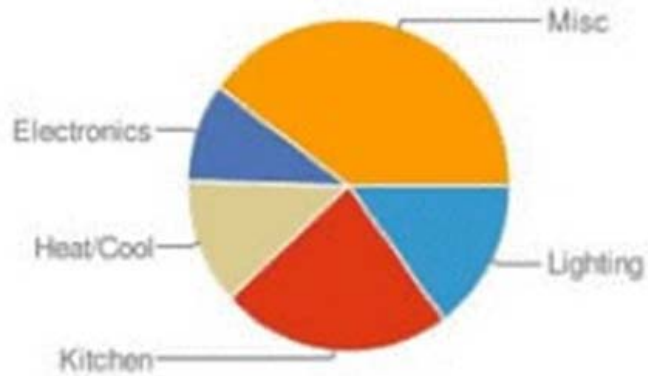
Reactive Optimization: Increases Load Serving Capability



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

Estimated Annual Consumption

All Lighting Kitchen Heat/Cool Electronics Misc

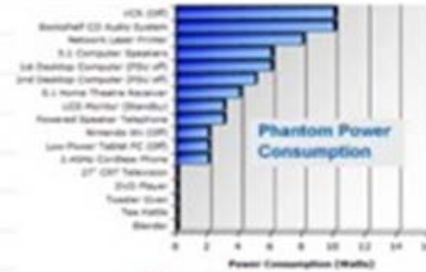


All	kWh/yr
Lighting	1383
Kitchen	2151
Heat/Cool	1142
Electronics	888
Misc	3697

Edit my responses

GroundedPowerSM
Now a Tendril Company.

Smarter energy choices



Advice on steps to reduce consumption and peak demand

Helps identify unnecessary uses, including so-called phantom power from devices that stay on around the clock

Compares household or building usage to neighborhood, community and regional averages



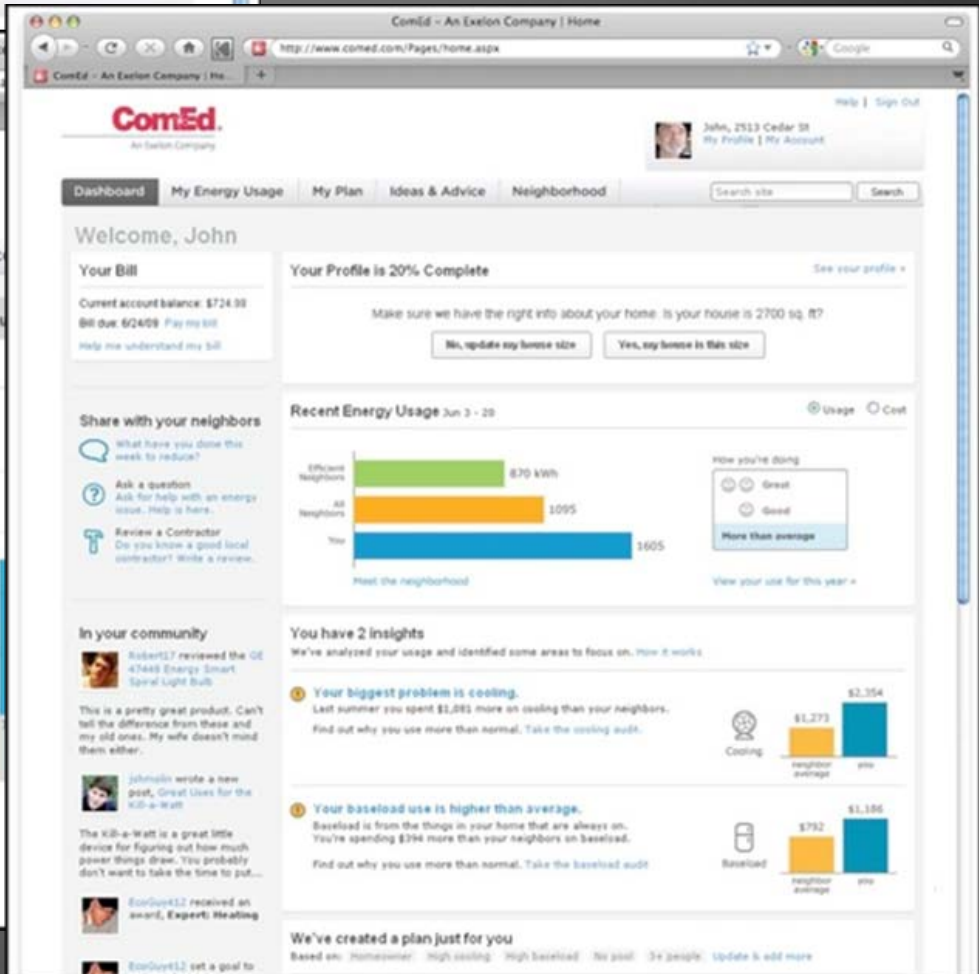
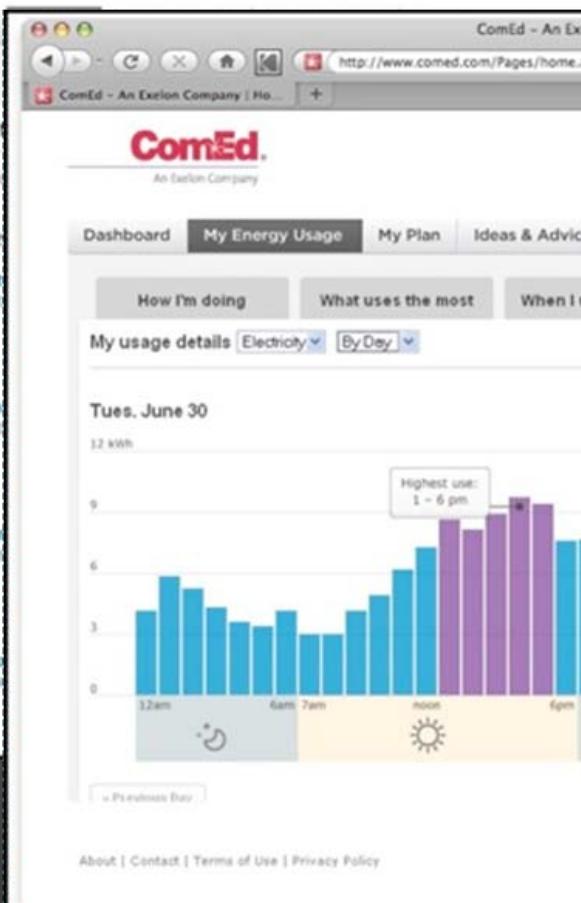
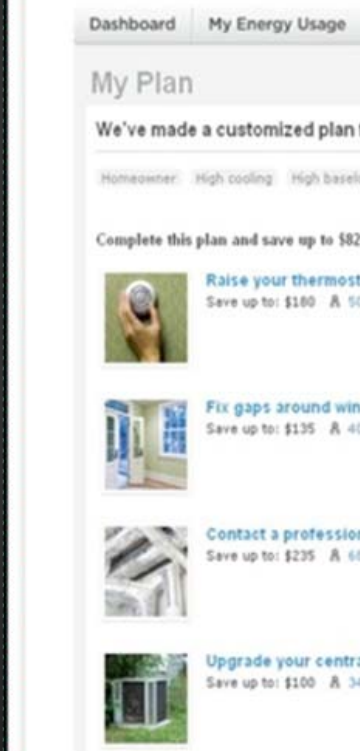
Manage costs & increase reliability



Reduce environmental impact

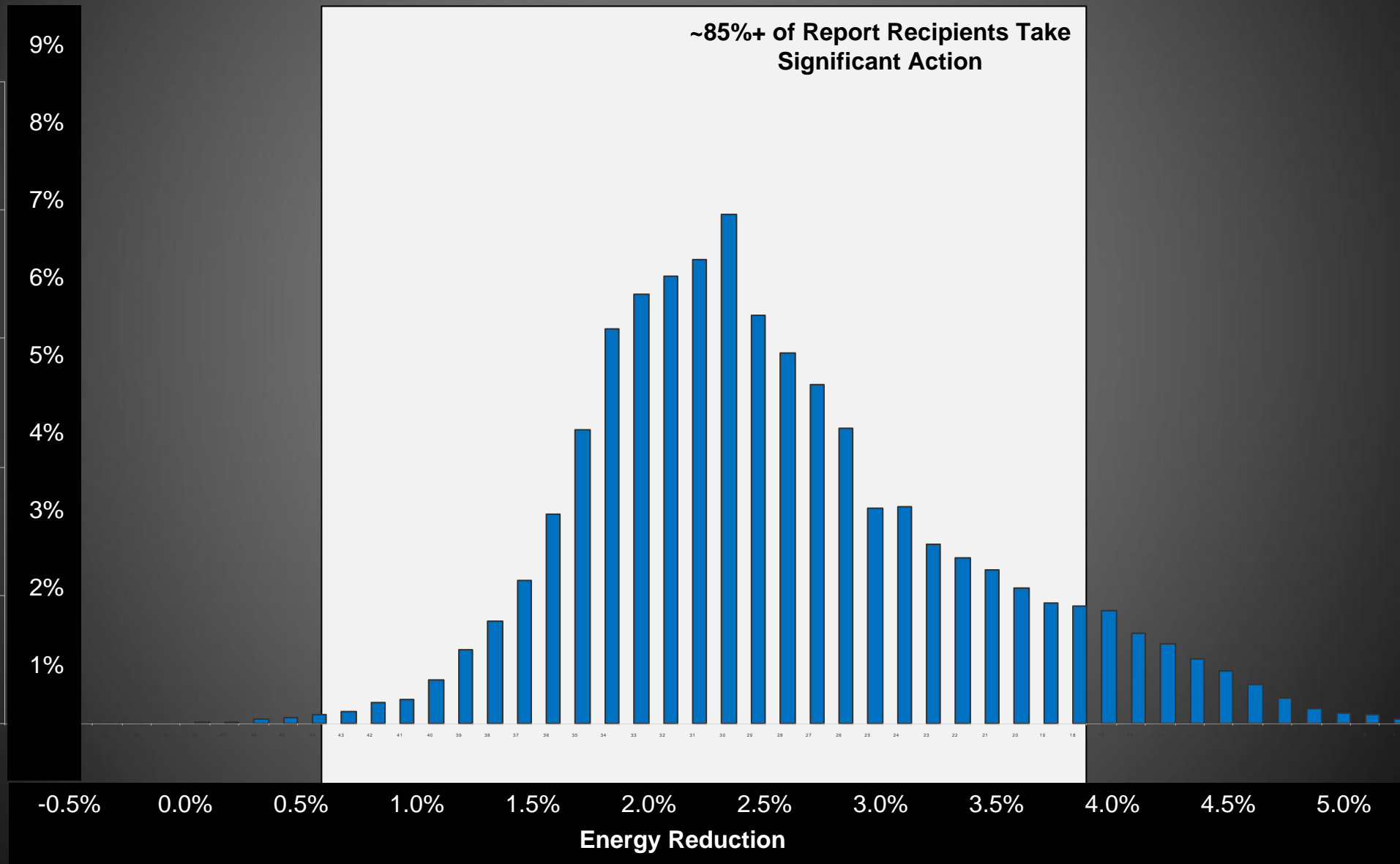


OPOWER Product Suite: Web Platform



Broad Customer Engagement: Key to Success

% of Participating Households



Independent Verification by Summit Blue Demonstrates High Customer Engagement



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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

A photograph of two high-voltage power line towers in a field. A vibrant rainbow is visible in the sky, arching over the towers. The sky is filled with dramatic, dark clouds. In the background, there are several tall, thin structures, possibly chimneys or towers, and a distant cityscape. The foreground is a field of dry, brown grass.

**Thank
You!**