

Peak

Peak Load Management Alliance Fall Conference

November 16, 2011

Did you know?

Siemens provides building automation technology to over 45,000 commercial customers in the US?

Intelligent Load Management

What if ?

20% of C&I load was responsive?

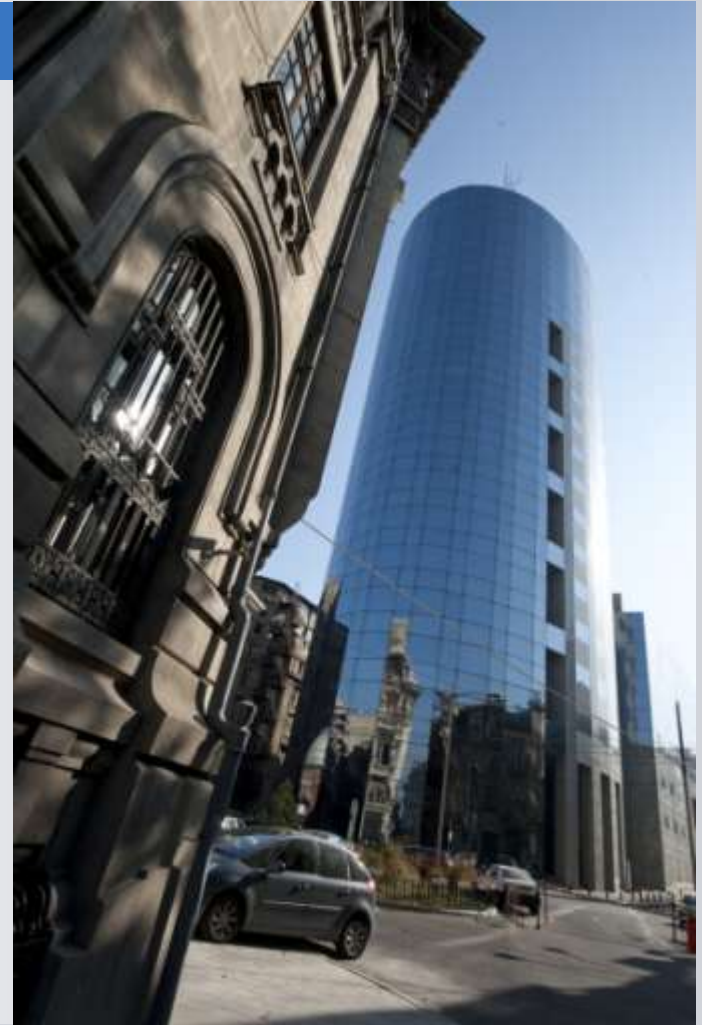
...it was more than responsive?

...it was really, really smart?

...it was web accessible in minutes?

Only buildings with fully functional HVAC were affected?

...and only those minimally occupied?



Intelligent Load Management

What if ?

Buildings were smart enough to reassess their available load reduction based on real time site conditions?

An instantaneous aggregated load profile was created?

Every building could independently report “live kW” to a secure data center?



Intelligent Load Management

What if ?

This technology had already been installed and proven at thousands of customer sites nationally?

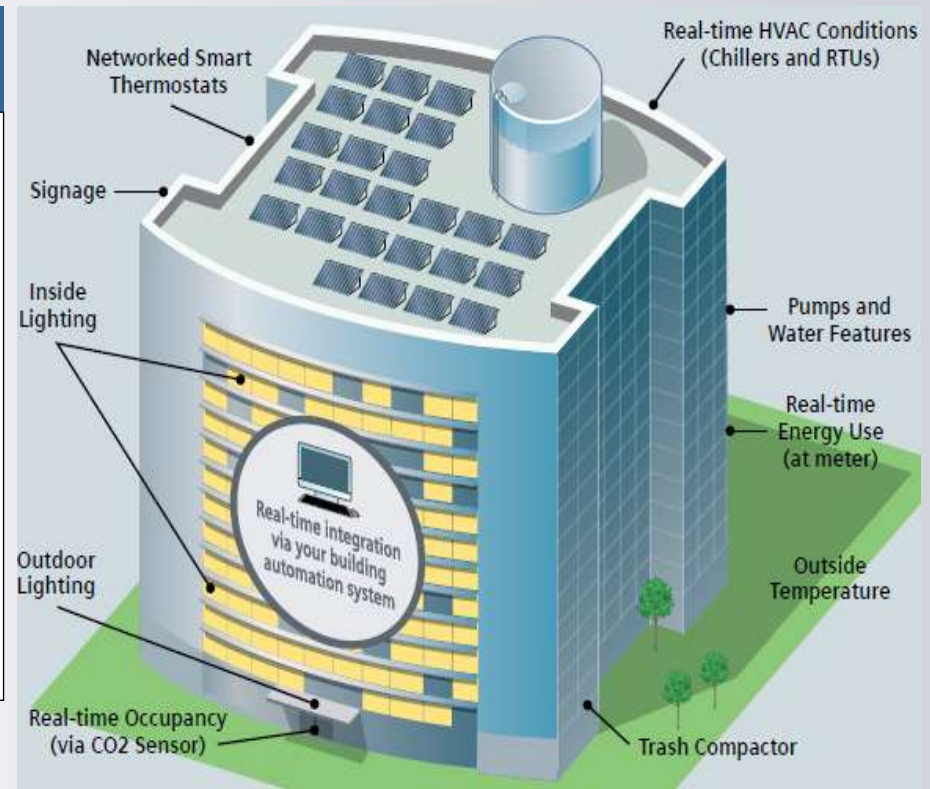
What if web based smart load response could be delivered in MW increments?
be clustered by utility node?
and replace peak generation?



Intelligent Load Management

Site Benefits

- Intelligent automation
- Reduced energy expenses
- Earn LEED points
- Improved Corporate Social Responsibility (CSR)
- Carbon negative power generation



System Architecture/Strategies

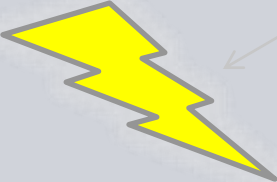
Utility Demand Response Decision Driver/Trigger (via DRAS)

Frequency	Wholesale Value	Price (Future)
60hz	Low	\$0.06
59.9hz	Normal	\$0.10
59.8hz	Elevated	\$0.13
59.7hz	High	\$0.18
59.7hz	Highest	\$0.20

Site Level Response

Example Response Levels*

- Set Point 72F
- Smart Set Point 74F
- Smart Set Point 76F, Turn Off 25% Non Essential Lighting
- Smart Set Point 76F, Turn Off 50% Non Essential Lighting
- Smart Set Point 78F, Turn Off 50% Non Essential Lighting/Equipment



1 minute aggregated meter telemetry Provided back to grid operator 24/7/365



Utility grade accuracy shadow metering

How does it work?

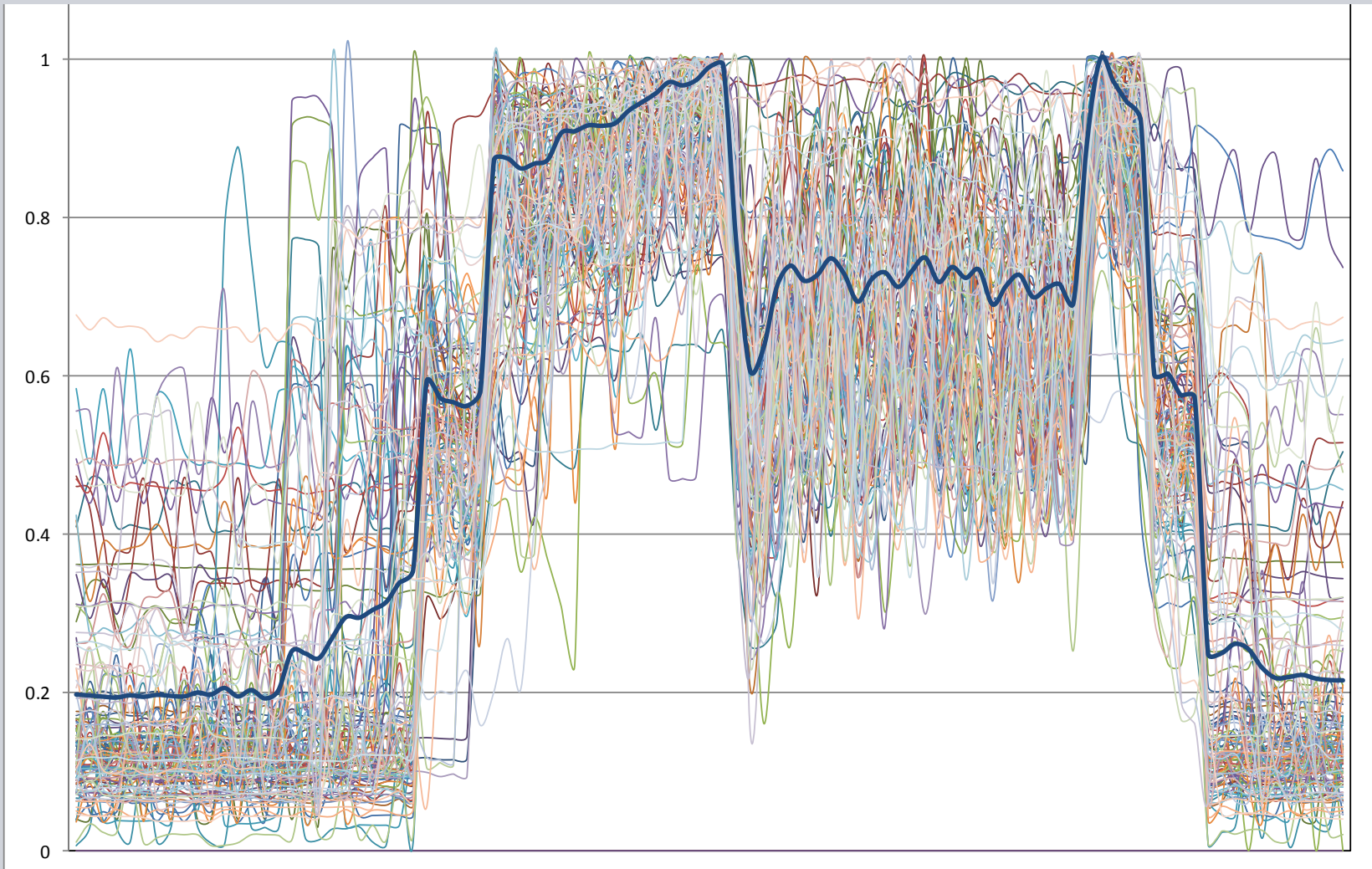
<1 Minute Response Telemetry



Unique Technology Features

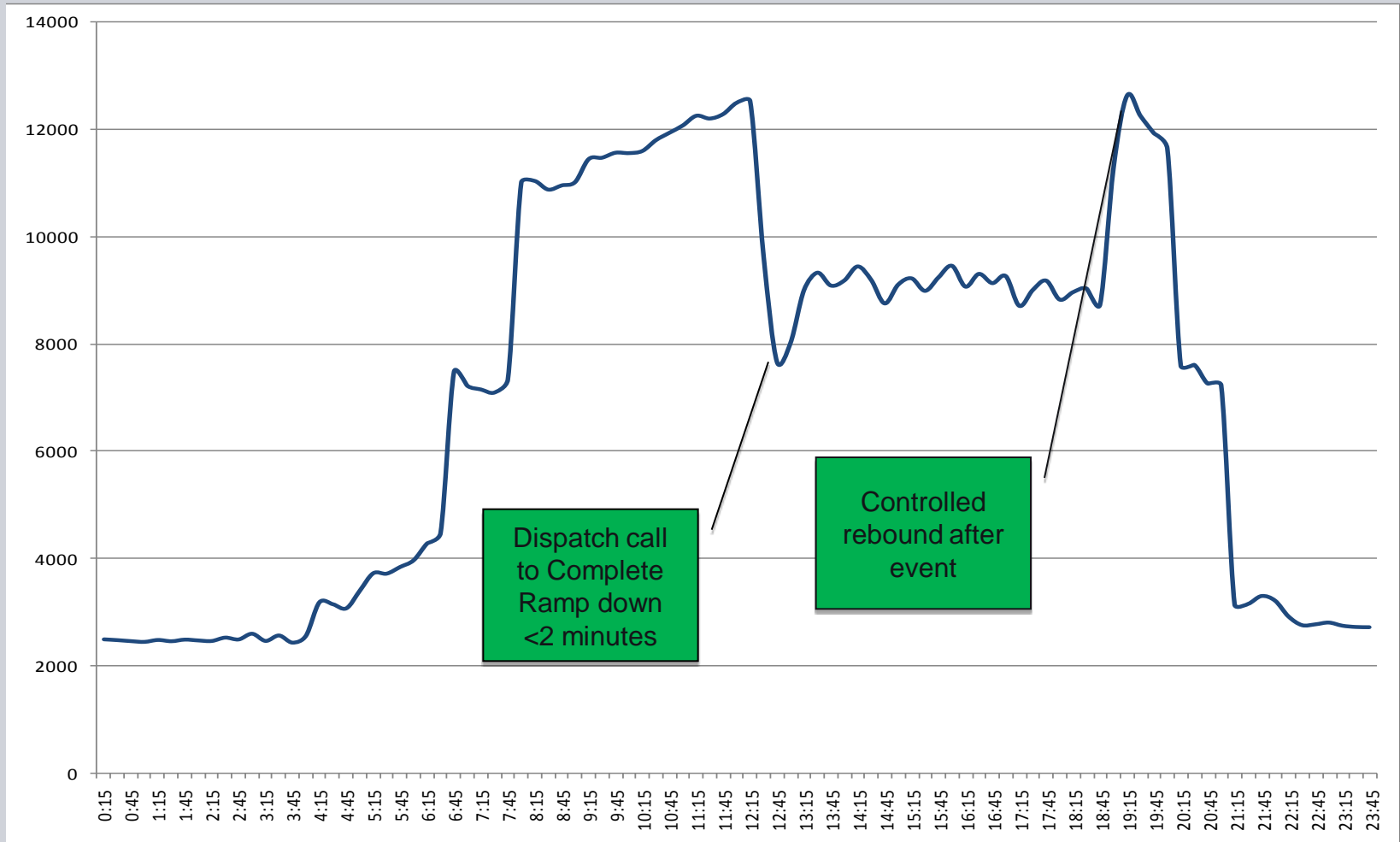
- 100% automated response
- No manual measures
- No on-site personnel needed to implement response measures
- Capacity on-demand
- Internet based
- “Light Touch” – loads are shed gradually and dynamically, according to customer priorities

“Behind the scenes” – Performance of each individual site

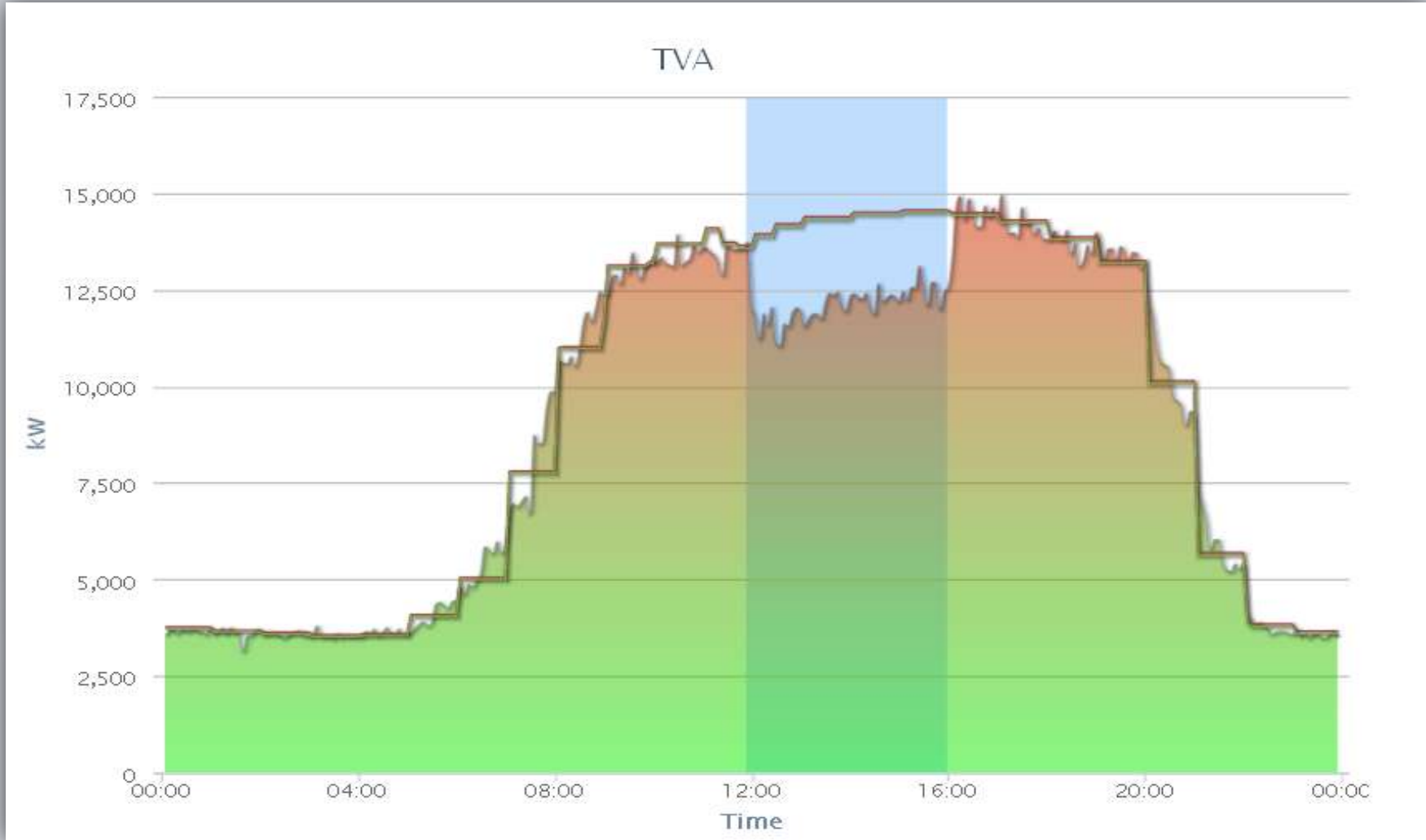


100% end-to-end automation

Aggregate Performance – What the utility sees



SureGrid PowerCommand[®]



For more information...



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