

Presented to
CFRT

Fortune Data Center, San Jose

Energy Efficiency Leadership for Data Centers and IT

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November 6, 2009



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Four-year Check Up



- ▶ Utility engagement with the high tech industry (data centers and IT)
 - ▶ What's going well
 - ▶ What needs improvement
 - ▶ Where do we go next?

- ▶ Status of energy efficiency program
 - ▶ Accomplishments, goals, and future funding
 - ▶ Program design
 - ▶ Market participation gaps
 - ▶ National picture

Results and Forecast



Performance (data center only)

- ▶ About \$7 million in incentives
- ▶ 7 MW plus of load reduction (5000+ homes)
- ▶ 60+ GWh energy use

2010 through 2012

- ▶ Reserved \$50 million in data center program funding

Aspiration: 20 MW plus annual load reduction

Initiatives In Development



- ▶ Incentive program for EnergyStar servers
- ▶ Rebates for virtualization/server consolidation
- ▶ Incentives/rebates for conversion to thin-client systems

Passive Cooling Strategies for IT Equipment

Virtualization 2.0 – Server Management

Solid State Data Storage

Cooling Storage Systems

Virtualization 2.5 – IT Workload Management

Heat Recovery

Modular Airflow Isolation

Virtualization 3.0 – Holistic Data Center

Optical Data Storage

Change in Power Delivery Voltage

On-Site Generation

Liquid Cooling Strategies

Program Wish List



- Support for metering/monitoring deployment
- Comprehensive technical support services
- Less onerous requirements

- Great support from:
 - leading IT industry companies
 - Co-location industry
 - telecomm
- Very poor penetration of mid- and small-market customers
- VARs and SysInt not proving to be fruitful channels

National utility EE program picture



- Great awareness
- Poor traction
- Resource gaps

Demand Response/Load Shifting



- Emergency generator operation
- IT workload management
- Thermal energy storage

- Pass-through billing
- Site selection guidance

More Information



Visit www.pge.com/hightech

Contact me with feedback and suggestions:



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