Presented to

NACSA

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Utility Leadership in High Tech Industry Engagement

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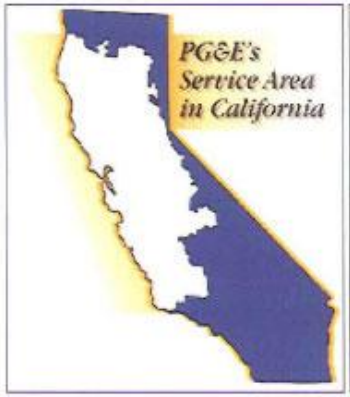
Pacific Gas and Electric Company®

About Us

Pacific Gas and Electric Company (PG&E)



- $18 B+ Market Capitalization
- 20,000 Employees
- Provides energy to 15 million or nearly 1 in 20 people in the U.S.
- 70,000 square-mile service territory
- More than half of our electricity comes from sources that emit no CO2

Electric and gas distribution customers	5.0 MM electric 4.2 MM gas
Electric transmission circuits Electric distribution circuits	18,616 miles 120,000 miles
Gas transmission backbone Gas distribution	6,128 miles 40,123 miles
Electric generation capacity Nuclear (1), Fossil (2), Hydro (110) Plants	6,420 MW 22,544 Peak MW

PG&E

- PG&E is committed to being the leading utility in the US
- Our engagements with specific industries (such as wineries and high tech), exemplify our leadership activities

Energy Efficiency

- Utility-leading portfolio of energy efficiency programs and services for data centers and information technology
- Sponsorship and leadership of the Utility IT Energy Efficiency Coalition

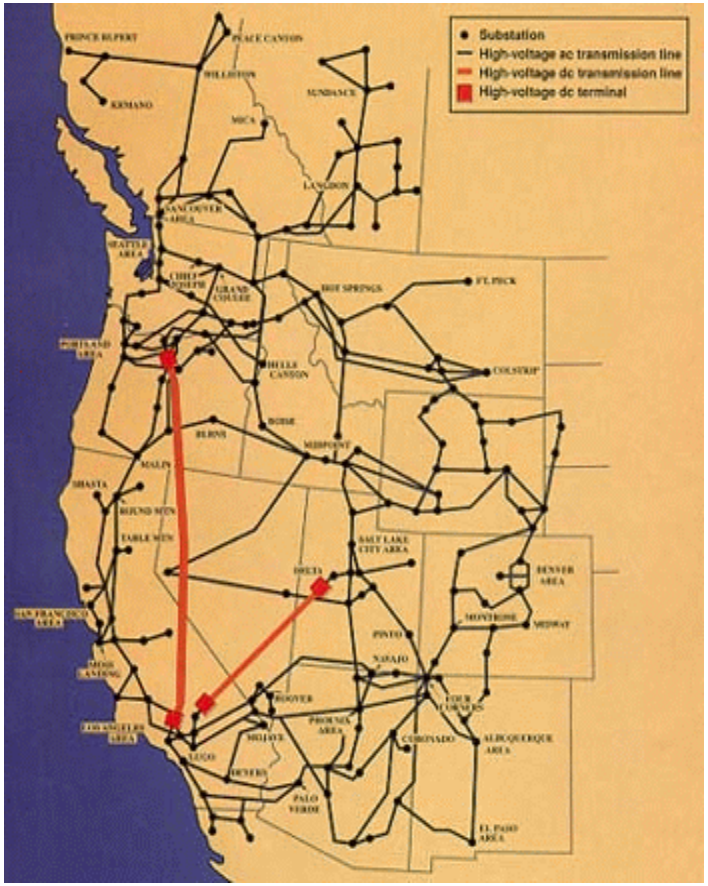
Broader DC and IT Engagement

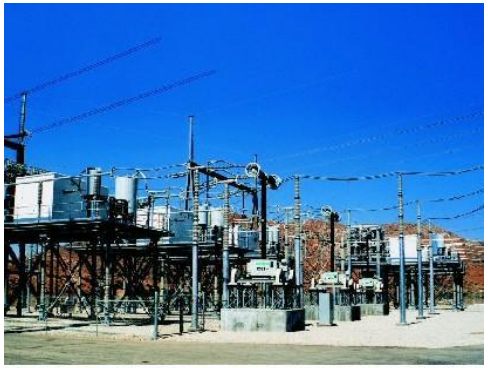
- Demand Response – generators and IT controls
- Permanent Load Shifting – thermal storage and IT management
- Onsite Generation
- Large Load Siting Guidance
- Pass-Through Power Rates
- Purchase of Backup Generator Test Power

Of Topical Interest

The term *smart grid* represents a **vision** for a digital upgrade of distribution and long distance electric transmission grids to both optimize current operations, as well as open up new markets for alternative energy production.

What's So "Dumb" About The Grid?





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True or False?

- In the US:
  - half of generation capacity is unused,
  - half of long distance transmission network capacity is unused
  - two thirds of local distribution is unused

True or False?

- "The electric grid is 40% inefficient, and smart grid will capture all of that."
- Smart Grid will:
  - "Allow seamless integration of renewable energy and make use of solar –24 hours a day"
  - "Exploit the use of green building standards to lighten the energy load"
  - "Make large scale energy storage a reality"
  - "Enable use of plug in hybrid vehicles"

Utility Perspective

- A “Smart Grid” will not affect:
  - Power plant fuel conversion efficiency
  - Spinning Reserve requirement of 5 to 7%
  - Transmission and distribution losses

Utility Perspective

- A “Smart Grid” can enable:
  - Integration of distributed generation, and storage
  - Real time pricing
  - Demand response
  - Load shifting
  - Conservation
  - Promotion of energy efficiency

AMI: A Portion of the Smart Grid

- PG&E is implementing AMI for 5 million electric and 4.2 million gas accounts
- Uses radio frequency communications to and from meters to base stations, then cell phone network to PG&E
- Allows hourly meter reading, remote turn on and shut off, pricing and demand response signals
- Onboard computing power and data storage capability may be used to host some processing
- System is seen as a gateway to communicate with enabled appliances

PG&E Commitment

- Utility industry leadership in data center and IT infrastructure engagement
- Ongoing partnership with high tech industry
- We need your support, endorsement, encouragement

More Information

Visit www.pge.com/hightech

Contact me with feedback and suggestions:

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