

Demand Side Management Potential Study

For CPS Energy



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Nexant Corporate Profile

- Formed on January 1, 2000
- Twenty corporate, representative, and project offices around the world
- Total staff of 325 employees—including software developers, energy engineers, and consultants
- 1,700 energy industry assignments in over 70 countries
- Recognized leader in power network software development and energy efficiency and incentive programs

Energy and Carbon Management—Business Focus

National leader in the innovative design, implementation, and evaluation of many of the largest commercial, industrial, and residential energy efficiency incentive programs in the United States

- Supports end-to-end DSM program consulting to utilities throughout North America:
 - Program design, implementation, administration, tracking, reporting, and evaluation
 - Demand-response implementation
 - Strategic studies and regulatory support
- Provides technical services to large energy end users and service providers:
 - Energy auditing, commissioning, retrocommissioning
 - Performance measurement and verification
 - Litigation support
 - Owner's representation



Energy and Carbon Management

U.S. Energy Management Projects



Sample of Market Potential Studies

Investor Owned Utilities

- Iowa Utility Association
- Georgia Power Company
- Xcel Energy
- PacifiCorp
- Southern California Edison
- Cheyenne (WY) Light, Fuel, and Power
- Reliant Energy
- Idaho Power

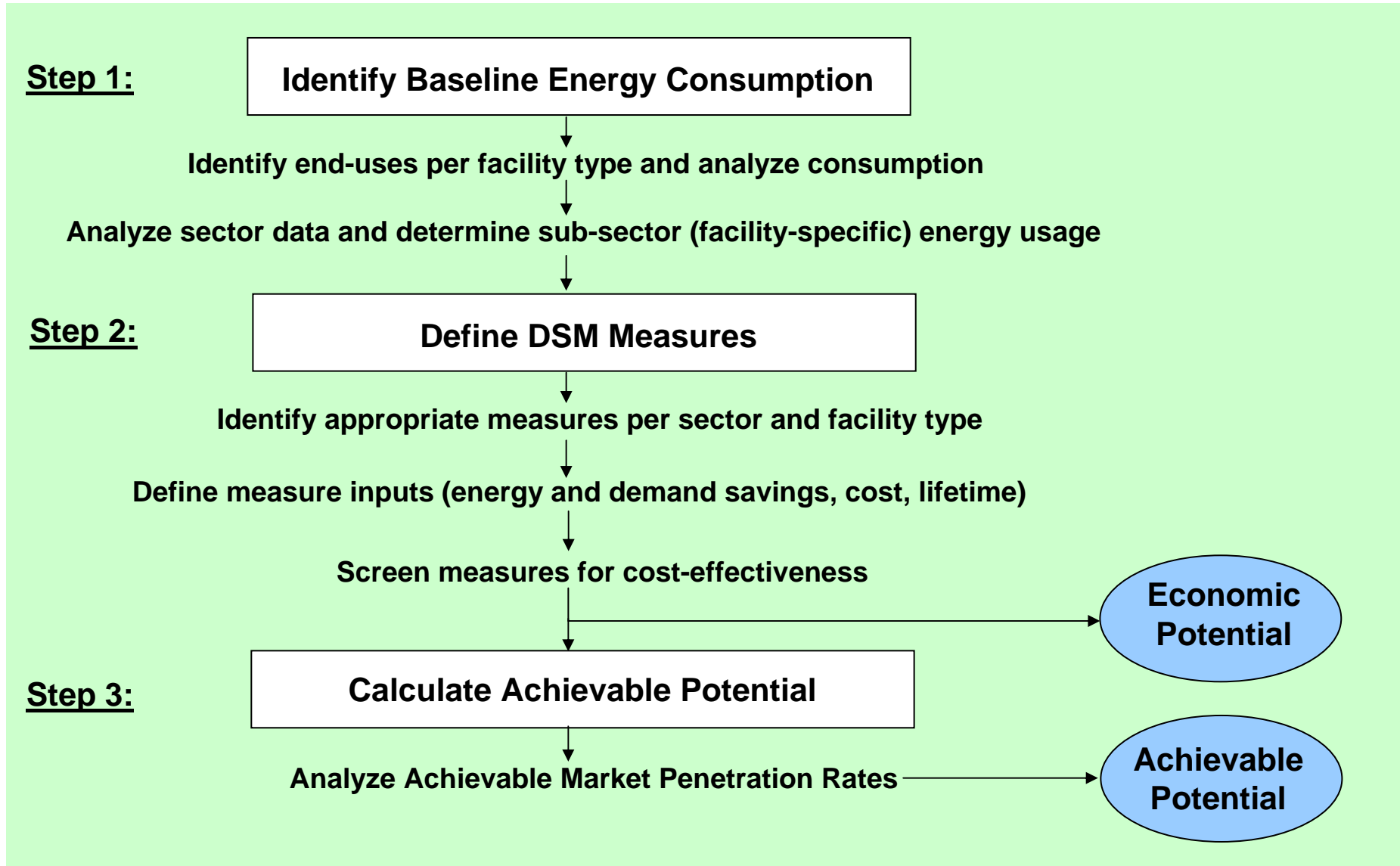
Public Utility Systems

- City of Redding (CA)
- Roseville (CA) Electric
- New York Power Authority
- City of St. George (UT)
- Platte River Power Authority

Market Potential Study Overview

- *Demand side management (DSM) programs encourage customers to improve the efficiency of equipment, buildings, and processes, thereby saving electricity and reducing system demand.*
- *Goal of the market potential study is to evaluate the DSM resources available to CPS Energy's customers across the three primary sectors:*
 - *Residential*
 - *Commercial*
 - *Industrial*
- *The study results in a model of the cost-effective DSM potential available through 2020*

Market Potential Study Process

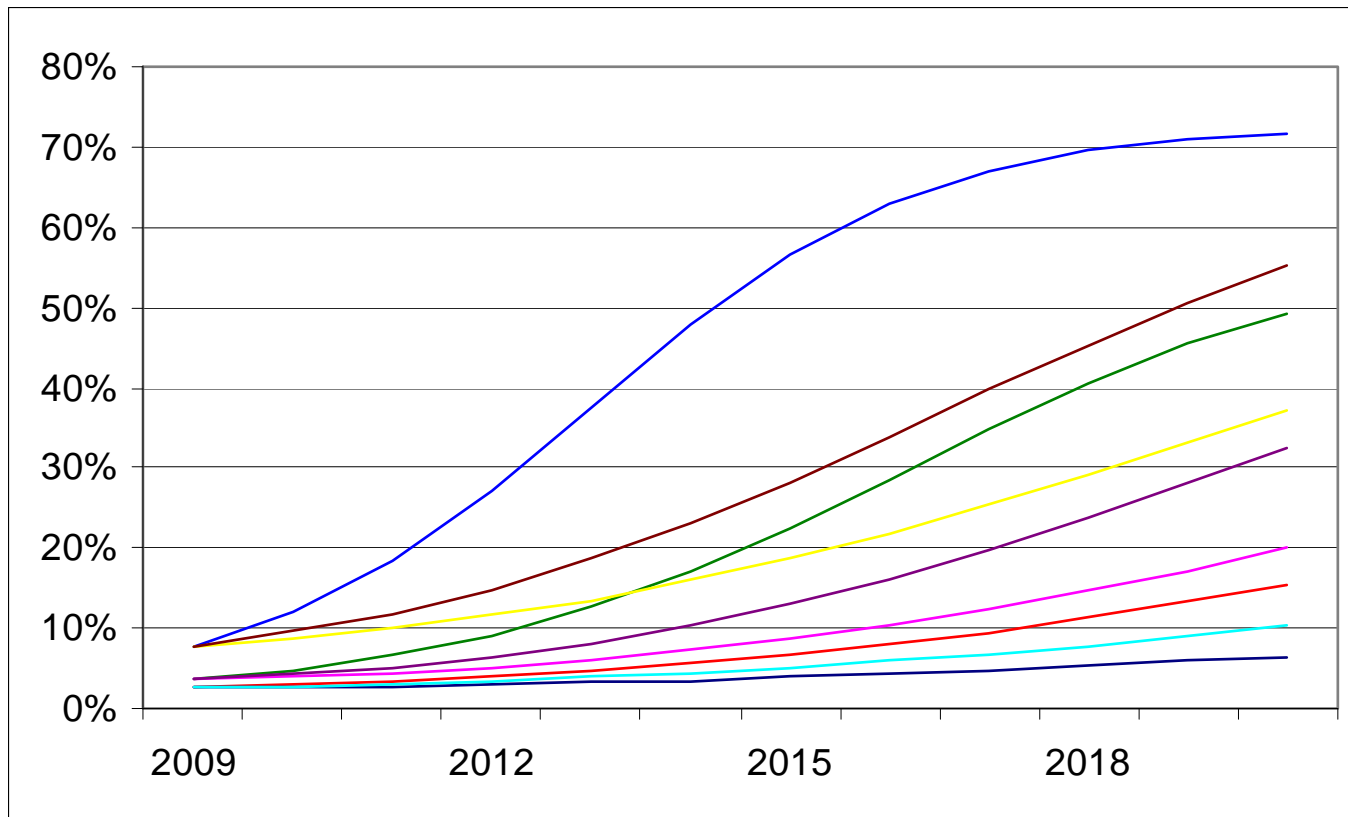


Achievable Potential

- Achievable potential is calculated by incorporating the cost effective measures into the defined baseline and applying appropriate market penetration rates.
- The market penetration rate is the rate of acceptance of a DSM program or measure over time.
- Because program implementation scenarios have a direct influence over such market penetration rates, Nexant analyzed three implementation scenarios:
 - **“Low” incentives:** Incentives subsidize 25% of the incremental customer costs to implement the DSM measure
 - **“Moderate” incentives:** Incentives subsidize 50% of the incremental measure costs
 - **“Aggressive” incentives:** Incentives subsidize 75% of the incremental measure costs

Market Penetration Curves

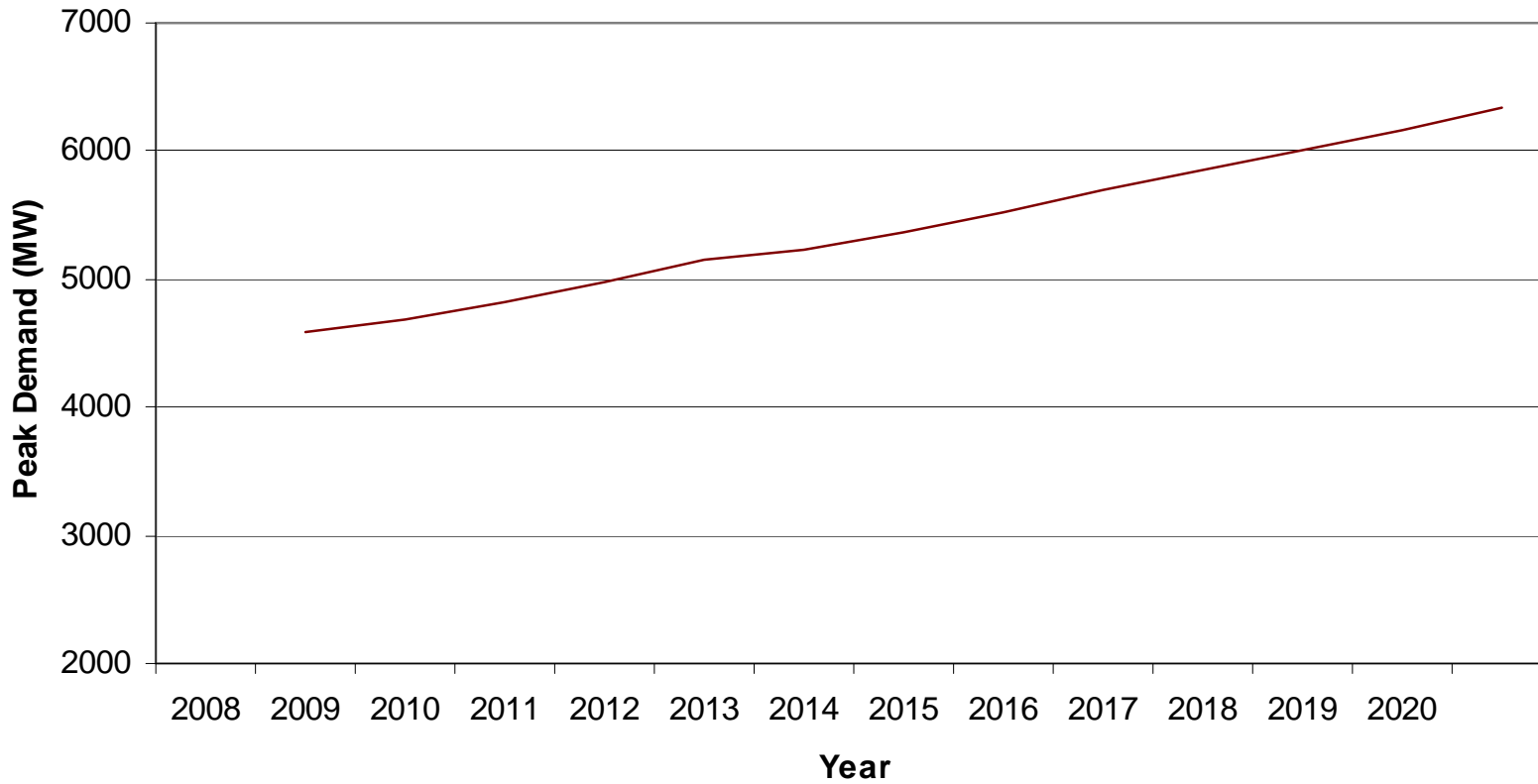
Market penetration curves*
Turnover / New Construction



* Separate curves were used for retrofit opportunities and for turnover/new construction

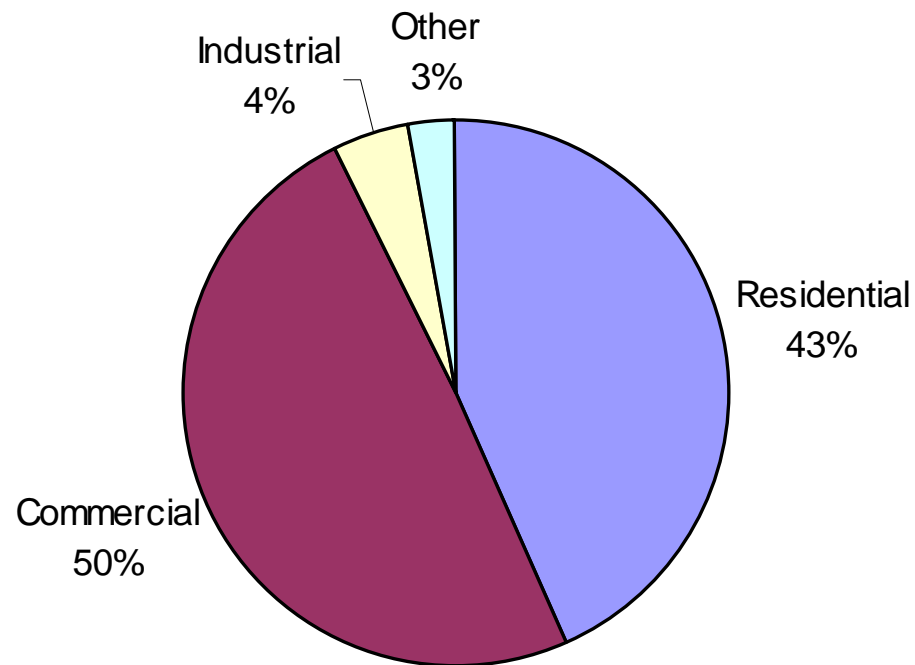
CPS Energy Forecasted Demand Growth

Forecasted Peak Demand 2008-2020



CPS Energy Sector and End-Use Characteristics

*2008 Electricity Sales by Sector**



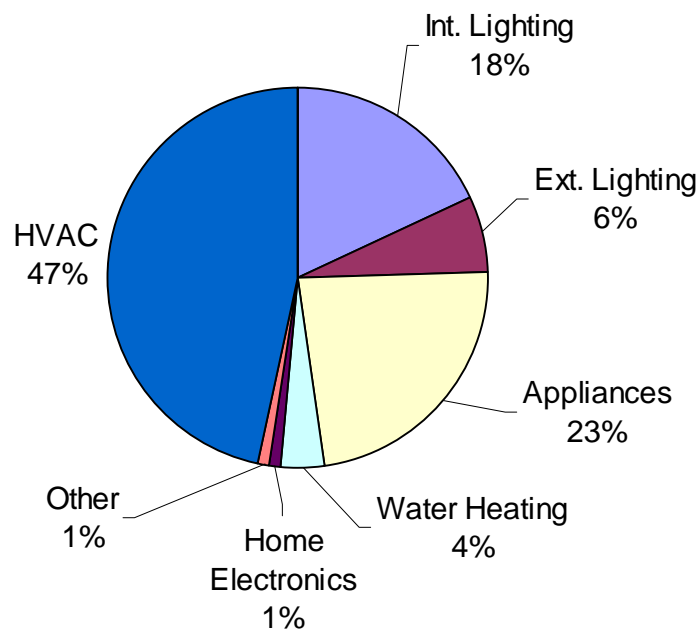
*The Industrial Sector was defined by Nexant based on facility NAICS codes

Residential Sector Analysis

Aggressive incentive scenario results:

- Peak demand reduction potential of 241 MW by 2020
- Energy savings potential of 1,424 GWh by 2020
- Total Program Cost (including incentives, administrative, and marketing costs) of \$366 million
- Total Program Benefits of \$1.04 billion to CPS Energy

Savings Potential by End-Use

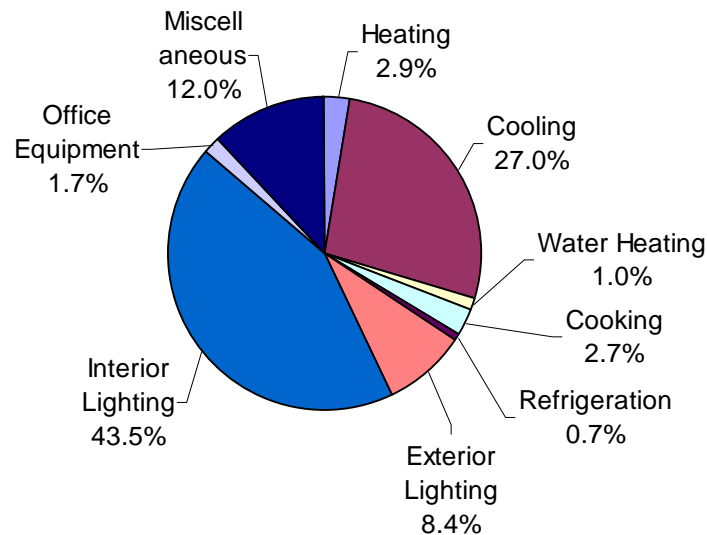


Commercial Sector Analysis

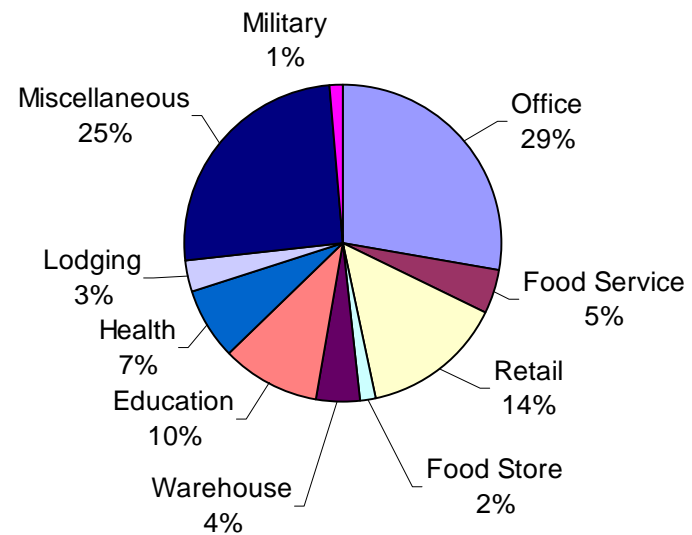
Aggressive incentive scenario results:

- Peak demand reduction potential of 319 MW by 2020
- Energy savings potential of 1,119 GWh by 2020
- Total Program Cost (including incentives, administrative, and marketing costs) of \$259 million
- Total Program Benefits of \$362 million to CPS Energy

Savings Potential by End-Use



Savings Potential by Facility Type

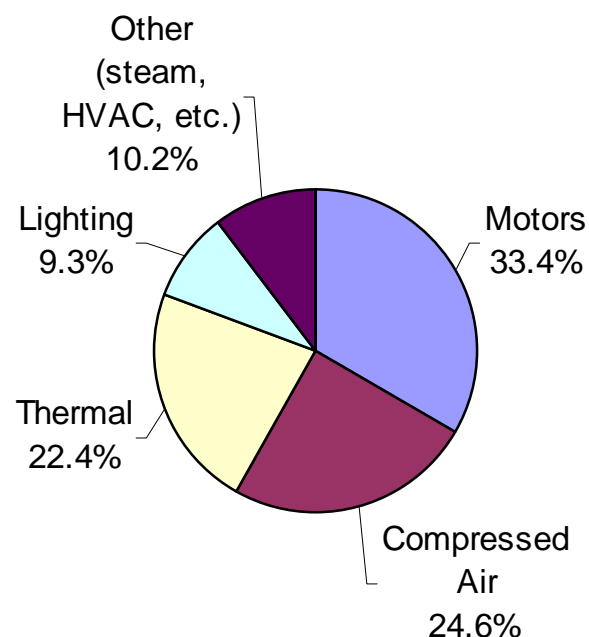


Industrial Sector Analysis

Aggressive incentive scenario results:

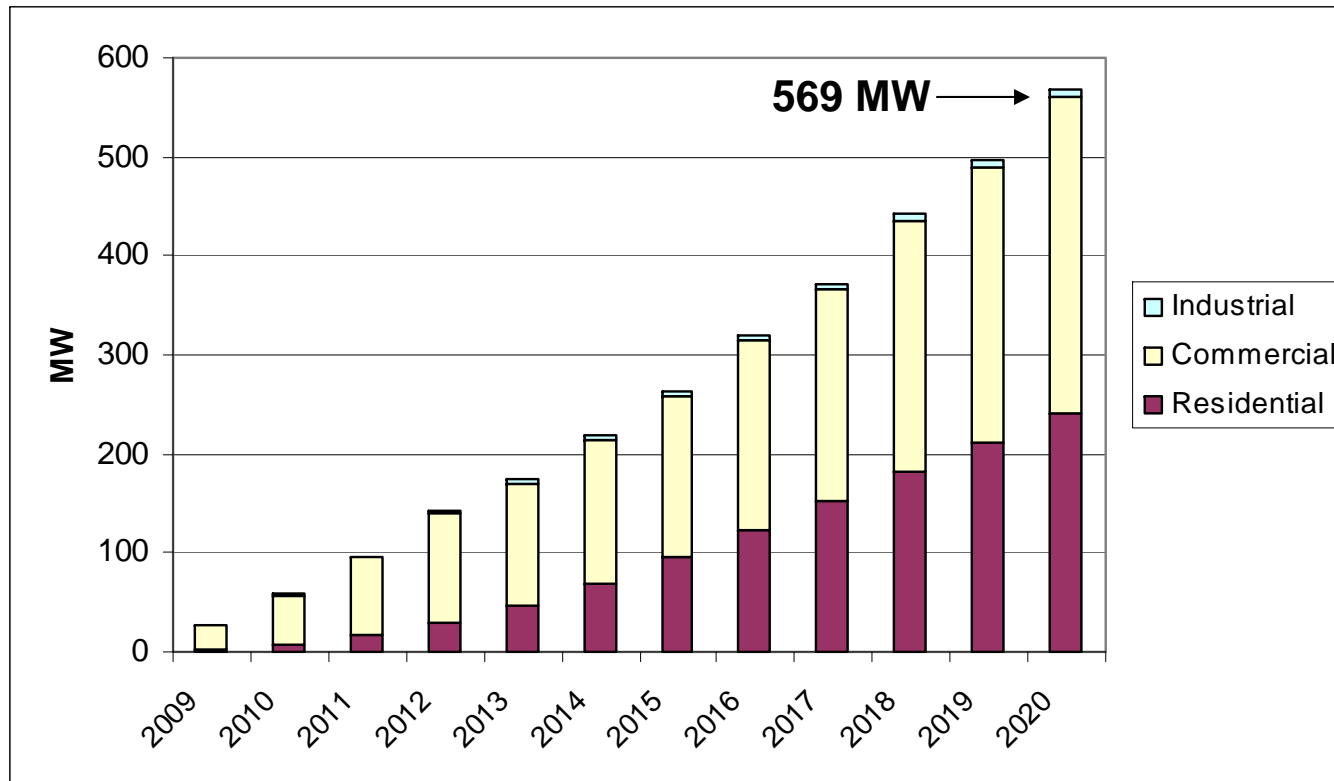
- Peak demand reduction potential of 9 MW by 2020
- Energy savings potential of 75 GWh by 2020
- Total Program Cost (including incentives, administrative, and marketing costs) of \$10 million
- Total Program Benefits of \$27 million to CPS Energy

Savings Potential by End-Use



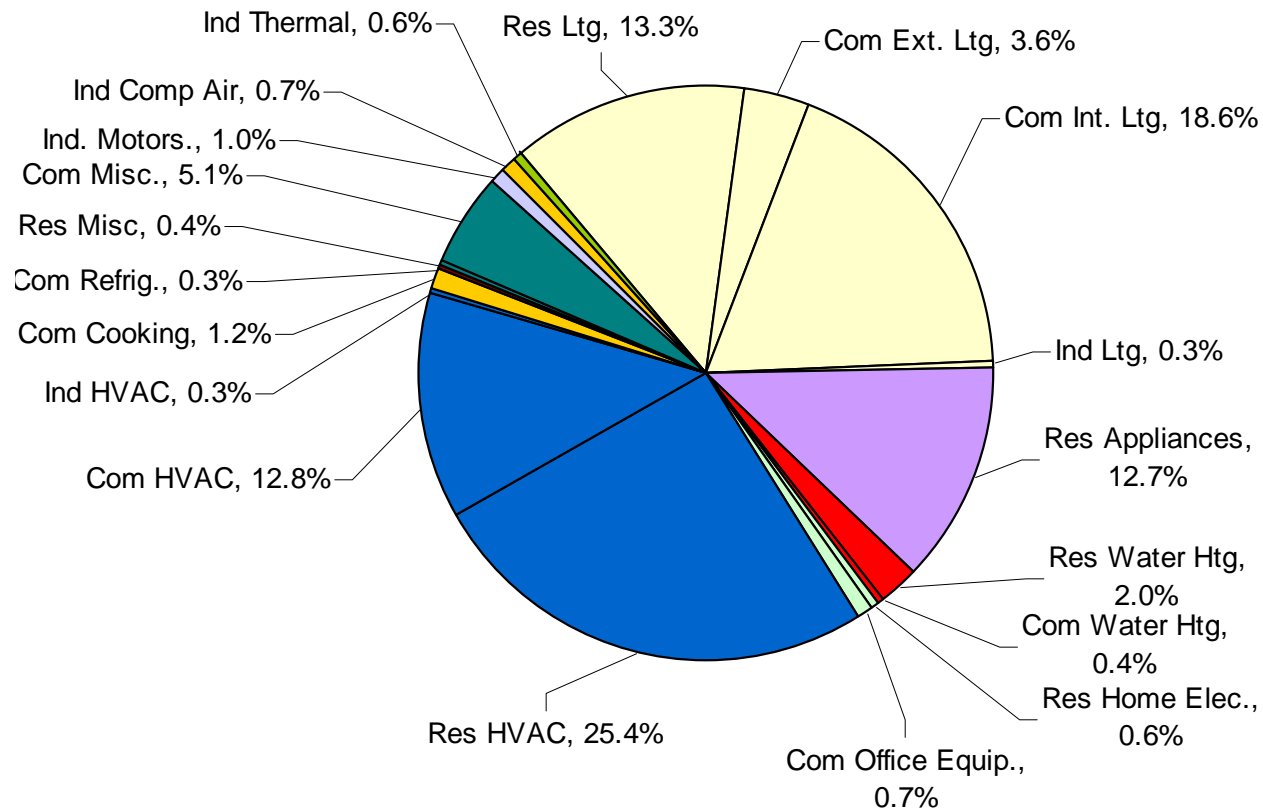
Achievable Potential Summary

Total Achievable Potential – Peak Demand Reduction



Achievable Potential Summary

Achievable Potential by End-Use



CPS Energy Forecasted Demand Growth

Forecasted Peak Demand 2008-2020

