



Considerations to inform ENERGY STAR UPS Specification

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Consortium for Energy Efficiency



- ▶ CEE brings together over 130 members serving all or part of 45 states and 8 provinces
- ▶ CEE members manage \$7.8B of a total \$9.1B efficiency budget
- ▶ Members work together on common approaches to advance energy efficiency
- ▶ CEE is a member-driven nonprofit, governed by a Board of Directors from member organizations

CEE members

New England

Berkshire Gas
Cape Light Compact
Columbia Gas of Massachusetts
Connecticut Light and Power
Connecticut Natural Gas
Efficiency Maine
Efficiency Vermont
Massachusetts Department of Energy Resources
National Grid
New England Gas Company
New Hampshire Electric Cooperative
Northeast Energy Efficiency Partnerships
NSTAR Electric & Gas
Public Service of New Hampshire
Southern Connecticut Gas
United Illuminating
Unitil
Vermont Department of Public Service
Vermont Gas Systems, Inc.
Western Massachusetts Electric Company
Yankee Gas

Middle Atlantic

Con Edison
Long Island Power Authority
New Jersey Natural Gas
New York Power Authority
NYSERDA
PECO Energy Company
PPL Electric Utilities
Public Service Electric & Gas

Midwest

AEP Ohio
Alliant Energy
Ameren Illinois Utilities
Ameren Missouri
Black Hills Energy - Iowa
CenterPoint Energy - Minnesota
Citizens Energy Group
City Utilities of Springfield - Missouri
Columbia Gas of Ohio
Commonwealth Edison
Consumers Energy
DTE Energy
Great Plains Gas
Great River Energy
Indianapolis Power and Light
Iowa Energy Center
MidAmerican Energy
Midwest Energy Efficiency Alliance
Minnesota Department of Commerce
Nebraska Public Power District
Northern Indiana Public Service Company
Omaha Public Power District
Southern Minnesota Municipal Power Agency
Vectren Corporation
We Energies
Wisconsin Focus on Energy
Xcel Energy - Minnesota

South Atlantic

Baltimore Gas & Electric
Delmarva Power
Duke Energy
Georgia Power
Gulf Power
Peoples Gas
Pepco
Piedmont Natural Gas
Progress Energy Carolinas, Inc.
Progress Energy Florida, Inc
Tampa Electric Company

South Central

Arkansas Western Gas
Atmos Energy
Austin Energy
CenterPoint Energy - Arkansas
Consumers Energy
Delta Natural Gas
LG&E and KU Energy LLC
Oncor Corporation
Tennessee Valley Authority

Pacific Northwest

AVISTA Utilities
Bonneville Power Administration
Cascade Natural Gas
Energy Trust of Oregon
Eugene Water & Electric Board
Idaho Power
Montana-Dakota Utilities
Northwest Energy Efficiency Alliance
Puget Sound Energy
Seattle City Light
Snohomish Public Utility District
Tacoma Public Utilities

Pacific West

California Energy Commission
California Institute for Energy & Environment
City of Palo Alto Utilities
Hawaii Energy Efficiency Program
Los Angeles Department of Water & Power
Northern California Power Agency
Pacific Gas and Electric Company
Sacramento Municipal Utility District
San Diego Gas & Electric
Southern California Edison
Southern California Gas

Southwest

Arizona Public Service
Black Hills Energy - Colorado
New Mexico Gas Company
NV Energy
Platte River Power Authority
PNM
Questar Gas
Rocky Mountain Power
Salt River Project
SourceGas - Colorado
Southwest Energy Efficiency Project
Southwest Gas
Tucson Electric Power Company
UniSource Energy Services
Xcel Energy

Canada

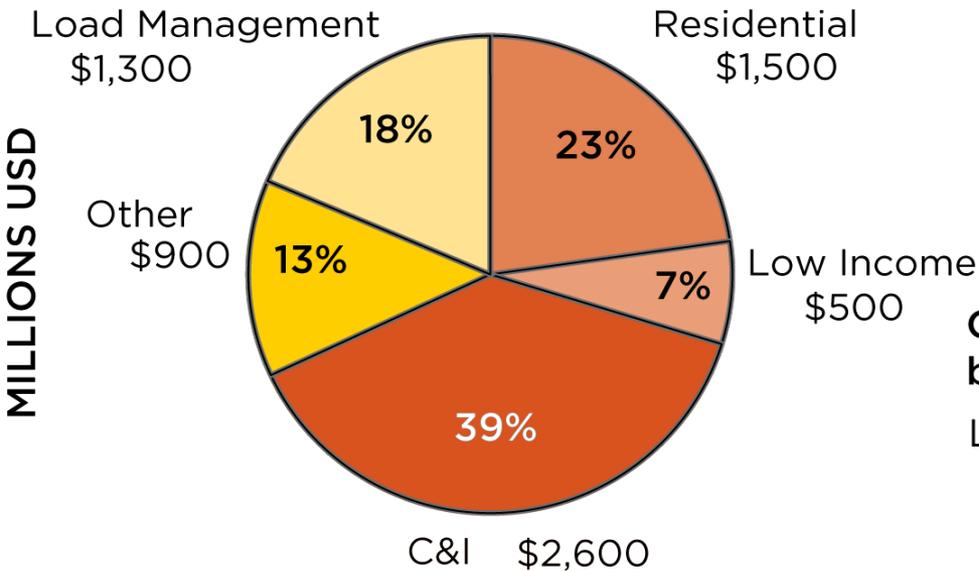
BC Hydro
Efficiency NB
Efficiency Nova Scotia
FortisBC Energy Inc.
Gaz Métro
Hydro-Québec
Natural Resources Canada
Newfoundland and Labrador Hydro
Newfoundland Power
Ontario Power Authority
SaskPower
Union Gas

National

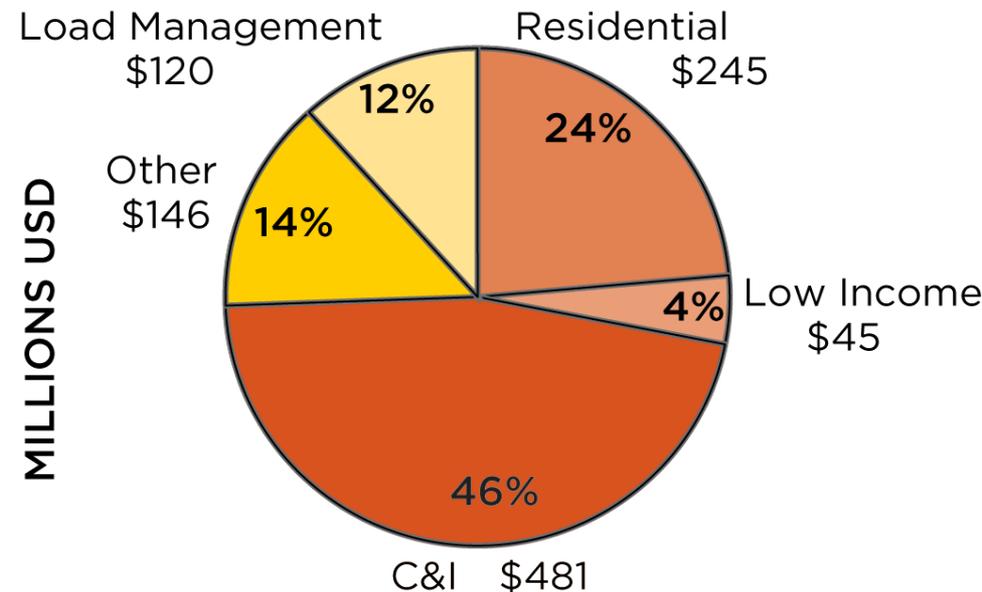
Alliance to Save Energy
American Council for an Energy-Efficient Economy
Lawrence Berkeley National Laboratory
National Renewable Energy Laboratory
Natural Resources Defense Council
New Buildings Institute
Oak Ridge National Laboratory
Pacific Northwest National Laboratory

Electric DSM Serves All Markets

US Electric Program Budgets by Customer Class
2011



Canadian Electric Program Budgets
by Customer Class 2011



Commercial Energy Efficiency Initiatives

- ▶ Commercial HVAC
- ▶ Commercial Lighting
- ▶ Commercial Kitchens
- ▶ Commercial Clothes Washers
- ▶ **Data Centers & Servers**
- ▶ Gas Water Heating
- ▶ Gas Boilers

- ▶ Develop & support **consensus-based definitions and performance specs**
- ▶ Facilitate EE program industry's collective understanding of opportunity, market players & industry motivations
- ▶ Identify recommended program strategies to help move more of the market to a preferred outcome

Considerations for ESTAR UPS Spec

- ▶ Data centers are a relatively new efficiency program “market”
- ▶ A few program administrators (<10) offer custom (case by case) incentives for data center power distribution system efficiency, including UPS
- ▶ Not aware of any CEE members offering or planning to offer mass market/prescriptive type programs in data center segments*

*CEE commercial program summary: <http://www.cee1.org/com/programsummary/index.php>

Considerations for ESTAR UPS Spec

- ▶ Identified UPS program challenges and constraints:
 - ▶ What are actual UPS (data center) operating ranges and conditions? Test procedure basis used a match for actual UPS operating conditions?
 - ▶ Cost effective opportunity? How long will it take for ESTAR product to pay back in different applications?
 - ▶ UPS meters save energy?

Summary

- ▶ Energy efficiency programs represent a 9.1B industry
- ▶ Many program administrators looking for cost effective data center efficiency opportunities
- ▶ Enhanced information basis would improve programs' ability to consider UPS focused offerings:
 - ▶ Actual UPS operating conditions and test procedures that reflect them
 - ▶ E-savings ranges achieved through more efficient UPS and where savings is greatest (applications)
 - ▶ Cost effectiveness of measures and where they are cost effective (applications)