



Regional Roundup

Craig Massey
Program Associate, Consortium for Energy Efficiency
April 4, 2017
Arlington, VA

Annual Industry Survey Overview

Published March 31,
2017

www.cee1.org/annual-industry-reports

CEE Annual Industry Report

2016 State of the Efficiency Program Industry

BUDGETS, EXPENDITURES, AND IMPACTS

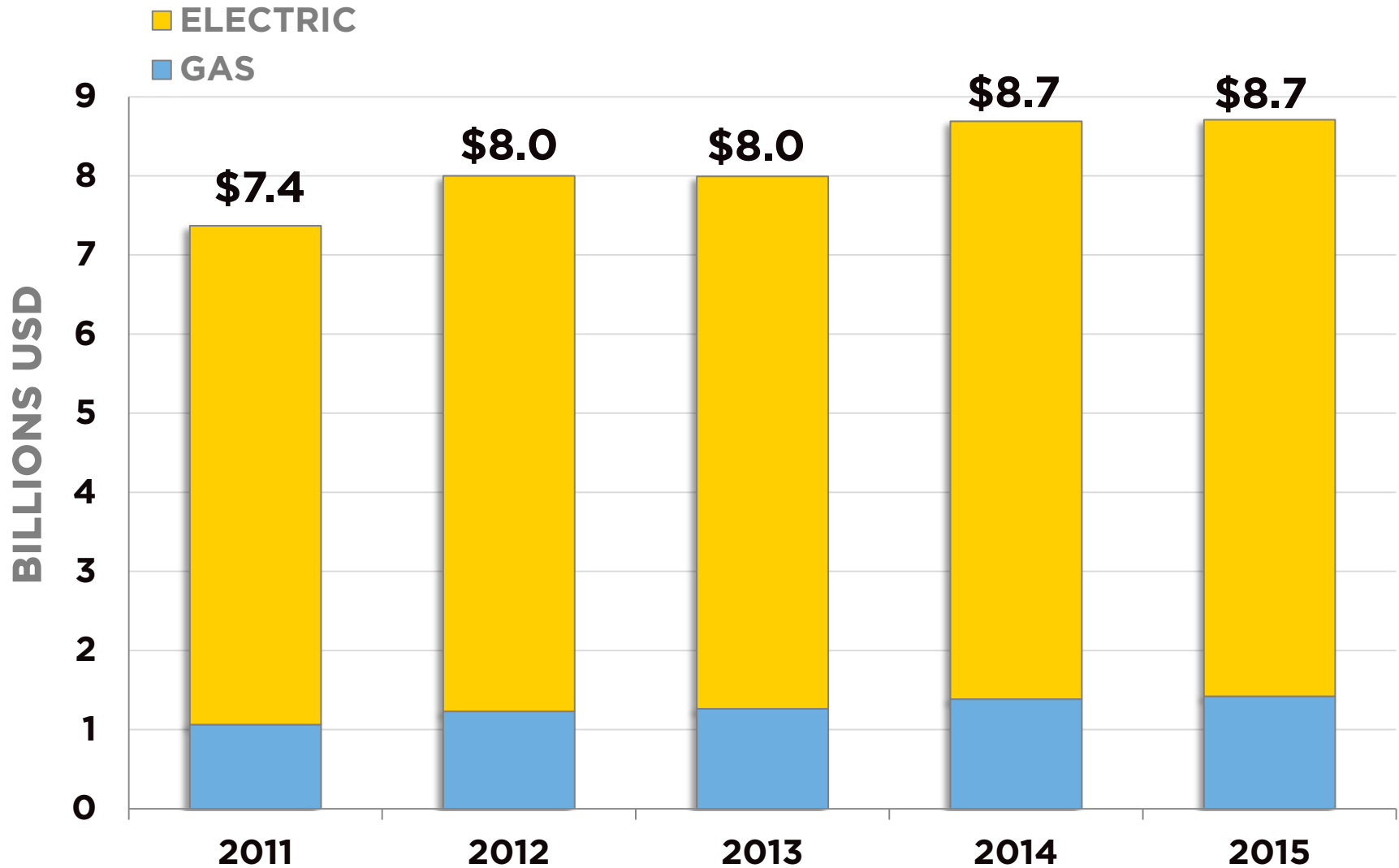


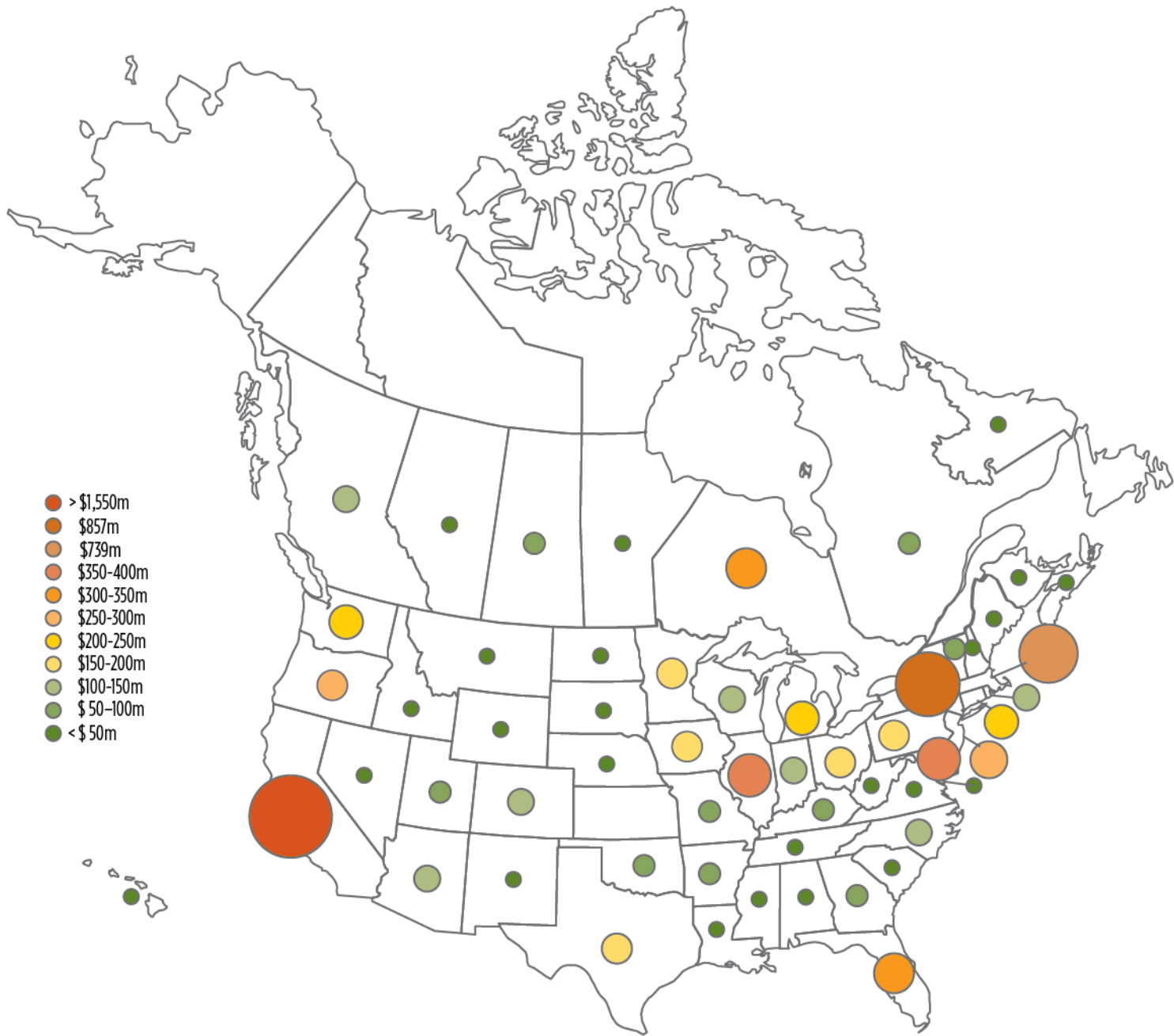
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Consortium for Energy Efficiency
98 North Washington Street, Suite 101
Boston, MA 02114

March 31, 2017

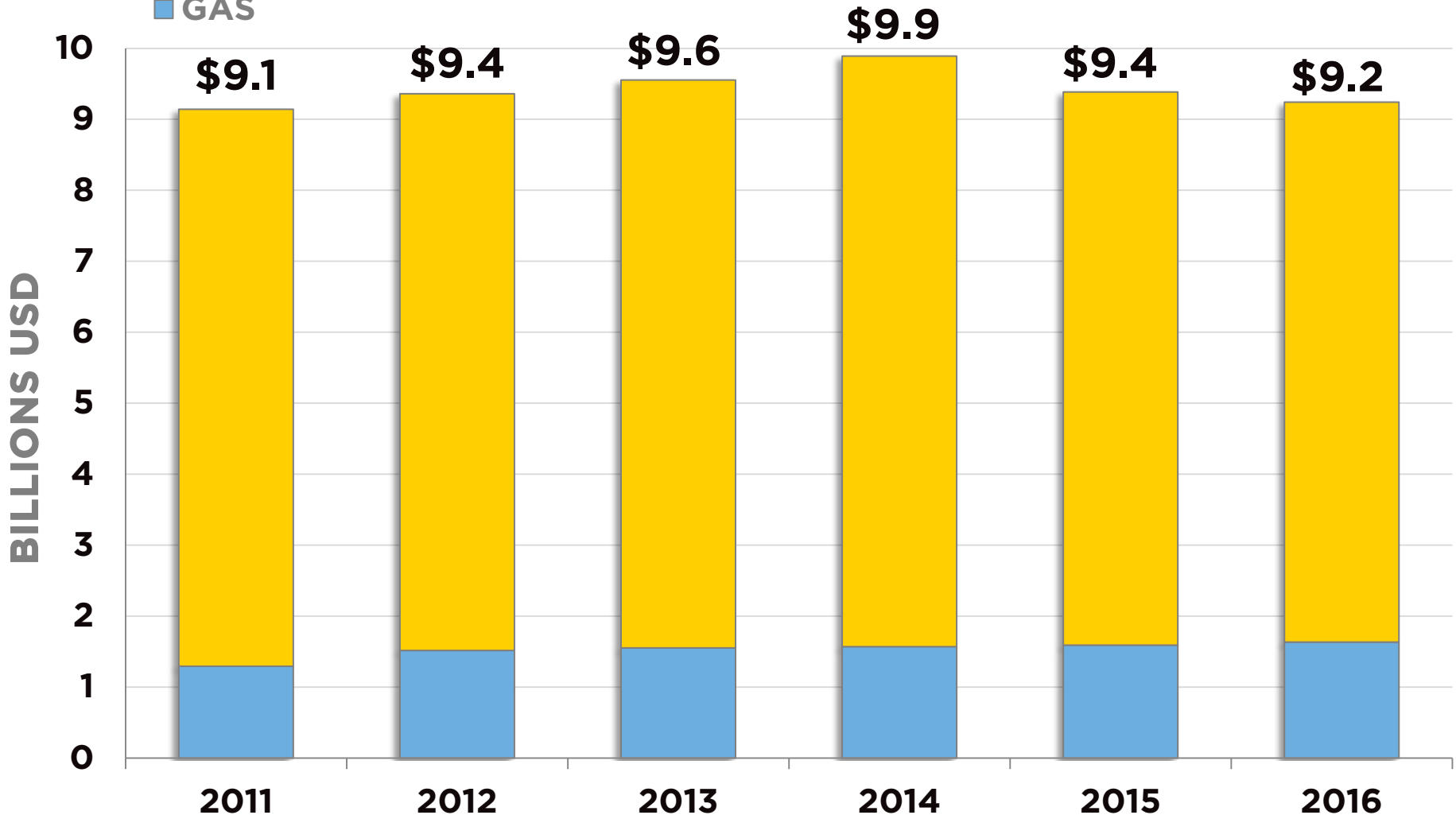
US and Canadian DSM Expenditures





US and Canadian DSM Budgets

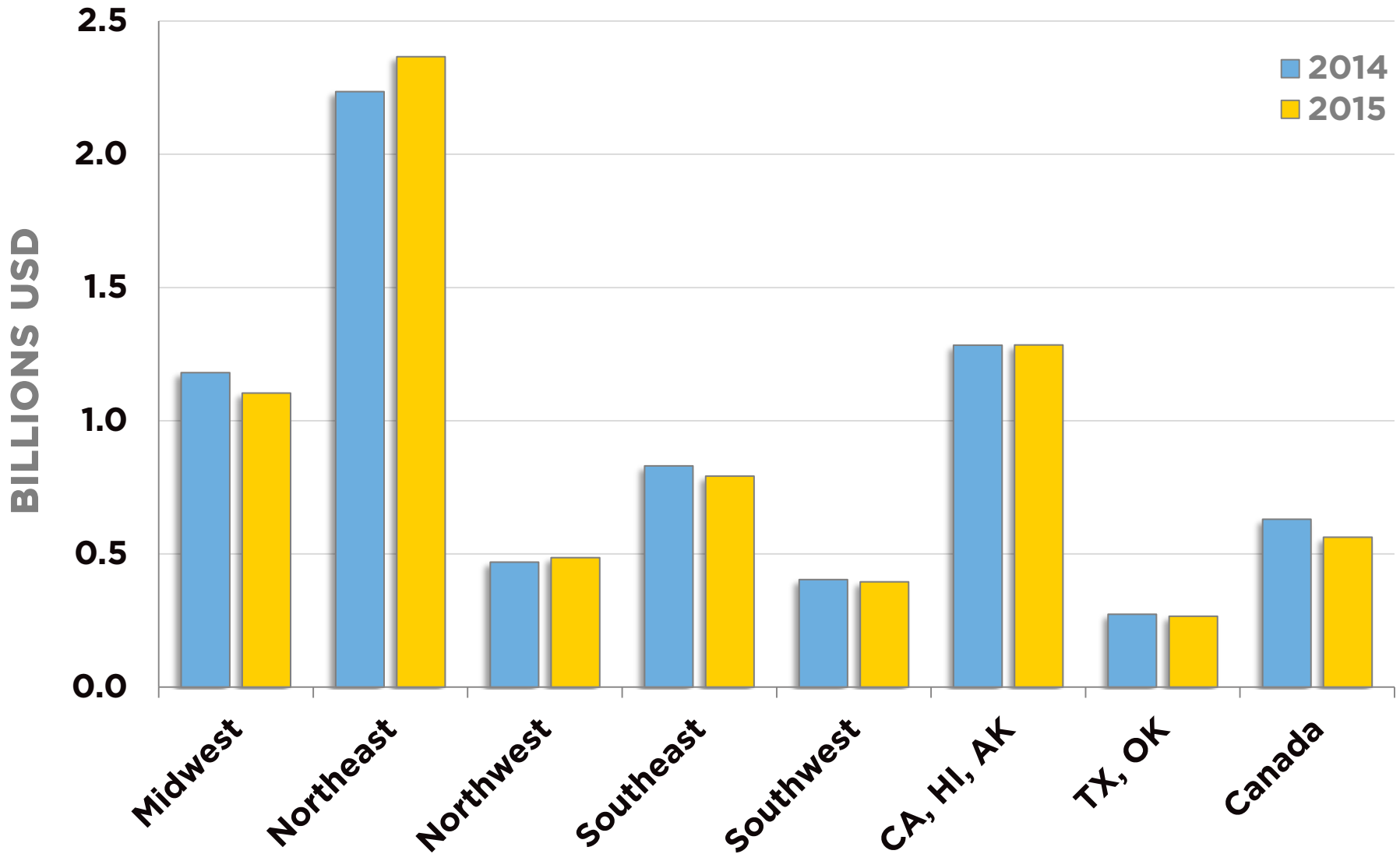
ELECTRIC
GAS



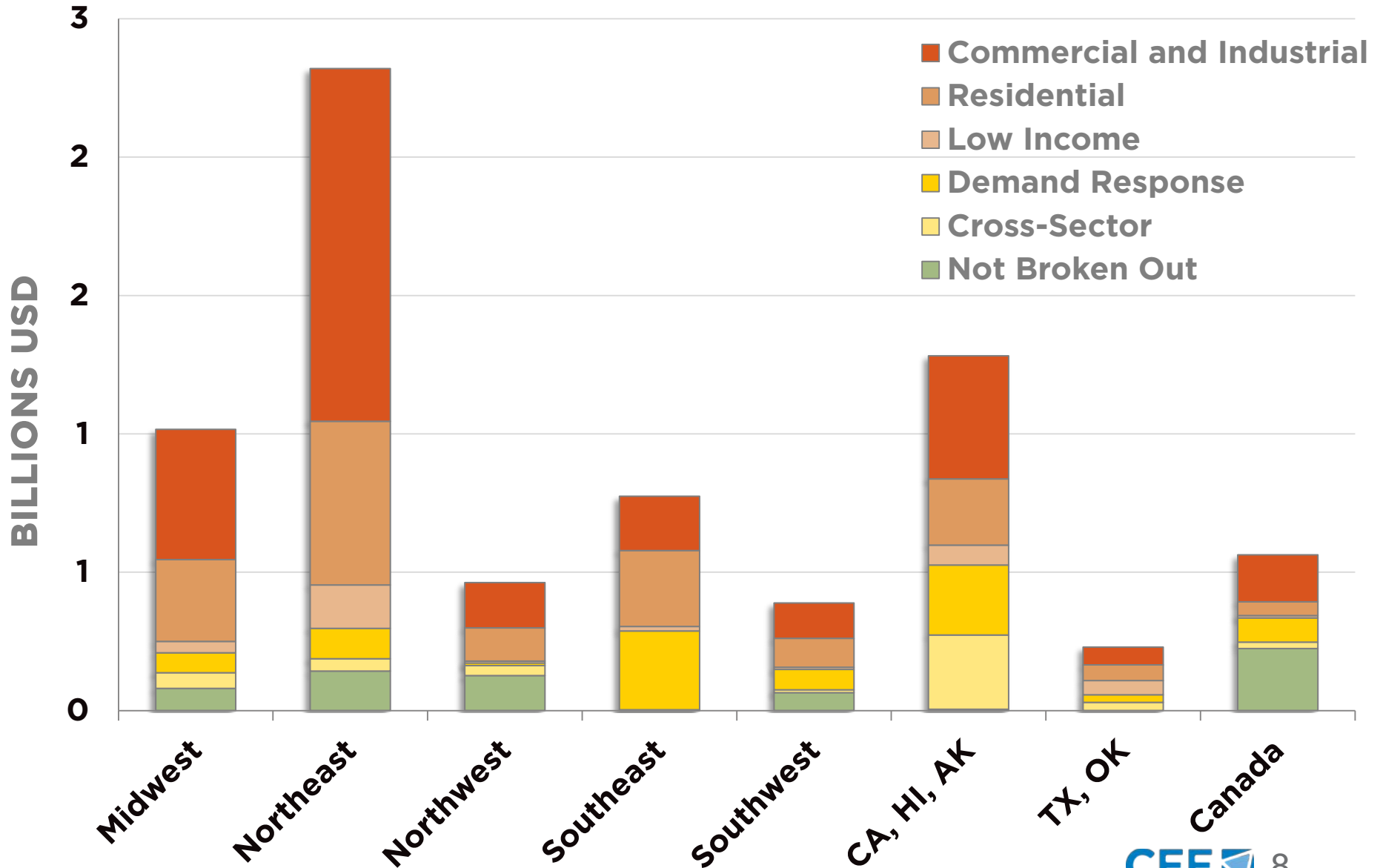
Regional Expenditures and Savings



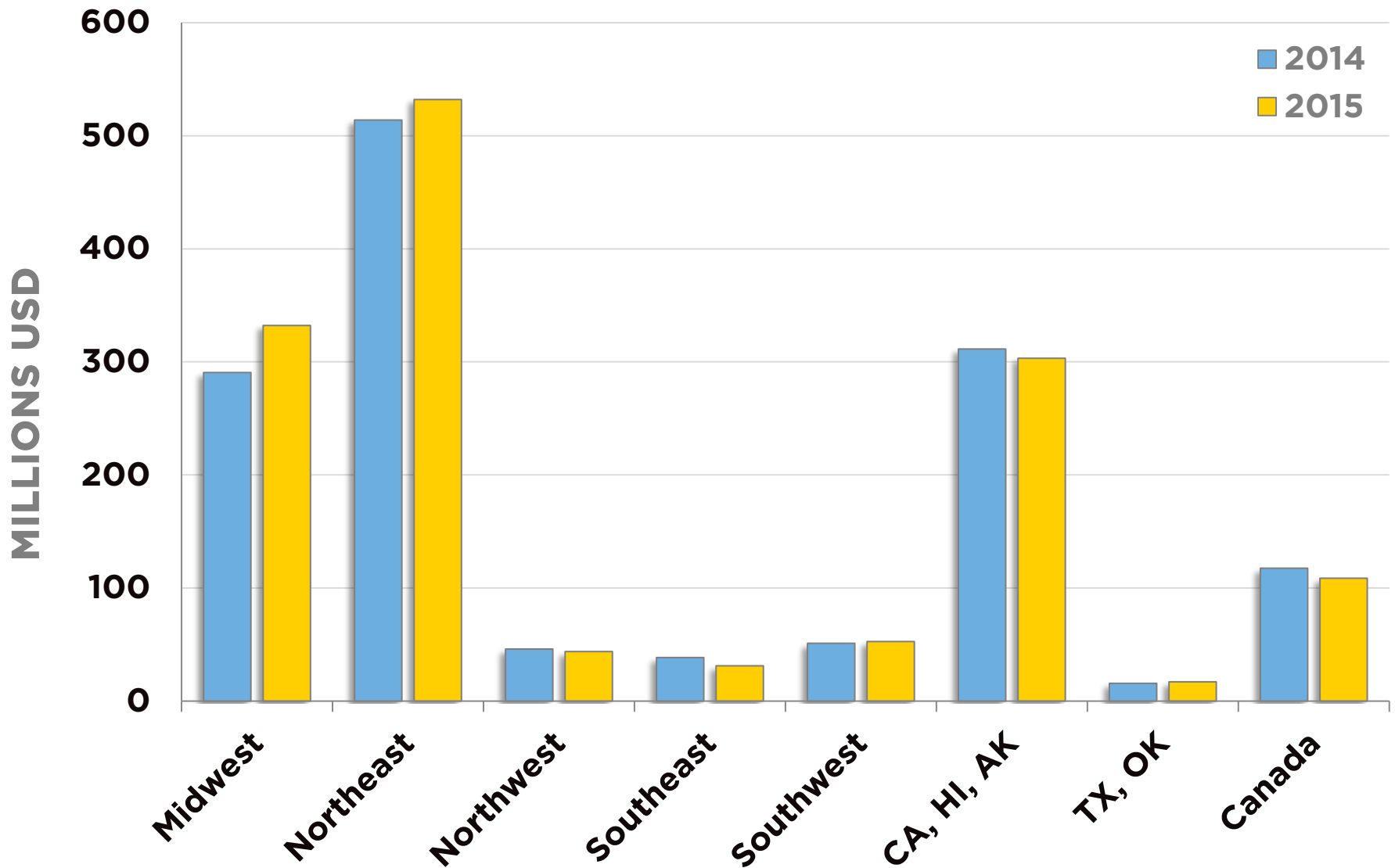
Electric DSM Expenditures



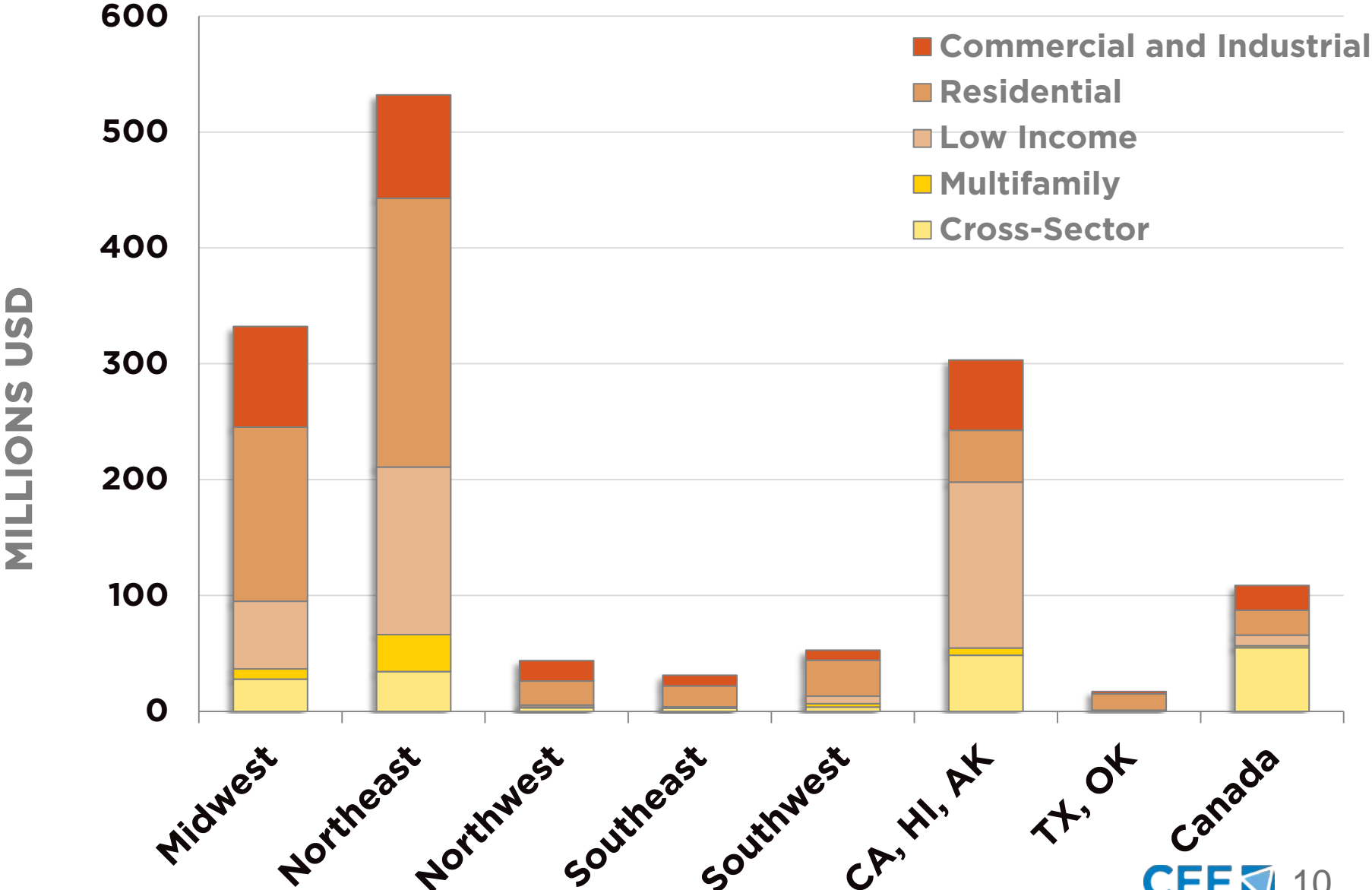
2015 Electric DSM Expenditures by Customer Class



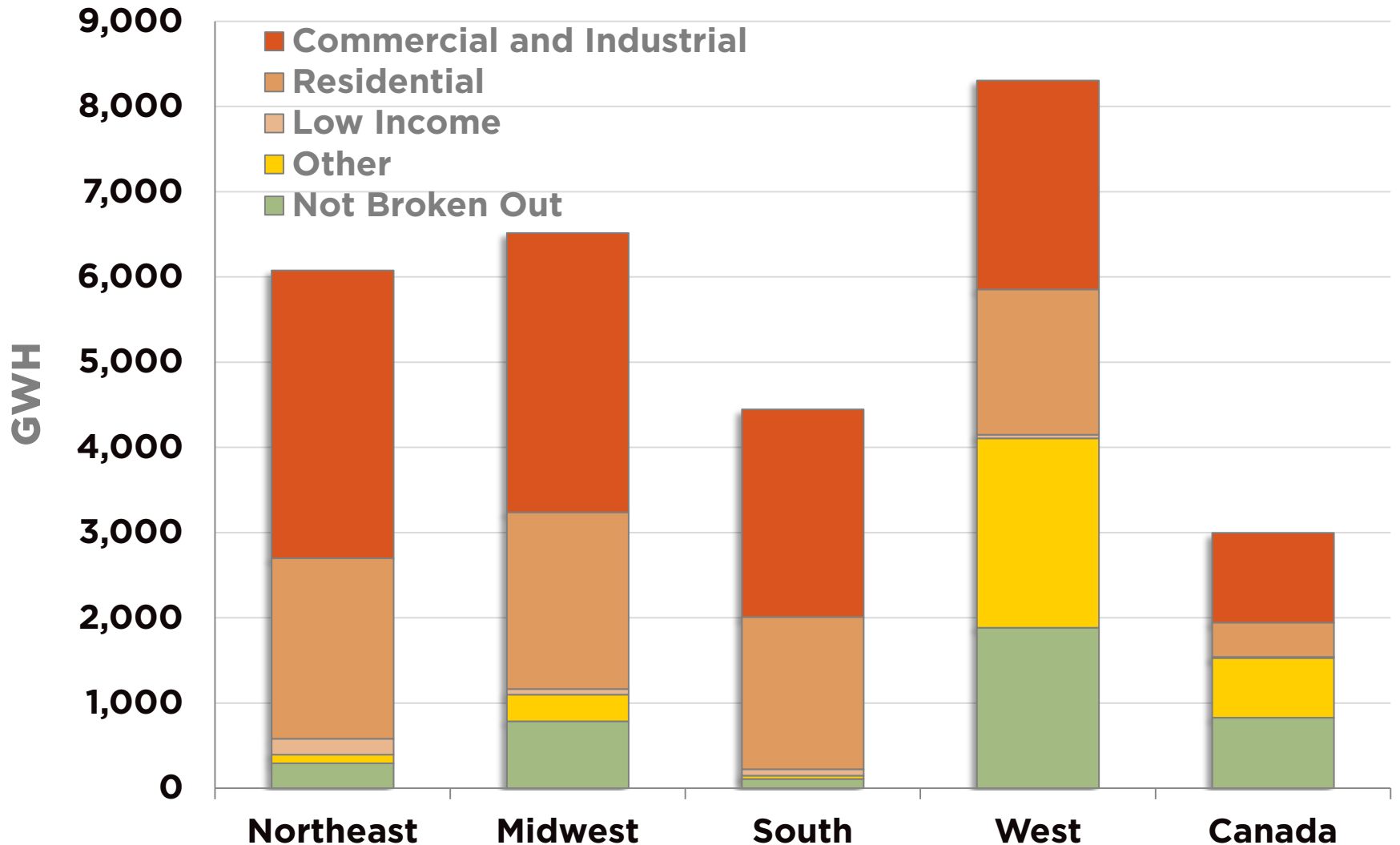
Gas Energy Efficiency Expenditures



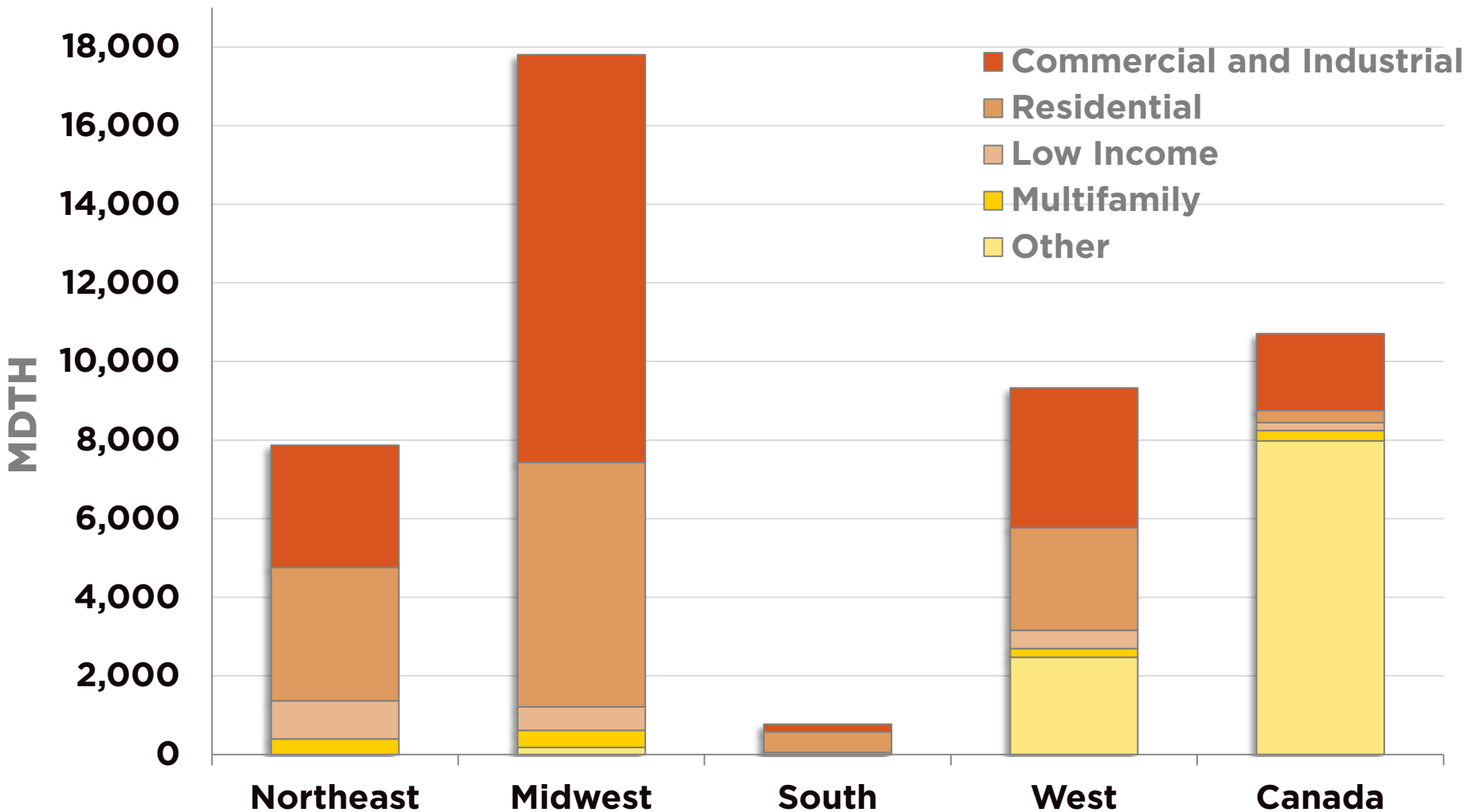
2015 Gas EE Expenditures by Customer Class



2015 Incremental Electric EE Savings by US Census Region



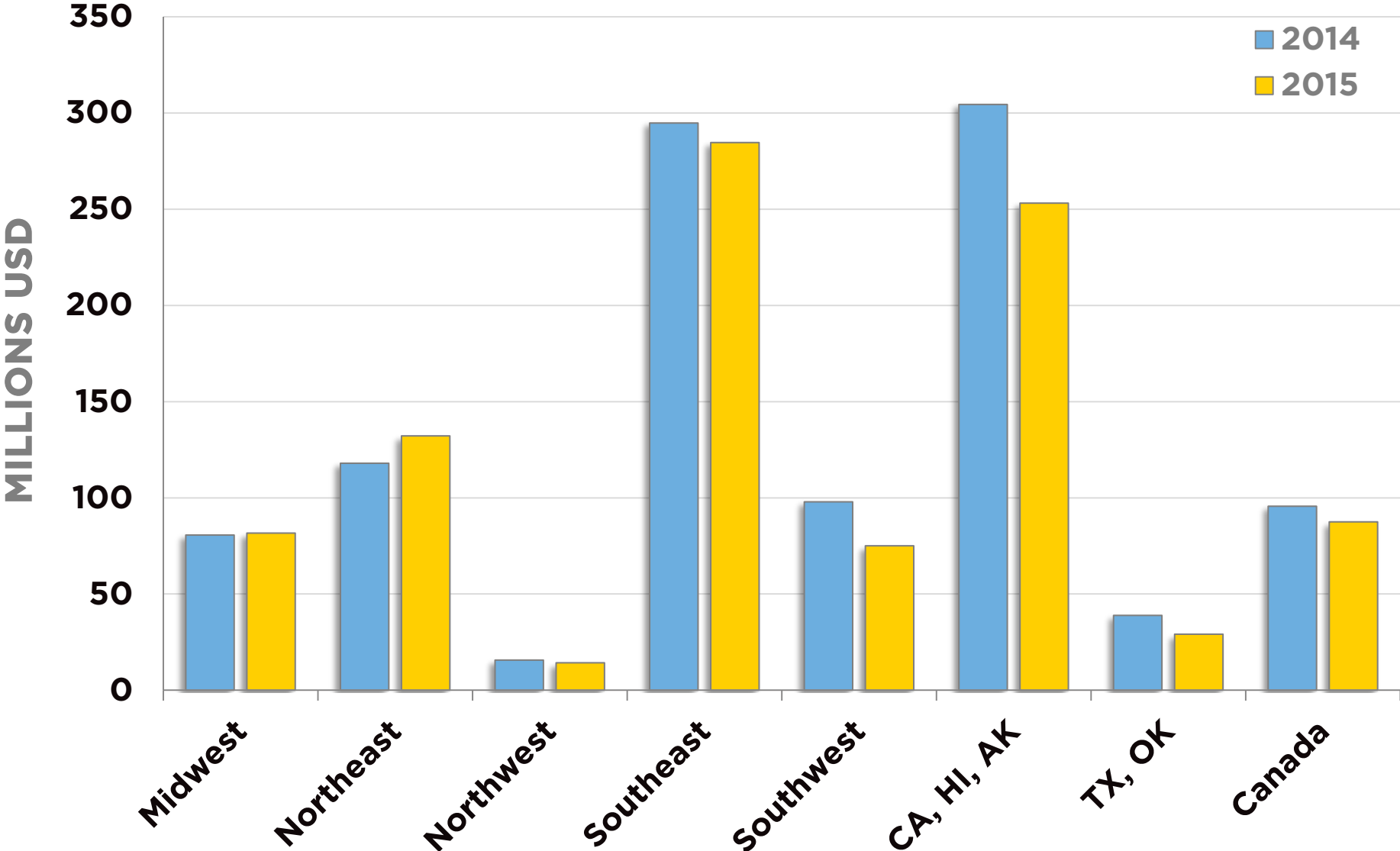
2015 Incremental Gas EE Savings by US Census Region



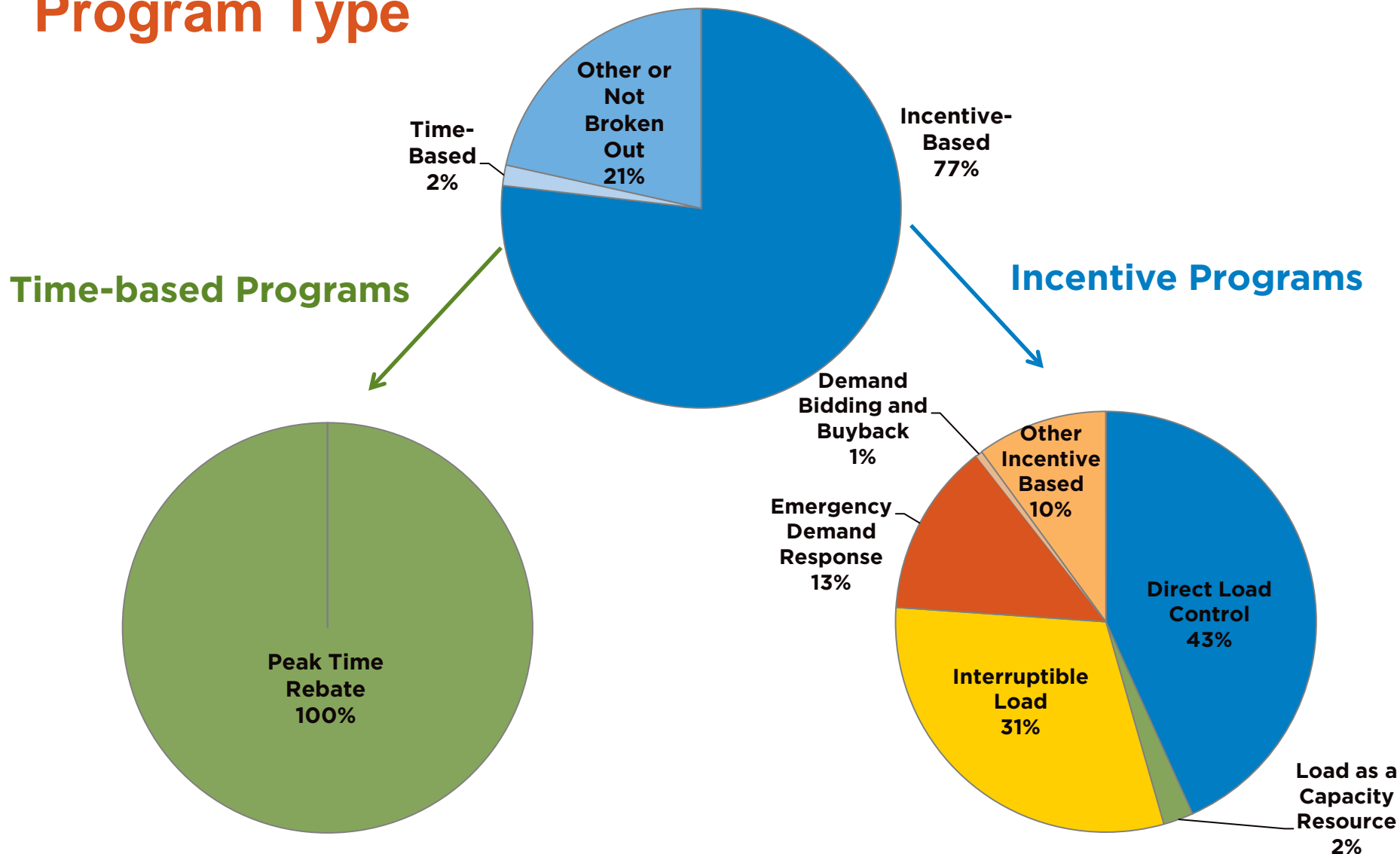
Demand Response Expenditures



Demand Response Expenditures



2015 Demand Response Expenditures by Program Type



Questions?

Craig Massey

Program Associate

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Update on Utility Energy Efficiency Policies and Programs in the Southwest

Howard Geller



Presentation for 2017 Market Transformation
Symposium
April 4, 2017

Southwest Energy Efficiency Project

- Public interest organization, founded 2001
- Advances policies and programs to stimulate greater energy efficiency in six states
- Works on utility, buildings, transportation and industrial energy efficiency issues
- Major funding provided by charitable foundations, the U.S. DOE, and business allies

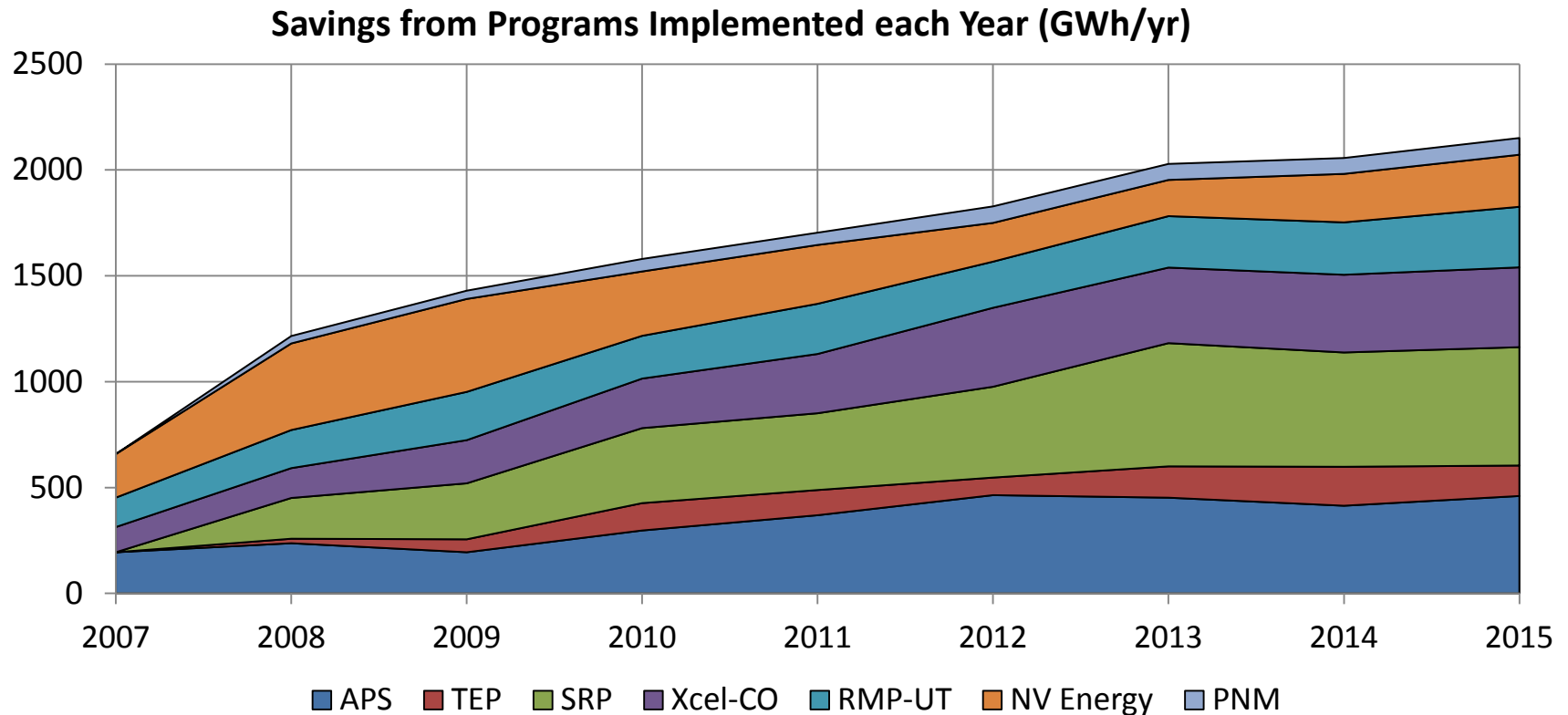


www.swenergy.org

Electric Utility DSM Program Spending Trends in the Southwest

State	Electric DSM Program Spending (million \$ per year)								
	2002	2004	2006	2008	2010	2012	2014	2016 (est.)	2017 (est.)
AZ	4	4	19	45	94	130	126	130	126
CO	11	21	18	28	66	96	96	115	121
NV	3	11	30	55	46	39	52	54	55
NM	1	1	1	10	24	28	34	40	40
UT	9	16	27	36	51	47	82	66	70
WY	~0	~0	~0	~0	3	4	5	8	9
Region	29	54	95	174	284	343	395	413	421

Energy Savings Trends – All Major Utilities in the Southwest



Key Policy Issues

- ❑ Investor-owned utilities continuing to meet or exceed EERS or energy savings goals (AZ, CO, NM)
- ❑ Some standards and goals expire in 2020, looking for opportunities to advance standards/goals post-2020
- ❑ Increased emphasis on IRP processes to drive strong utility EE program funding and energy savings goals over the long run
- ❑ Some efforts underway to improve cost effectiveness testing including more complete analysis of avoided utility costs, inclusion of non-energy benefits, and use of a social discount rate

Key Policy Issues (cont.)

- Utility business model getting greater attention
 - Potential for adoption of sales-revenue decoupling possible in some states (CO, NM)
 - In Utah, DSM program cost recovery shifted from expensing/utility bill surcharge to rate basing DSM expenditures with ROI
- Rate design work of growing importance
 - Push back on utility proposals for increased monthly fixed charges and mandatory peak demand charges
 - Support adoption of new TOU rates

Challenges and Opportunities

- ❑ Increase energy savings in spite of strengthening federal standards, more stringent building energy codes, and declining avoided costs
- ❑ Take advantage of new/emerging energy savings technologies & program strategies
- ❑ Integrate EE and DR programs
- ❑ Utilize AMI data to improve DSM programs
- ❑ Reform business model; adopt decoupling
- ❑ Revamp cost effectiveness tests to recognize full benefits of EE measures, or use the UCT or SCT
- ❑ Avoid new rate designs that reduce volumetric (kWh) charges

SWEEP:

Dedicated to More Efficient Energy Use in the Southwest

Resources available online at:

www.swenergy.org

Howard Geller, Executive Director

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April 2, 2017



2017 Regional Roundup ACEEE MT Symposium

Susan E. Stratton
Executive Director, NEEA



Northwest Energy Efficiency Alliance

Year Founded	1996
Direct Legislative/Regulatory Oversight Bodies	None
2016 Revenues (Unaudited)	
Annual Energy Efficiency Budget	\$34.1 million
Customers Served	+13 million in ID, MT, OR, and WA
Fuels	
Gas	Yes
Electricity	Yes
Major Energy Efficiency Program Related Responsibilities	
Informing Policy (various jurisdictions)	Yes
Emerging Technology Development	Yes
Program Design	Yes
Program Implementation	Yes
Program Measurement and Evaluation	Yes
Other Reporting and Program Support	Codes and Standards, Building Stock Assessments, End Use Load Shape Research. Data Analytics, Training, Tools, Resources
Demand Response Programs	Under consideration
DR integrated with EE	Under consideration

Energy efficiency acquisition in the Northwest continues apace

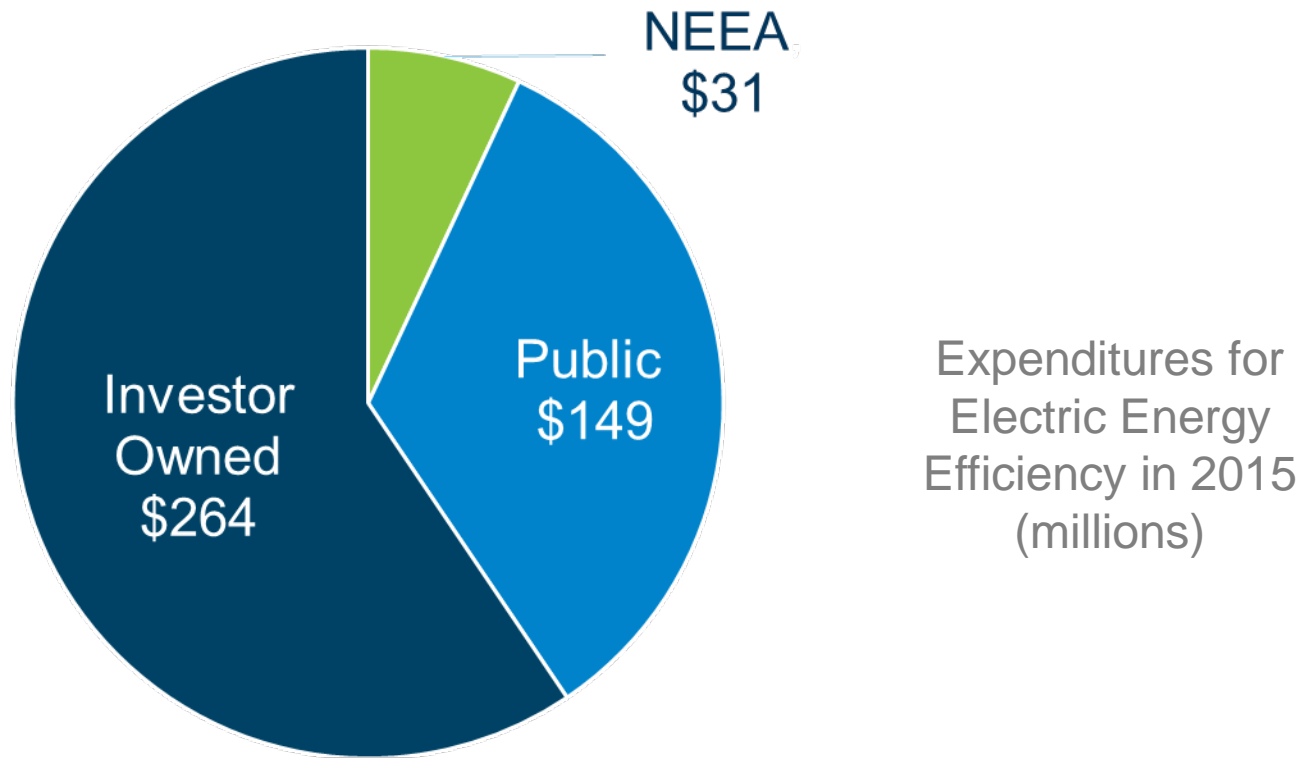


Hungry Horse Dam, MT

1,739 aMW acquired
between 2010-2015
(or 15 million MWh)

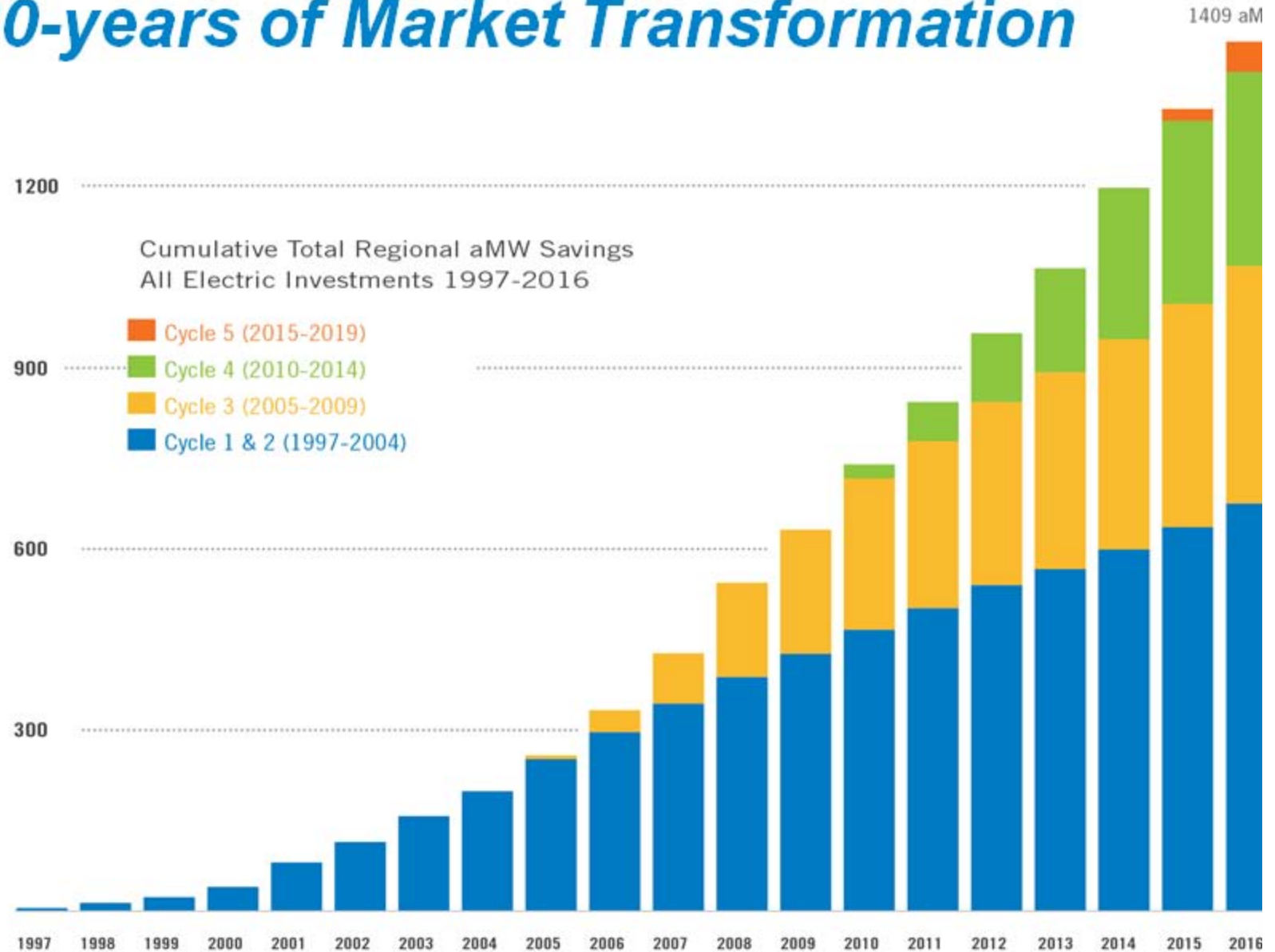
Conservation is
region's second largest
resource after
hydroelectricity

2015 Regional Electric Utility EE investment topped \$440 million



Source: Northwest Power and Conservation Council, 2017

20-years of Market Transformation



State and Regional Energy Trends

WASHINGTON



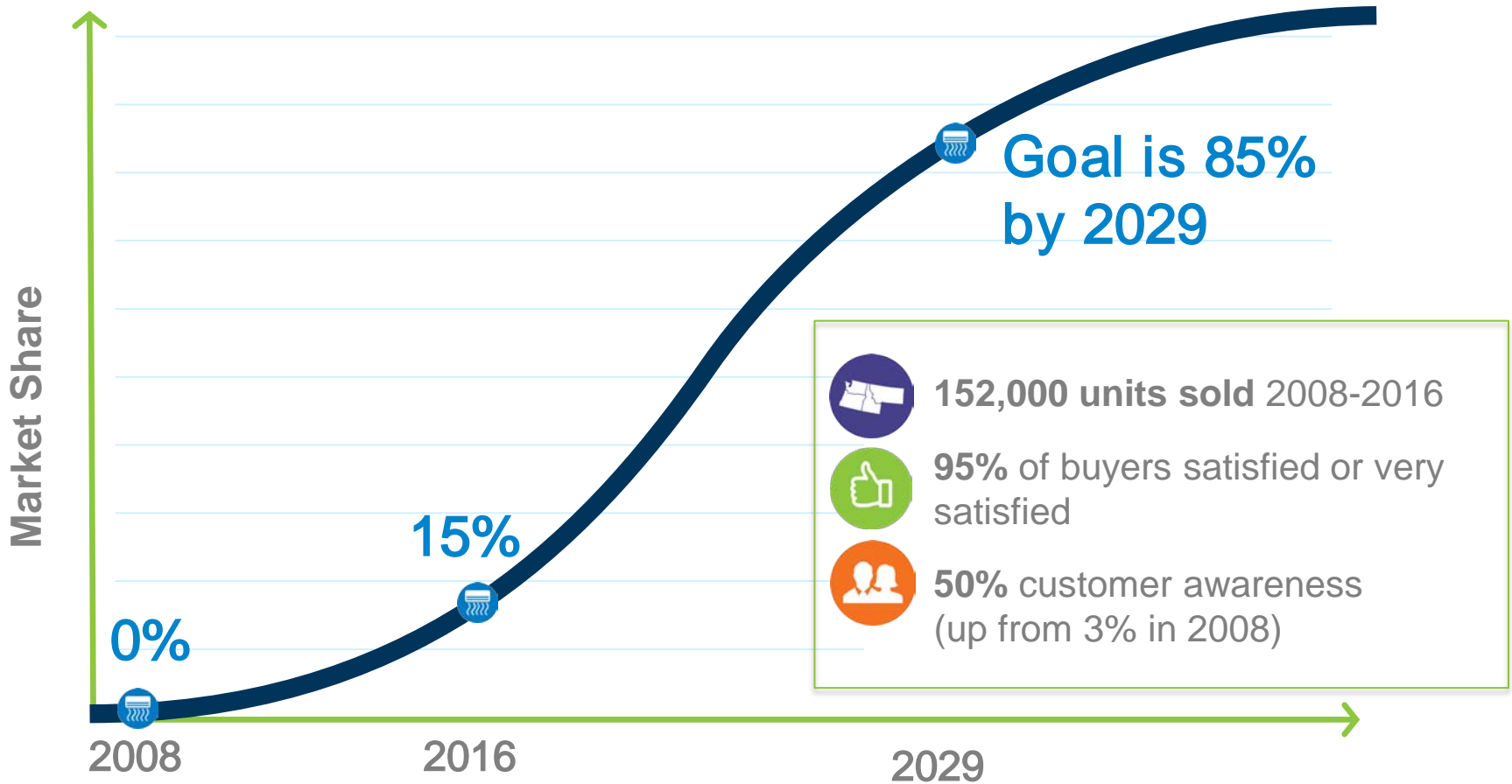
OREGON

IDAHO

MONTANA

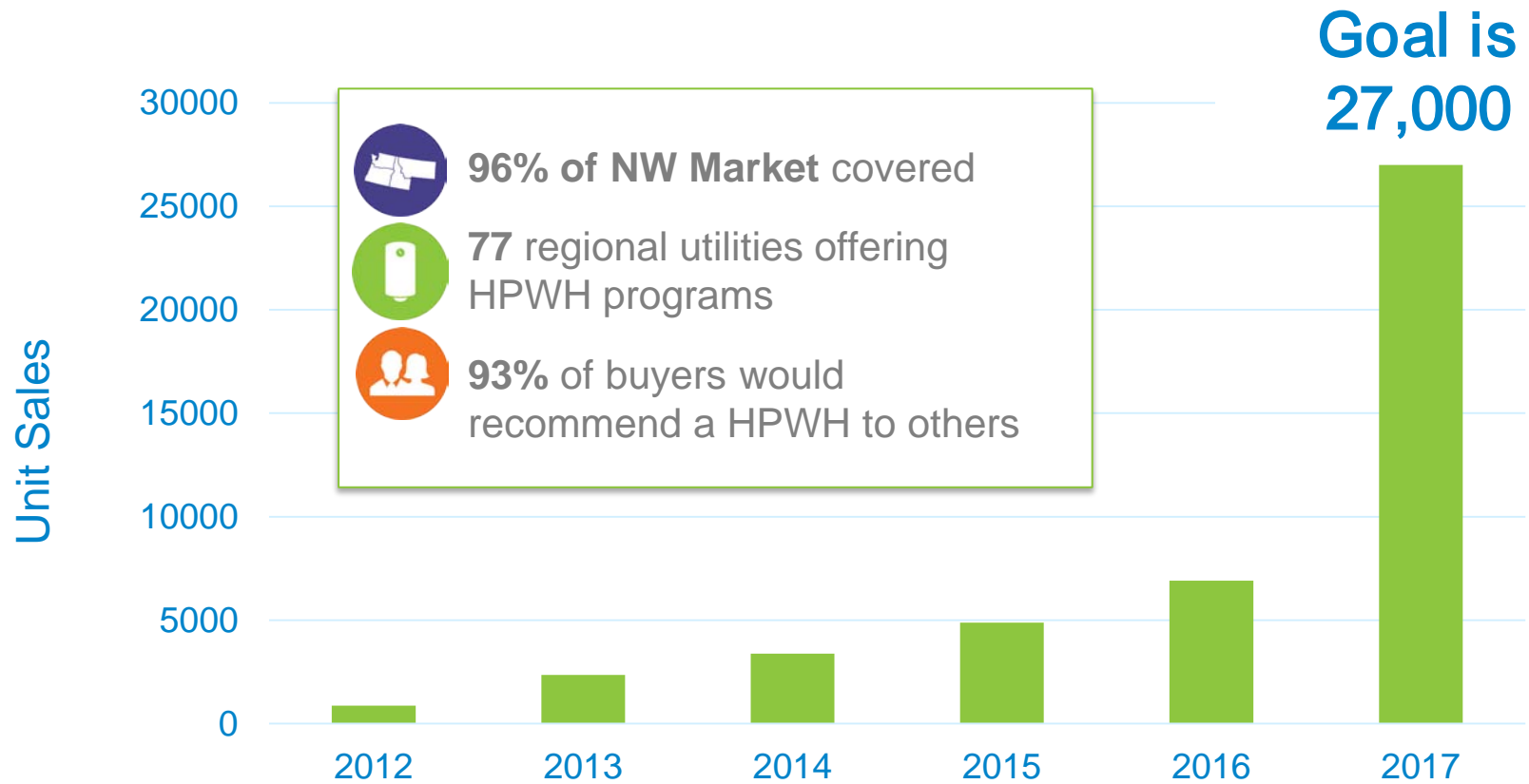


Ductless Heat Pumps





Heat Pump Water Heaters





Thank you

TOGETHER We Are Transforming the Northwest



National Symposium on Market Transformation

Regional Roundup Panel: California



A  Sempra Energy utility®

Lisa Davidson
San Diego Gas & Electric
Director – Customer Programs

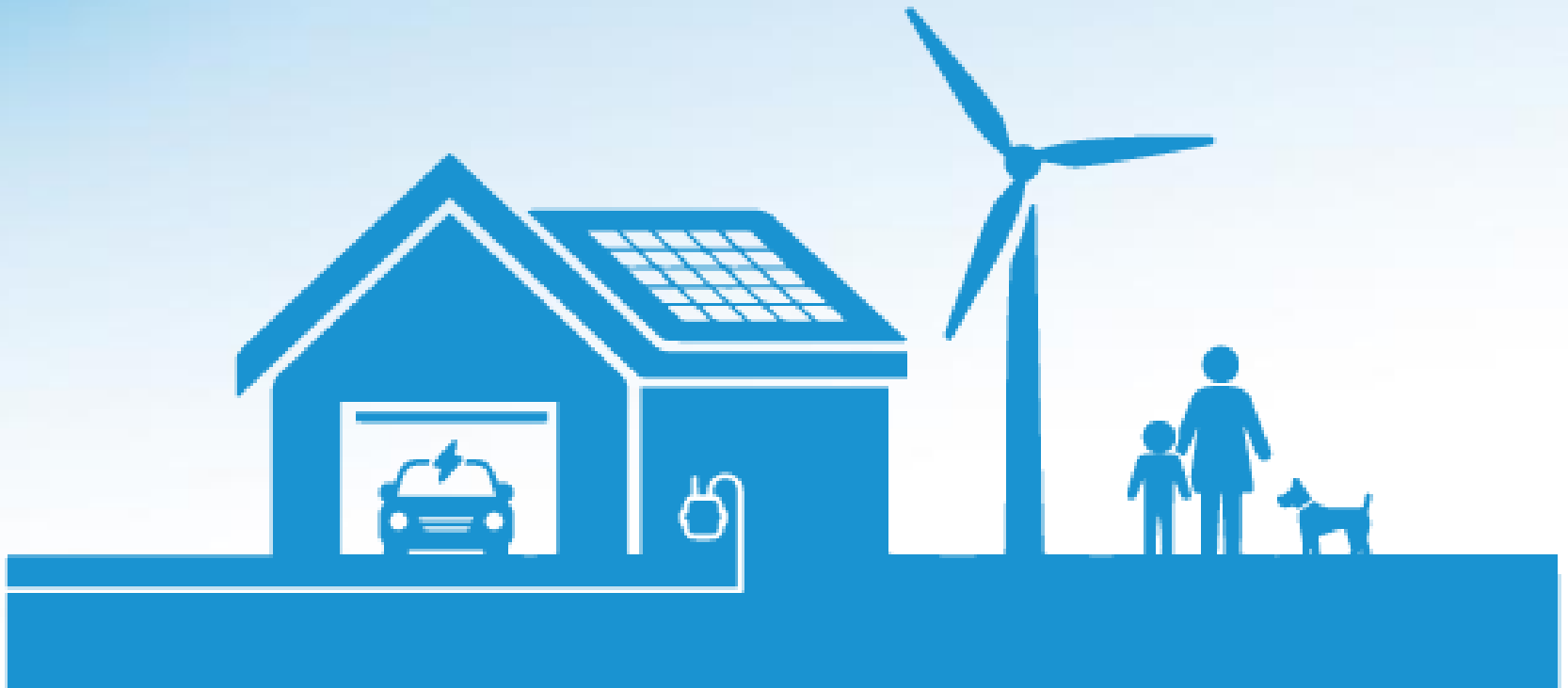
SDG&E at a Glance



Organization Name	San Diego Gas & Electric
Year Founded	1881
Direct Legislative/Regulatory Oversight Bodies	California Public Utilities Commission / FERC
2016 Revenues (Unaudited)	\$4.253 billion
Annual Energy Efficiency Budget	\$140 million (includes \$23.8 million for Energy Savings Assistance program for income-qualified customers)
Customers Served	3.6 million people through 1.4 million electric meters and 873,000 natural gas meters
Fuels	
Gas	Yes
Electricity	Yes
Major Energy Efficiency Program Related Responsibilities	
Informing Policy (various jurisdictions)	Yes
Emerging Technology Development	Yes
Program Design	Yes
Program Implementation	Yes
Program Measurement and Evaluation	No
Other Reporting and Program Support	Yes, other programs include Green Tariff Shared Renewables, Clean Transportation and Customer Assistance programs, among others
Demand Response Programs	Yes
DR integrated with EE	Yes

SDG&E's Mission

We improve lives and communities by building the **cleanest, safest and most reliable energy company in America.**



Market Transformation Policy Drivers

SB 350

Doubling of Cost-Effective Energy Efficiency by 2030

50% Renewable Portfolio Standard

Clean Transportation, Integrated Resource Planning (IRP)

AB 793

Incentives and education on energy management technology

AB 802

Building benchmarking and disclosure program; along with AB 758, promotes improving efficiency of existing buildings

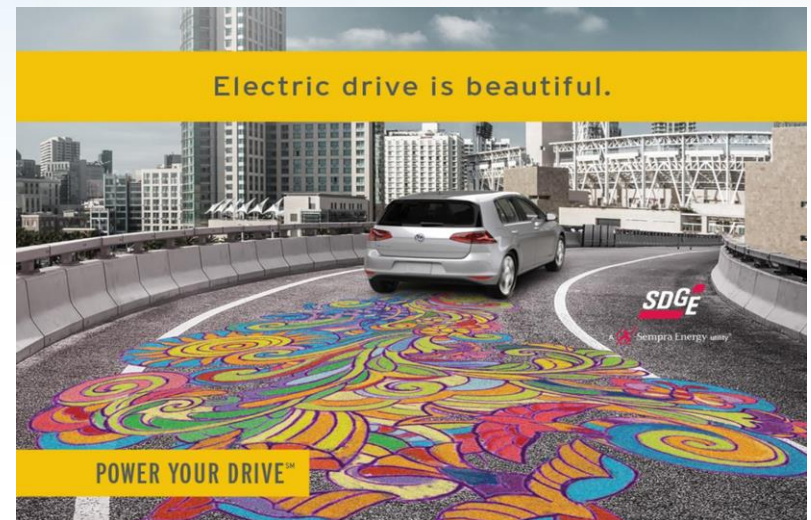
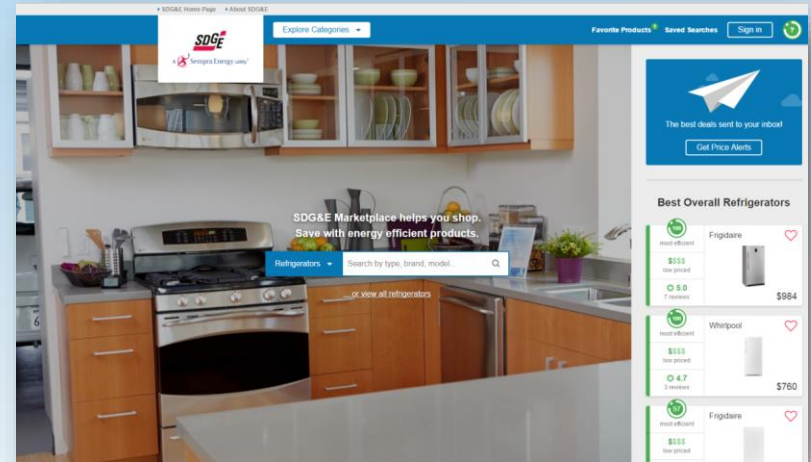
IRP Proceeding

Develop procurement planning targets to meet SB 350 goals

SDG&E Strategies and Initiatives

BUILDING A BETTER ENERGY EFFICIENT FUTURE

SDG&E's Energy Efficiency Business Plan
2018-2025 | January 2017



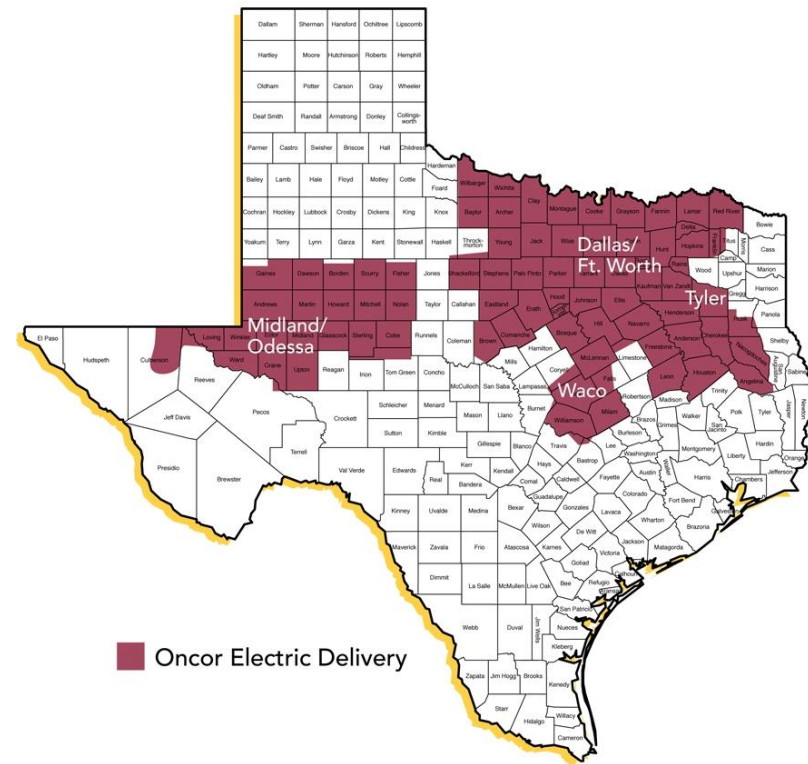
2017 National Symposium on Market Transformation

Regional Roundup - Texas

April 2017



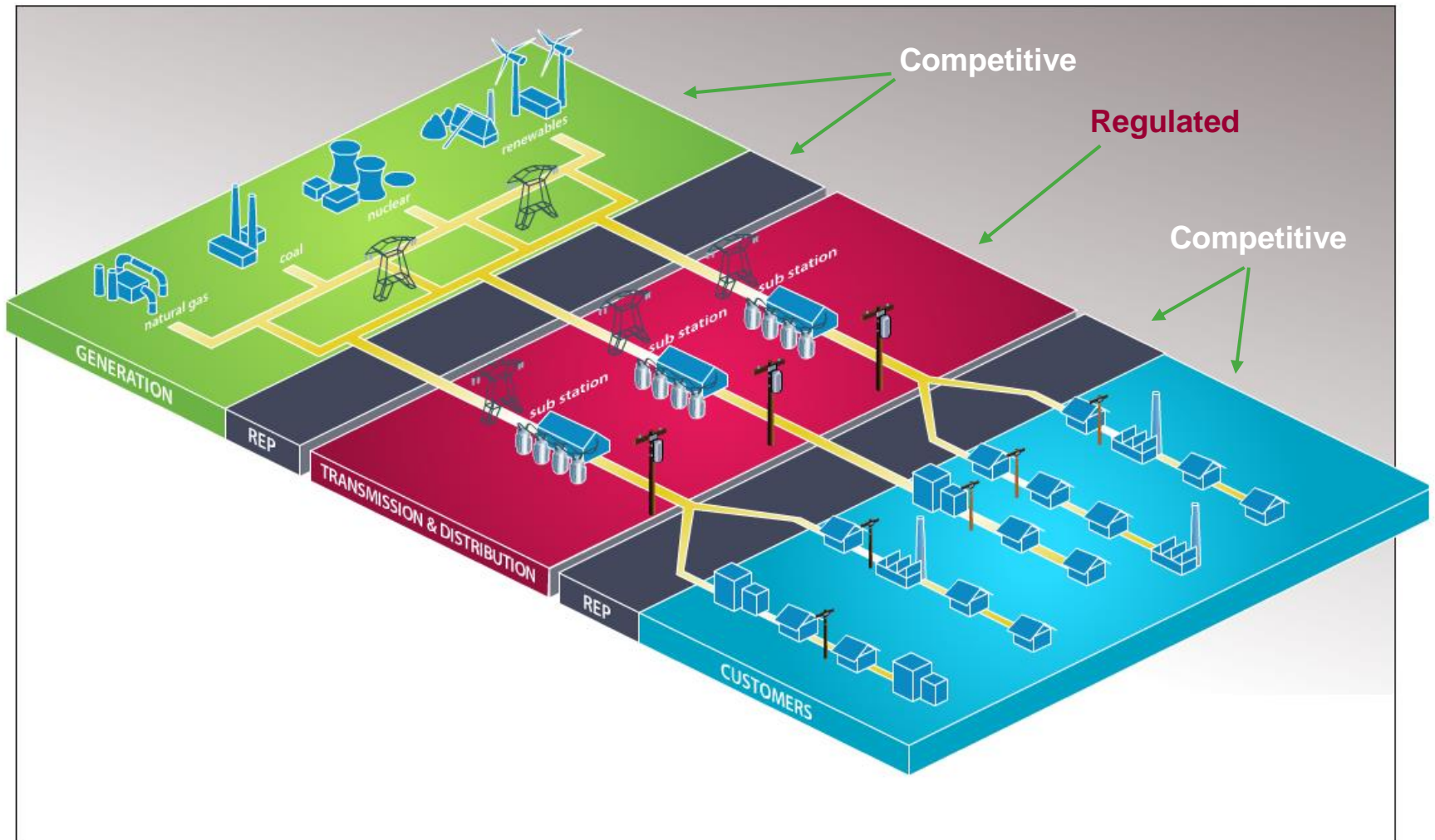
Year Founded	1912
Direct Legislative/Regulatory Oversight Bodies	Public Utility Commission of Texas (PUCT) / Texas Reliability Entity (TRE) / FERC
2016 Revenues (Unaudited)	\$ 3.8 Billion
Annual Energy Efficiency Budget (2016)	\$60,720,316 (Includes Admin, R&D, EM&V)
Customers Served	10 Million
Fuels	
Gas	No
Electricity	Yes
Major Energy Efficiency Program Related Responsibilities	
Informing Policy (various jurisdictions)	Yes
Emerging Technology Development	Yes
Program Design	Yes
Program Implementation	Yes
Program Measurement and Evaluation	Yes
Other Reporting and Program Support	Yes
Demand Response Programs	Yes
DR integrated with EE	DR/LM is part of EE portfolio



Energy Efficiency Results Since 2002:

- Spent over \$637 million
- Reduced 1,522 MW
- Saved over 3,292 GWHs

Texas Market Structure



Texas Energy Efficiency Resource Standard

- Authorized by Texas Legislature in 1999
- All Texas investor-owned utilities (not munis and Co-ops) annually meet at least 30% of their annual incremental growth in peak demand and reduce energy consumption equivalent to a 20% load factor based upon demand reduction goal.
- Programs to be administered by utilities and implemented by Energy Efficiency Services Providers and Retail Electric Providers
- Utilities can earn Performance Bonus (up to 10% of portfolio net benefits) based upon Portfolio Cost Effectiveness (Utility Cost Test)

Statewide Emerging Trends

➤ **ERCOT System Operations**

- System peak of 71,100 MW (8/11/16)
- More than a 19% reserve margin forecasted through 2021
- > 17,000 MW of operational wind generation (provided 48% of energy generated on 3/23/16)

➤ **Population and Load Growth**

- Population growth is projected to be 1.58% per year through 2026 (27.8 million in 2016)
- Demand and energy to grow approximately 1.3% and 1.8% respectively a year over next decade

Statewide Program and Policy Success

➤ 2015 Program Evaluated Results (IOU only)

- 390 MW savings
- 564,689 MWH savings
- \$121 million program spend

➤ Evaluation, Measurement and Verification

- Conducted by statewide evaluator
- 2.49 B/C ratio for all programs (PACT)
- 2015 realization rates for demand and energy savings are over 100%
- 2015 programs delivered savings for \$0.0107/kWh and \$16.47/kW

Challenges and Opportunities

- **Increase in Customers Participating in ERCOT Demand Response Programs**
 - Residential increase from 150k customers to over 720K in two years
 - Commercial increase from 30K to 50K in same period

- **Avoided cost of energy**
 - Administratively set by PUCT
 - Gas CCCT is the marginal unit
 - Cost dropped from \$0.05088 in 2016 to \$.03989 in 2017 (~27%)
 - Cost drop due to price of natural gas and increase in wind power production



2017 National Symposium on Market Transformation

Regional Round-Up
April 4, 2017



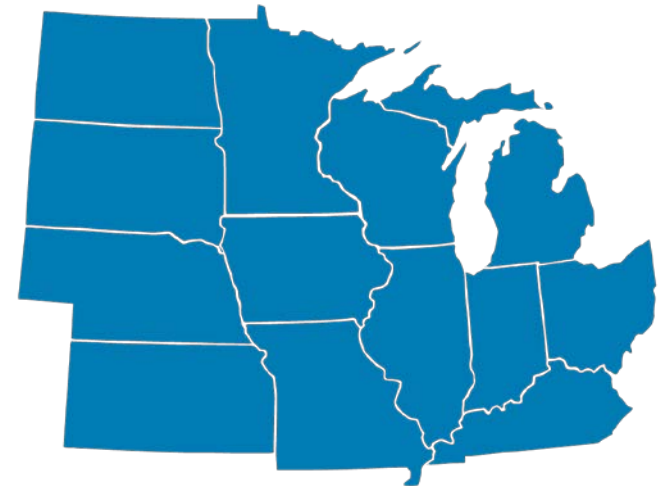
About MEEA

The Trusted Source on Energy Efficiency

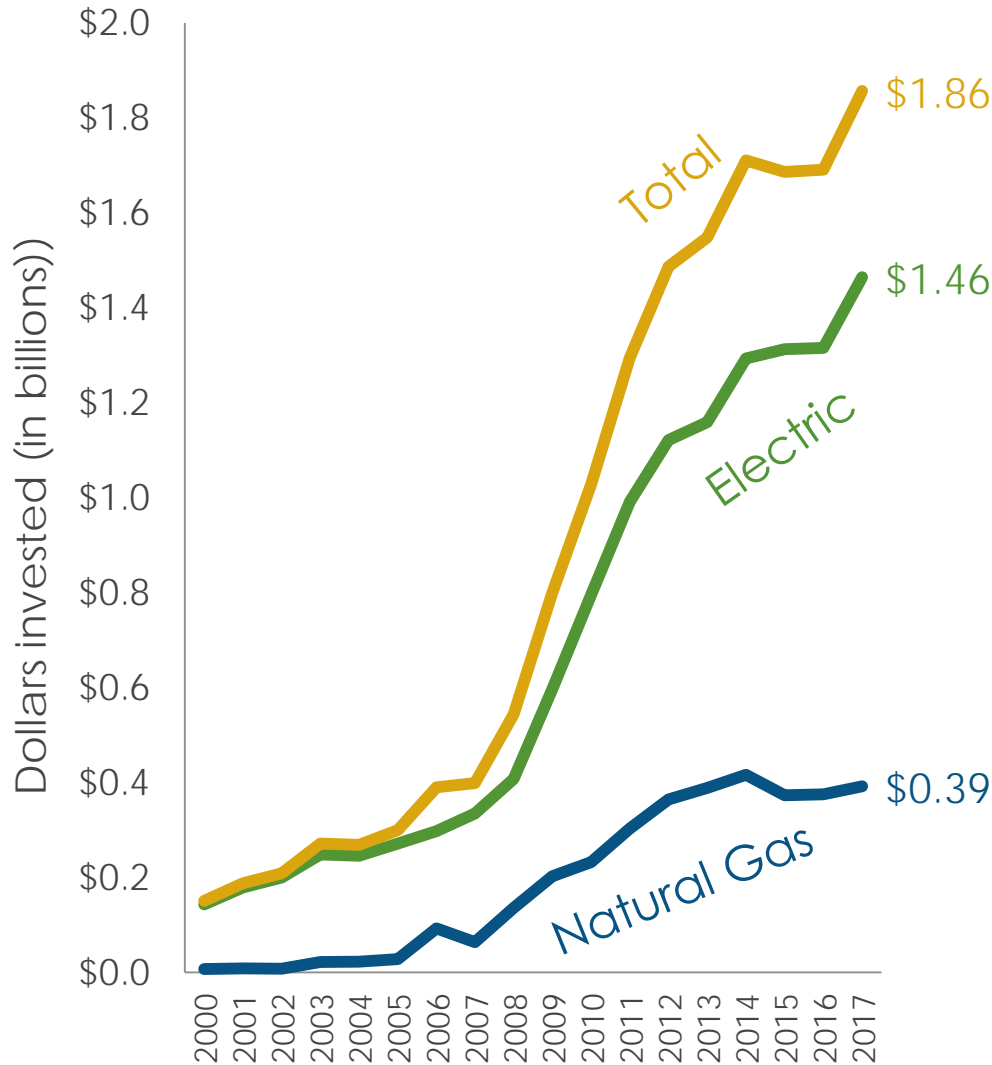
We are a nonprofit membership organization with **160+ members**, including:

- Utilities
- Research institutions and manufacturers
- State and local governments
- Energy efficiency-related businesses

As the key resource and champion for energy efficiency in the Midwest, MEEA helps a diverse range of stakeholders understand and implement cost-effective energy efficiency strategies that provide economic and environmental benefits.



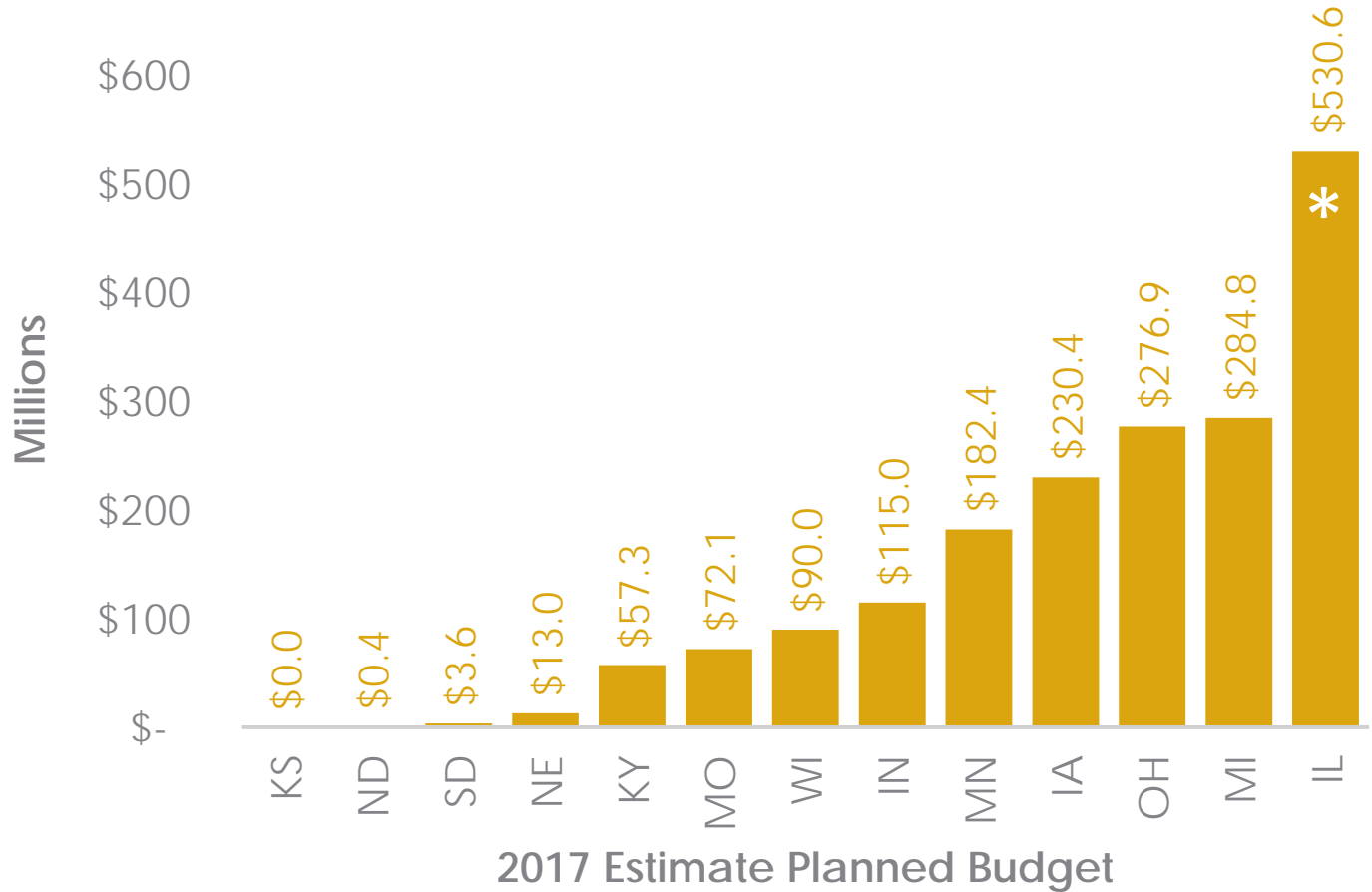
Energy Efficiency Investment & Policies in the Midwest



1983	MN	Pilot legislation
1990	IA	Initial legislation
1991	MN	CIP requirement adopted
1996	IA	Legislation updated
1999	WI	Public Benefit Fund adopted (electric & gas)
2007	IL	EERS legislation adopted (electric)
2007	MN	EERS legislation adopted (electric & gas)
2008	MI	EERS legislation adopted (electric & gas)
2008	OH	EERS legislation adopted (electric)
2008	IA	EE mandated by Executive Order (electric & gas)
2009	IL	EERS legislation adopted (gas)
2009	IN	EERS implemented by regulatory order
2009	MO	Voluntary EE standard legislation adopted (electric)
2010	WI	EERS implemented by regulatory order
2011	WI	EERS adjusted by legislation
2014	IN	EERS overturned by legislation
2014	OH	EERS 'frozen' by legislation
2016	IL	EERS Updated by legislation
2016	MI	EERS amended, PSC authority increased
2016	OH	EERS freeze extension vetoed, EERS restored

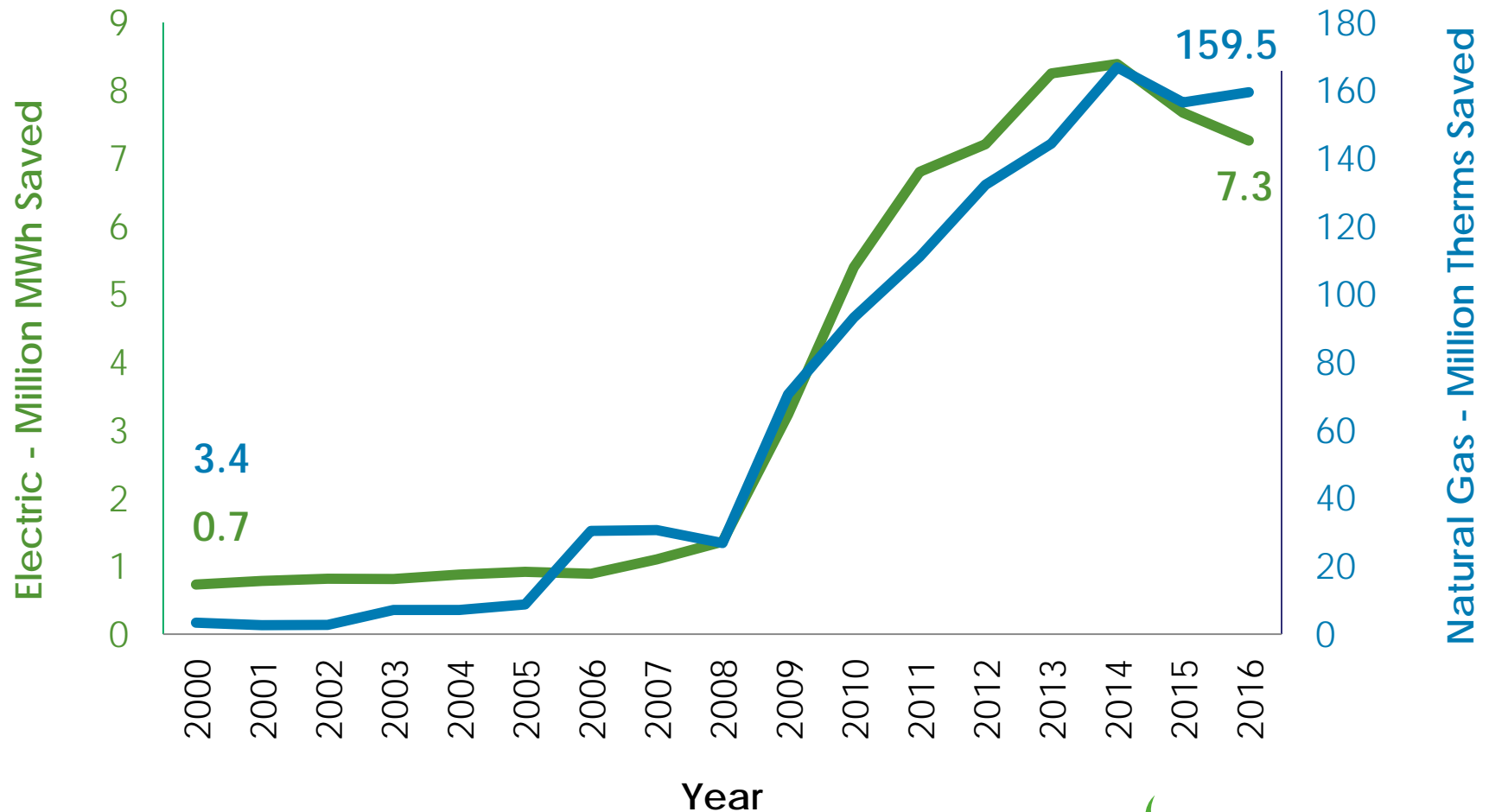
Statewide Energy Efficiency Budget

Total Electricity & Natural Gas



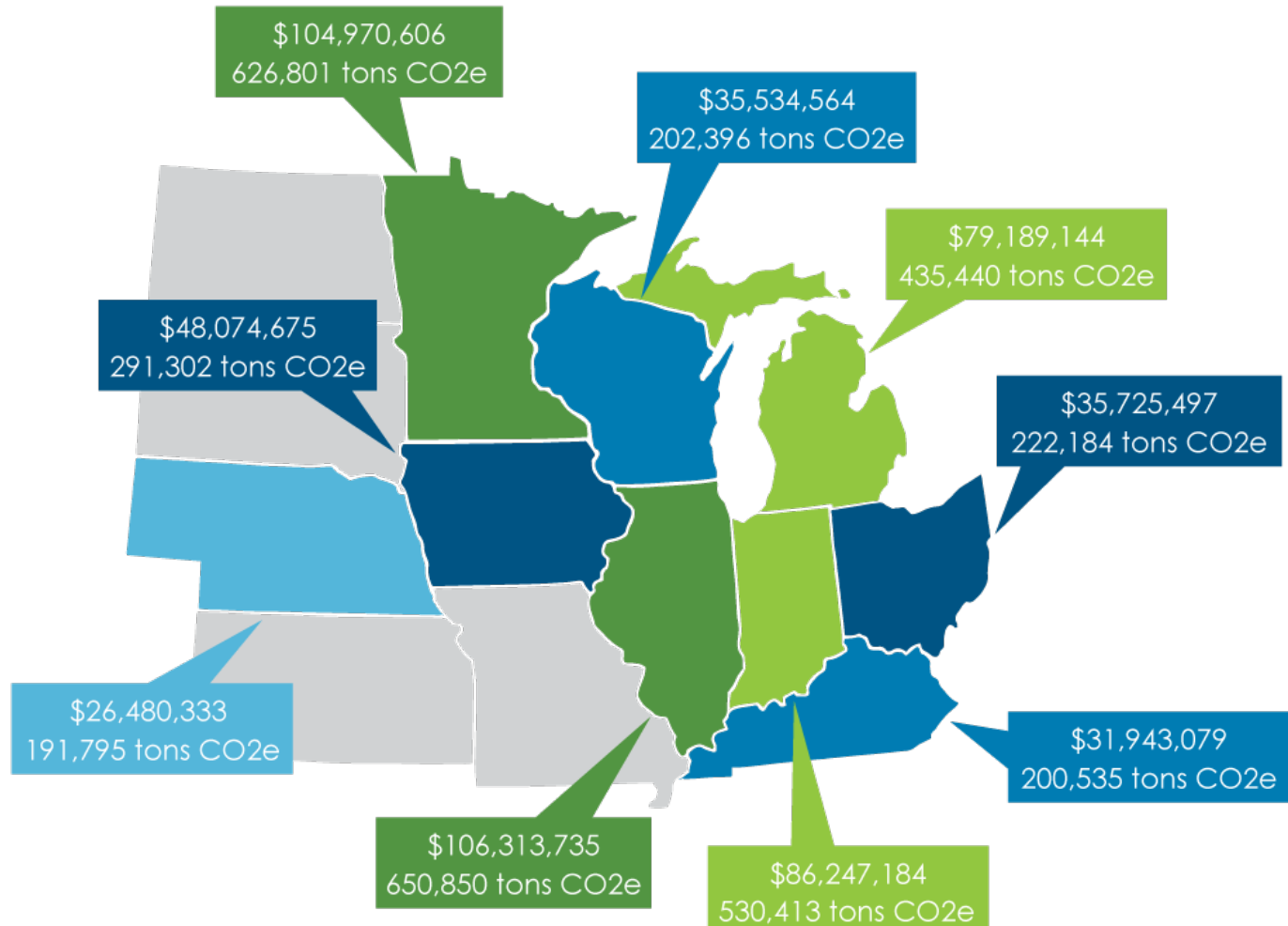
*Includes interim period as program year shifts to calendar year starting 2018

Midwest **Energy** Savings through Utility Energy Efficiency



Building Energy Code Impacts in the Midwest

Cumulative Savings 2009-2016



Midwest Trends

Opportunities and Challenges

- Clean Energy Policy victories in 2016
 - Illinois, Michigan and Ohio
 - Republican Govs are the champions
 - Careful of advocates trading EE for renewables
- Illinois
 - Removal of rate cap, utilities to assume all program administration
 - Industrial exemption
- Michigan
 - Maintenance of current EE targets, establishment of IRP valuing EE
- Ohio
 - Kasich veto in December, could veto again
 - Increased industrial opt out proposed
- Indiana
 - Utility plans and IRPs include EE, but at half level of EERS
- Kentucky
 - PSC reviewing DSM program costs. Questioning EE

Questions

Thank you!

*Stacey Paradis, Executive Director
Midwest Energy Efficiency Alliance
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NEEP Regional Roundup of Energy Efficiency

MT Regional Roundup Symposium 2017

Samantha Caputo
SCaputo@neep.org
April 4, 2017

Northeast Energy Efficiency Partnerships



Year Founded	1996
Direct Legislative/Regulatory Oversight Bodies	Independent non-profit regional energy efficiency organization serving the Northeast and Mid-Atlantic region stakeholders with support from state, federal, foundation and industry sources.
2016 Revenues (Unaudited)	\$11 million
Annual Energy Efficiency Budget	\$11 million
Customers Served	Northeast and Mid-Atlantic
Fuels	
Gas	Yes
Electricity	Yes
Major Energy Efficiency Program Related Responsibilities	
Informing Policy (various jurisdictions)	Yes
Emerging Technology Development	Yes
Program Design	Yes
Program Implementation	Yes
Program Measurement and Evaluation	Yes
Other Reporting and Program Support	(list activities not included above, if applicable): <ul style="list-style-type: none"> • Training and Education • Research and Analysis • Market Transformation Strategy Development & Tracking
Demand Response Programs	Yes
DR integrated with EE	Yes

Northeast Energy Efficiency Partnerships



“Assisting the Northeast & Mid-Atlantic Region in Reducing Total Carbon Emissions 80% by 2050”

Mission

Accelerate energy efficiency as an essential part of demand-side solutions that enable a sustainable regional energy system

Vision

That the region embraces next generation energy efficiency as a core strategy to meet energy needs in a carbon-constrained world

Approach

Overcome barriers and transform markets through *Collaboration, Education, and Enterprise*

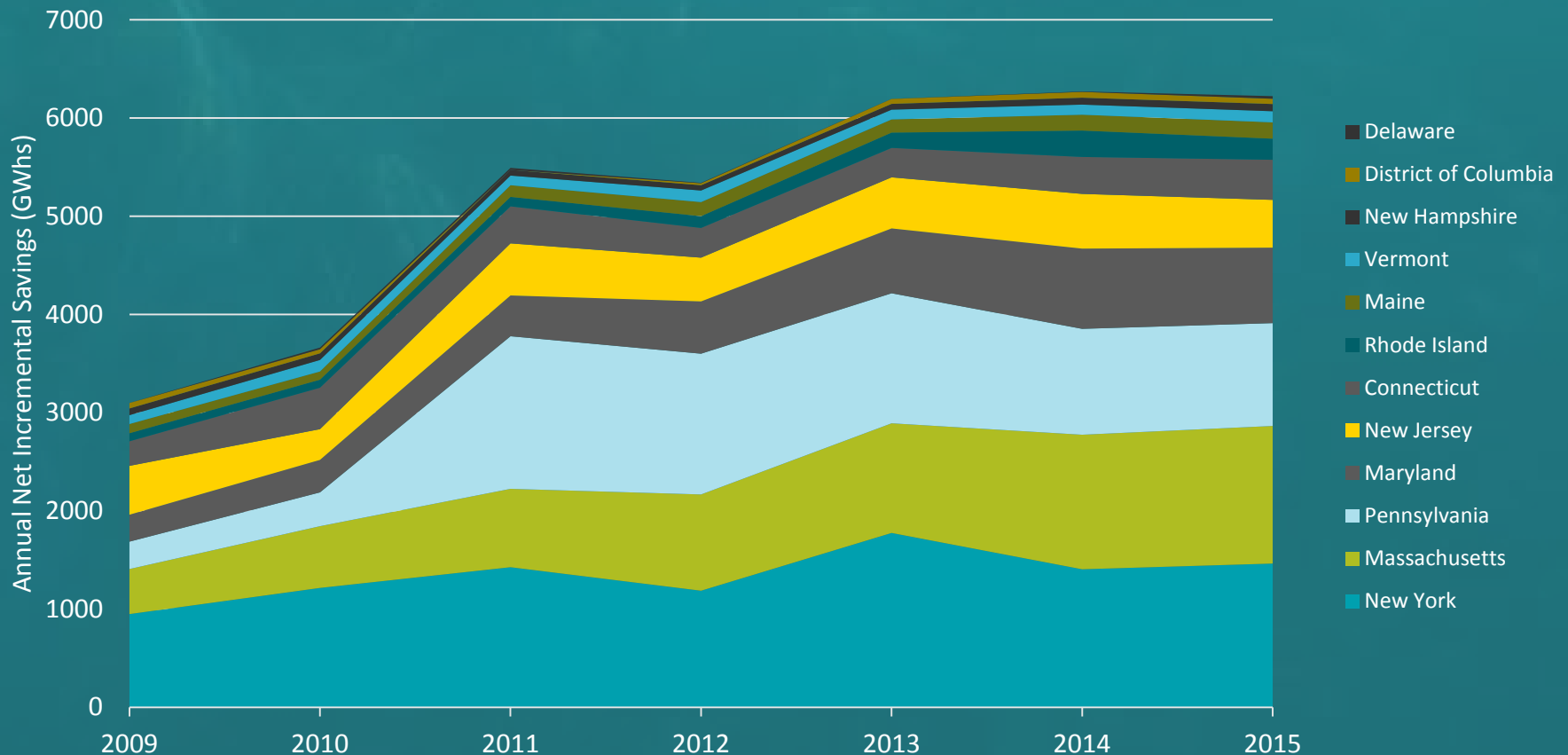


Energy Efficiency Policies and Goals

Provide Extensive Savings



Annual verified electric savings have more than doubled in recent years, moving from ~3,100 GWh in 2009 to ~6,300 GWh in 2015. This is a direct result of regulatory policies and executive leadership in states supporting energy efficiency as a first order resource.



Sources: 2013-15 data is drawn from EIA form 861. 2011-12 and 2015 data is drawn from NEEP's [REED Database](#), ACEEE Scorecard/program administrator reports (D.C. Del., NJ. Pa.). 2009-12 data is drawn, in part, from ACEEE scorecards.

Next Generation Energy Efficiency



TREND	NEXT GENERATION POLICY	STATES
Grid Modernization	Examining new utility frameworks responsive to emerging technologies/societal challenges and anticipating proliferation of multi-directional power flows, while also emphasizing greater customer engagement.	MA, NY, CT, RI, DC, NH, MD
Strategic Electrification and Geo-targeting	Planning to procure savings from energy systems as a whole — across all fuels — with an emphasis on targeting distributed energy resources and their capabilities to defer or limit the need for further investments in distribution and transmission system assets.	VT, RI, NY, MA, ME
Advanced Building Policies	Shifting toward a whole-building approach to efficiency emphasizing advanced building energy codes, code compliance mechanisms, and building energy rating and labeling practices that drive toward “zero energy.”	RI, MA, CT, VT, DC, NY, DE
New Program Strategies	Harnessing new technology and policy innovations within utility program plans to enhance customer understanding around energy usage through expanded energy data access, information communication technologies, and strategic energy management strategies.	MA, VT, CT, NY
Integrating Energy Efficiency and Demand Response	Pairing energy efficiency program planning with opportunities for demand response in a manner that enhances cost-effectiveness and reduces peak load growth.	MD, CT, RI, MA, PA.
EM&V 2.0	Coupling new data collection technologies and software-as-a-service analytic tools with traditional evaluation, measurement, and verification strategies for real-time feedback of efficiency program impacts that is less costly and sufficiently accurate.	States exploring use as customer engagement tool
Ongoing Evolution of Financing Tools	Leveraging private capital investments to increase funding available for energy efficiency programs through the use of Green Banks and related credit facilities, while also preserving proven program structures.	NY, CT, PA., NJ

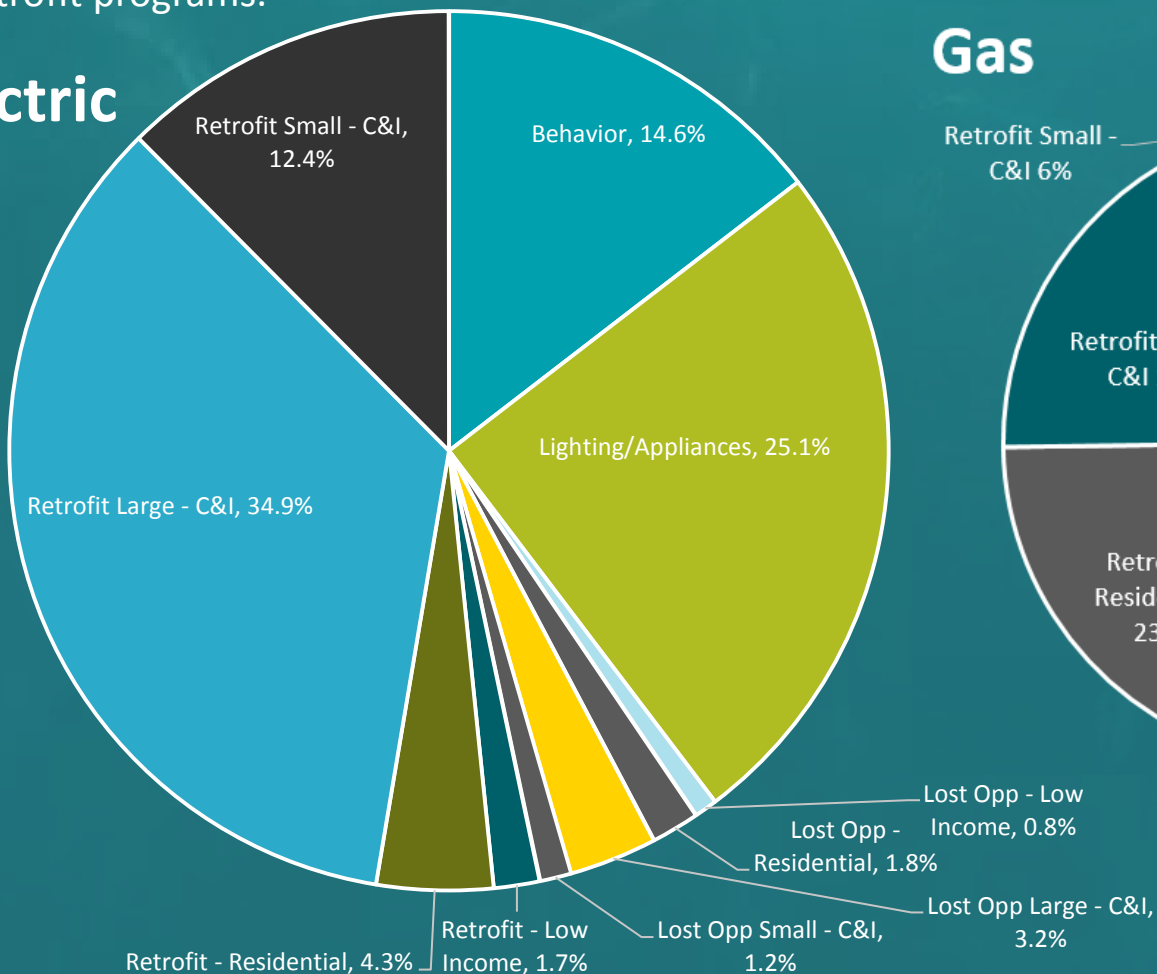
Savings by Program Type

Natural Gas and Electric, 2015

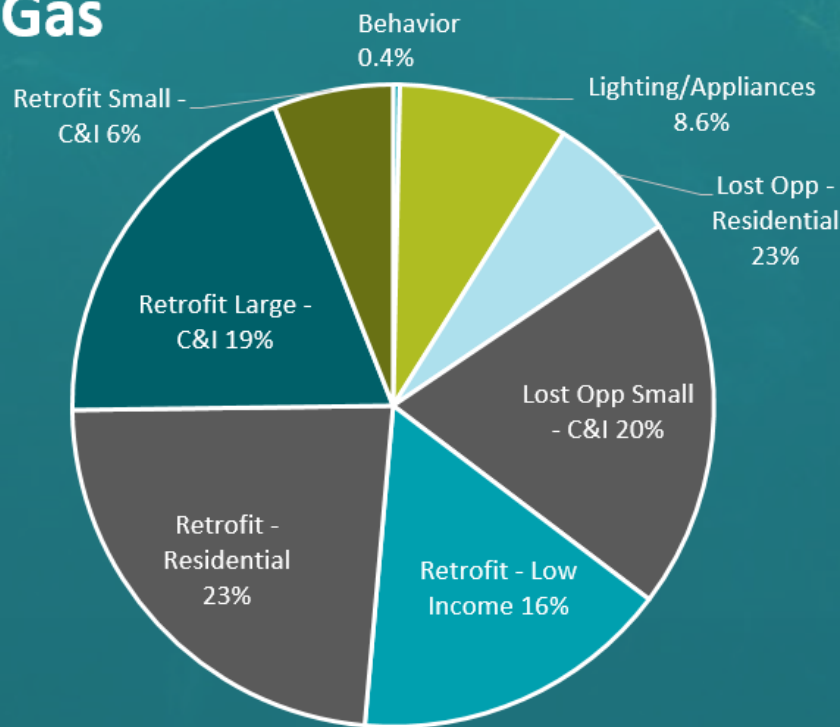


Electric programs mine the majority of savings from lighting, appliances, and large commercial and industrial retrofits, while natural gas programs focus greater attention on low income and residential retrofit programs.

Electric



Gas



Source: NEEP REED Database, which includes Conn., D.C., Del., Md., N.H., and Vt. **5**

Regional Roundup – MA, RI, & NY



National Symposium on Market Transformation, April 4, 2017

Marie Abdou, MA Strategic Business, Policy & Evaluation

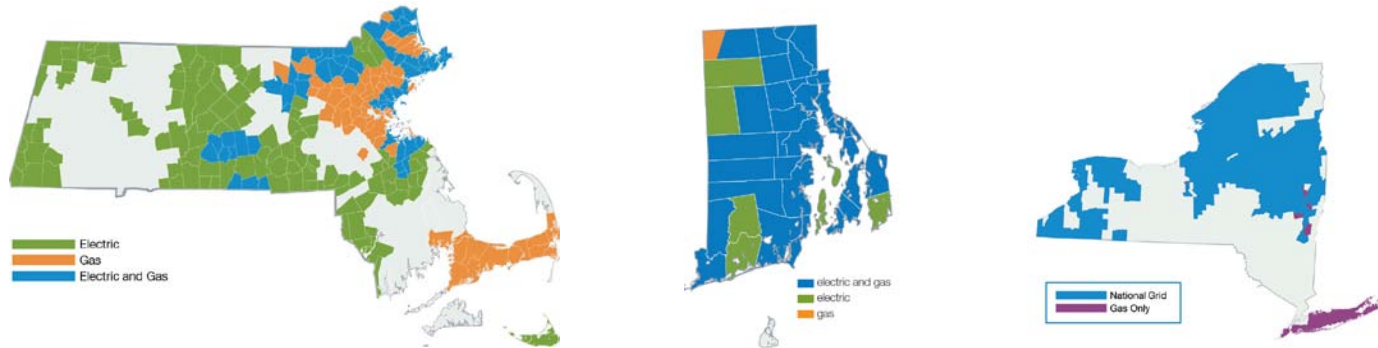


Year Founded	Early 1800s for the gas business and late 1800s/early 1900s for the electric business
Direct Legislative/Regulatory Oversight Bodies	MA: Department of Public Utilities and the Energy Efficiency Advisory Council NY: New York Public Service Commission RI: Public Utilities Commission and the Energy Efficiency & Resource Management Council
Annual Energy Efficiency Budget	2016 Electric: \$414.4 million (\$276 million in MA, \$87.4 million in RI, \$51 million in NY) 2016 Gas: \$182.7 million (\$125 million in MA, \$27.7 million in RI, \$30 million in NY)
Customers Served	3.5 million electric 3.6 million gas
Fuels	
Gas	Yes
Electricity	Yes
Major Energy Efficiency Program Related Responsibilities	
Informing Policy (various jurisdictions)	Yes
Emerging Technology Development	Yes
Program Design	Yes
Program Implementation	Yes
Program Measurement and Evaluation	Yes
Other Reporting and Program Support	<ul style="list-style-type: none"> • Support of state energy policy objectives • Support of state climate plans • ISO-NE Forward Capacity Market • RGGI
Demand Response Programs	Yes
DR integrated with EE	Yes, currently through pilots and demonstration projects.

Successes & Challenges Across the Region

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- MA (#1), RI (#4) and NY (#5) are in top 5 in ACEEE Scorecard
- Customer-focused solutions to become trusted energy advisor
- Evolving implementation & delivery model to keep up with changes
- Diminishing opportunity for claimable savings
- Low gas supply costs challenging cost effectiveness
- Bumping up against boundaries of what can be done through EE programs

The Future of Energy Efficiency

MA, RI, NY

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Grid Modernization

Empowering customers to better manage and reduce electricity costs;

Enhancing the reliability and resiliency of electricity service in the face of increasingly extreme weather;

Encouraging innovation and investment in new technology and infrastructure;

Addressing climate change and meeting clean energy requirements.

Integration of Services

Developing ways to seamlessly integrate energy efficiency with other technologies that customers want (connected devices, electric vehicles, solar, storage)

Simplifying experience for customers, becoming one-stop shop for energy services on the customer side of the meter

Continued Innovation in Energy Efficiency Delivery

Identifying and quantifying all benefits associated with EE, where possible

Attributing savings from improving building codes and appliance standards

Increasing flexibility of program delivery to adapt to new technologies

Spotlight on Key Initiatives

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Smart Energy Solutions Pilot, MA

- An opt-out pilot aimed at reducing peak demand and energy usage. Gives customer choices for technology, rate plan, and how to best receive information



SolarWise, RI

- This effort incentivizes customers for rightsizing their energy needs through energy efficiency before installing solar.



Clifton Parks Demonstration Project, NY

- Pilot targets demand reduction by alerting customers in real-time, educating them on bill savings, and rewarding them through recognition and incentives for participation