State of the Efficiency Program Industry

Budgets, Expenditures, and Impacts 2011

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Acknowledgements

CEE would like to thank the gas and electric efficiency program administrators in the United States and Canada that participated in this year's industry data collection. We appreciate the time and effort given by all survey respondents throughout the data collection process, including the extensive clarification and data validation follow-up. The list of participating organizations can be found in Appendices A and B.

CEE would also like to thank the American Gas Association and the Institute for Electric Efficiency, which were once again major contributors to this year's report. We use a common data instrument to eliminate multiple requests for the same information, as well as coordinate and share in data collection.

CEE also acknowledges the reviewers working in the field of energy efficiency who have provided informal feedback and insights on this work over the years. Reviewers include, but are not limited to, CEE members and staff of the American Council for an Energy-Efficient Economy, Natural Resources Canada, and the Energy Information Administration. We welcome additional feedback from readers to help inform future reports.

This report was produced by Patrick Wallace, Research Assistant, and Hilary Forster, Senior Program Manager of the CEE Evaluation and Research team. Elizabeth Carbone provided valuable data collection and management work during the summer of 2011.

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Executive Summary

This report looks retrospectively at the state of energy efficiency program budgets, expenditures, and savings for natural gas and electric ratepayer-funded programs in the United States and Canada. The report provides 2010 industry data, including program expenditures and energy savings and includes budgets for 2011 at the time of the data collection. The primary purpose of these data is to illustrate the magnitude of the ratepayer-funded energy efficiency program industry and to provide a timely sense of industry trends.

This is the sixth annual industry data collection conducted by CEE, and the third year in a row that CEE partnered with the American Gas Association (AGA) and the Institute for Electric Efficiency (IEE) to collect data on gas and electric efficiency program budgets, expenditures, and impacts from administrators across the United States and Canada. Working with these organizations has streamlined data collection and increased the participant size and response rate for this survey.

Every year CEE and our collaborators aim to increase participation in the survey. This year CEE, together with IEE and AGA, obtained data from 352 utility and nonutility program administrators operating efficiency programs in 47 states and seven Canadian provinces. This response rate is 11 percent higher than last year.

Below are the key findings from this year's industry data collection:

- US and Canadian combined gas and electric efficiency program budgets reached $9.1 billion in 2011. CEE members' programs accounted for 86 percent of this total, or $7.8 billion. US and Canadian gas and electric efficiency program budgets have increased by 21 percent, up from $7.5 billion in 2010.
- US and Canadian efficiency programs saved approximately 124,000 GWh of electricity and over 1.3 billion therms of gas in 2010. This resulted in 92.0 million metric tons of avoided CO_2 emissions from entering the atmosphere.
- Electric budgets in California and New York topped $1 billion each. Together, California, New York, Massachusetts, and Florida accounted for 50 percent (or $3.4 billion) of the total amount budgeted for electric energy efficiency in the United States. Nine states—New York, Massachusetts, Pennsylvania, Maryland, New Jersey, Indiana, Tennessee, Arizona, and California— and the Northwest[1] represented 80 percent of the growth in budgets since last year.
- Natural gas efficiency program budgets in the United States and Canada increased slightly to $1.3 billion, up from a budget of $1.2 billion in 2010.
- Canadian gas and electric efficiency program budgets rose by 22 percent and topped the $1 billion mark for the first time ($1.14 USD, $1.10 billion CAD) in 2011. In 2010, administrators spent over $820 million ($791 million CAD) on efficiency program.

[1] The Northwest region is defined as program activities carried out by the Bonneville Power Administration (BPA) and the Northwest Energy Efficiency Alliance (NEEA) in Idaho, Montana, Oregon, and Washington. Other energy efficiency programs in those states are reported separately by state.

- Canadian electric efficiency program budgets in Ontario, Québec, and British Columbia accounted for 89 percent (or $893 million CAD) of the total amount budgeted for electric efficiency in 2011 ($1.00 billion CAD). Ontario alone accounts for over 42 percent of Canada's total 2011 electric efficiency program budgets.

1 Introduction

The State of the Efficiency Program Industry report looks retrospectively at US and Canadian energy efficiency program budgets, expenditures, and savings for natural gas and electric ratepayer-funded programs. This report seeks to provide the most timely[2] and accurate[3] industry data comprised of 2011 budgets and 2010 expenditures and savings. Timely data is important because it illustrates an accurate snapshot of this rapidly changing and dynamic industry, and allows for better analysis. Collecting this information was made possible through the joint efforts of CEE and industry collaborators,[4] and the contribution of CEE members.[5] The data collected in this report are meant to supplement, and not replace, data collected by organizations such as the Energy Information Administration (EIA) and the Federal Energy Regulatory Commission (FERC). For the purposes of this report, the term "energy efficiency" includes low income and load management programs, unless otherwise stated.

CEE has administered this survey annually to efficiency program administrators, comprised of investor owned utilities, nonutility program administrators, and a selection of municipal power providers and co-ops, typically with efficiency program budgets of $1 million or more. In 2009, CEE began collaborating with the American Gas Association (AGA)[6] and the Institute for Electric Efficiency (IEE)[7] to provide the most current and comprehensive data available on the efficiency program industry in the United States and to increase participation in the survey.

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[2] The survey attempts to collect the most recent information. 2011 budget data were collected in the spring and summer of 2011.

[3] CEE does extensive quality control and follow up with respondents to confirm that reported information appropriately answers the survey questions. CEE also works closely with respondents to ensure that energy savings information is reported in a consistent manner wherever possible. For more information about our methodology, please refer to sections two and six of this report.

[4] CEE collaborators in this survey effort include the American Gas Association (AGA) and the Institute for Electric Efficiency (IEE). These relationships are further explained in the next paragraph.

[5] CEE members are comprised of electric and gas efficiency program administrators from across North America. For more information on CEE membership please visit: http://www.cee1.org/cee/membership.php3

[6] The American Gas Association, founded in 1918, represents more than 200 local energy companies that deliver safe, reliable, and clean natural gas throughout the United States. There are more than 71 million residential, commercial, and industrial natural gas customers in the U.S., of which 92 percent — more than 65 million customers — receive their gas from AGA members. AGA is an advocate for natural gas utility companies and their customers and provides a broad range of programs and services for member natural gas pipelines, marketers, gatherers, international natural gas companies, and industry associates. To find out more, please visit: www.aga.org.

[7] The Institute for Electric Efficiency (IEE) is a program of the Edison Foundation, a 501(c)(3) charitable organization. IEE's mission is to advance energy efficiency and demand response among electric utilities. IEE is governed by a Management Committee of electric industry chief executive officers. IEE has a permanent Advisory Committee made up of representatives of the efficiency community, federal and state government agencies, and other informed stakeholders. IEE also has a Strategy Committee

Over the last six years, this report has shown, and continues to show, steady growth in the energy efficiency program industry. Additionally, the increase in the number of survey participants each year indicates that each year's report reflects a more accurate snapshot of the efficiency industry. Of the 352 utility and nonutility program administrators responding to the survey this year, 11 percent of the administrators are either new to efficiency—programs started in 2010—or are reporting for the first time. This represents more than $462 million of the total reported 2011 efficiency program budgets.[8]

The 2011 State of the Efficiency Program Industry is divided into six sections plus appendices. This section, Introduction, provides an overview of the report's scope and reach. Data Collection Overview describes the report's methodology and includes detailed information on how data were collected, survey response rates, and information on how to understand data presented in this report. Efficiency Program Funding in the US and Canada presents national level data and analysis on ratepayer-funded natural gas and electric efficiency programs in the United States and Canada. Products and Services and Evaluation, Measurement & Verification present analysis on the services and products included in efficiency programs and on evaluation, measurement and verification budgets and expenditures, respectively. The final section, Estimated Energy Savings and Environmental Impacts provides estimated national energy savings data from efficiency programs in the United States and Canada. These data are reported by country, fuel type, and customer segment.

Efficiency program budgets and expenditures are available by state and province on the CEE public website. Energy savings data are aggregated and reported at the regional level for the United States and at the national level for Canada. Savings data are not reported for states or provinces because of the risk of misinterpreting program cost-effectiveness.

This is a voluntary survey that is administered annually to program administrators in the United States and Canada. Because responding organizations may vary by state or province from year to year, caution should be used in comparing data and inferring trends, especially at the state or provincial level. Despite extensive follow-up, not all organizations included in the sample frame respond to the survey each year. Thus, the changes from year to year in the data reported here cannot be entirely attributed to new or expanded programs and new program administrators.

AGA and IEE were major contributors to this year's report. Partnering with these organizations has streamlined data collection and expanded the sample pool of program administrators in the United States and Canada. AGA and IEE publish more information on efficiency programs, including a summary of budgets and expenditures as reported here, energy savings data, program implementation and evaluation, and regulatory information on the efficiency program industry. These organizations may be contacted directly for more information on their publications, which are publicly available on their websites. For more information on this

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comprising senior energy industry executives that identify strategies and projects for IEE. To find out more, please visit: www.edisonfoundation.net

[8] This number is underestimated because it does not take into account data from five natural gas utilities, which reported to AGA for the first time in 2010 but did not agree to release their budgets and expenditures data to CEE at the organizational level.

report, or to obtain copies of the graphics produced for this report, please contact Sarah Griffith, CEE Strategic Communications Director, at reports@cee1.org or visit cee1.org or, for members, ceeforum.org.

2 Data Collection Overview

2.1 Collaboration

CEE collected data throughout the spring and summer of 2011 in conjunction with AGA and IEE. The survey frame includes previous survey respondents, all member organizations of IEE, AGA, and CEE, and nonmembers who submitted data to EIA on Form 861. Because the energy efficiency industry is in a rapid state of change, it is very difficult to identify and survey every efficiency program. CEE attempted, however, to make its sample frame as comprehensive as possible. Due to the vast number of community-owned electric utilities, the survey, for the most part, focused on the municipal power providers and co-ops that had efficiency program budgets of about $1 million or more.[9]

CEE, with IEE, collected all electric program data. CEE, with AGA, collected gas program data. The survey aimed to collect the most up-to-date information, as well as permission to show program expenditures and budget data at the organizational level, from all respondents. In some cases, where CEE knew that there were electric programs running but did not survey them, we used secondary public data filings to obtain basic information on budgets, expenditures, and impacts.[10] "Respondents" in this report include organizations that provided CEE, IEE, and AGA with data directly or aggregately through state agencies or nonutility program administrators as well as information collected through public filings.

2.2 Response Rate

Every year, through outreach and collaboration, CEE aims to increase participation in the survey. This year, CEE, together with IEE and AGA, obtained data from 352 utility and nonutility program administrators operating efficiency programs in 47 states and seven Canadian provinces. The number of respondents to this year's survey is 11 percent higher than the number that responded last year. The CEE member electric response rate was 97 percent this year, up one percentage point from last year.[11] Finally, only a few known electric efficiency program administrators did not provide data to CEE this year. Therefore, CEE concludes that

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[9] There are many community-owned electric utilities operating efficiency programs in the US that are not included in this report. The American Public Power Association (APPA), a nonprofit organization created to serve the nation's more than 2,000 community-owned electric utilities that collectively deliver power to more than 46 million Americans, plans to independently collect data on the efficiency program budgets and expenditures of its members in the future. For more information about APPA, go to: www.publicpower.org.

[10] This includes information for 38 community-based electric utilities in California. CEE obtained this data from the California Municipal Utilities Association's March 2011 Status Report *Energy Efficiency in California's Public Power Sector*. This document can be found at: http://www.cityofpaloalto.org/civica/filebank/blobdload.asp?BlobID=13217.

[11] A list of responding organizations appear in Appendices A and B. The number of organizations in these appendices seems low compared to the information reported above because some organizations may be counted as separate entities in different states for the purposes of calculating response rates.

the vast majority of large electric efficiency program administrators are represented in this report.

AGA collected most of the gas program data for this report. There were a total of 140 utility and nonutility program administrators in the gas sample frame.[12] According to AGA, the gas survey response rate was 95 percent of known gas efficiency programs. CEE members accounted for approximately 63 percent of this response rate. CEE and our collaborators have produced a report that represents the vast majority of the energy efficiency program industry. CEE acknowledges, however, that this report does not capture every energy efficiency program in the United States and Canada. Therefore, the statements made herein may be conservative.

2.3 Data & Participants

2.3.1 Ratepayer Funding

All electric and natural gas efficiency program funding reported here is from ratepayers through public benefits charges or other rate funding mechanisms. Some additional efficiency program funding originates from sources other than ratepayers. These are termed "non-ratepayer funding" for the purposes of this report. This includes but is not limited to funding from the Regional Greenhouse Gas Initiative (RGGI), the New England Forward Capacity Market, state or federal agencies, and the American Recovery and Reinvestment Act (ARRA); these funds are excluded from this report.

2.3.2 Program Information

CEE worked extensively with responding organizations to ensure the data they reported were consistent with the data we requested. When CEE identified what appeared to be outlying values in the data, we contacted those organizations to find the source of unexpected values and worked with them to obtain the correct information.

Changes to program budgets after the summer of 2011, such as those due to newly approved programs or budget cuts, have not been reflected here. Some dollars reported in 2011 represent carryover of unspent funds from 2010.

2.3.3 Reporting Period

CEE asked respondents to provide program expenditures and impacts data for the 2010 calendar year and budgets for the 2011 calendar year by customer class. Not all energy efficiency program administrators' program or fiscal years match the calendar year. In some cases, data may reflect program or fiscal year data rather than calendar year data.

2.3.4 Reporting Categories

The categories "commercial and industrial," "residential," "load management," "low income," and "EM&V" are used in this report because they are both common and straightforward, but not all programs use these exact categories. In particular, the contents of the "other" category

[12] Forty-seven (47) organizations in the sample were found to not be running efficiency programs. These organizations were excluded from the response rate calculation.

vary by state and province. "Other" includes items that not all program administrators allocate by sector such as administration, advertising, agriculture, codes and standards, education and training, general support, planning, research and development, and any program budgets or expenditures that are not allocable by customer class.

Finally, some respondents were not able to separate low income program dollars from residential program funds, and a small number of commercial program dollars were combined with residential program funds. Given that respondents may interpret survey questions differently, expenditure and budget data should be regarded as estimates rather than exact figures.

The low income data understate what states and provinces budget for low income programs because many low income weatherization programs receive significant amounts of federal funding and are run by state or provincial agencies not included in this report. For this reason, the category should be considered as representing only ratepayer-funded low income programs, and the data provided to CEE may differ from other published information about the efforts of particular program administrators.

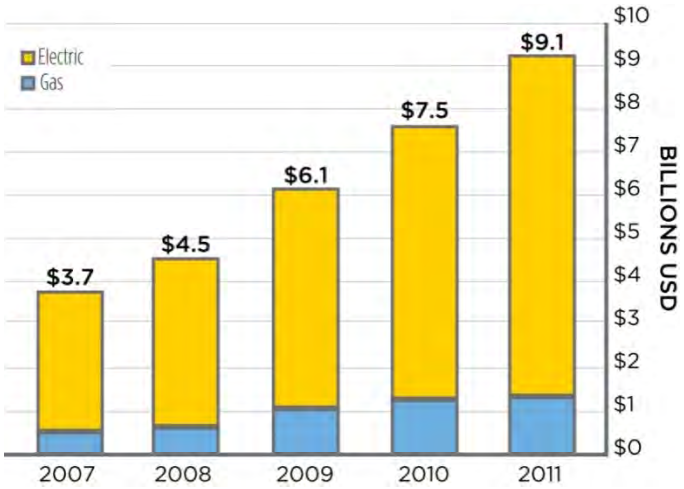
2.3.5 Currency

For ease of reading, all currency is reported in US dollars (USD) unless otherwise specified. This report uses the July 11, 2011 Bloomberg exchange rate of 1.037 USD = 1 CAD throughout. For prior years, the following exchange rates were used: 0.9544 USD = 1 CAD for 2010 budgets and 2009 expenditures, 0.9339 USD = 1 CAD for 2009 budgets and 2008 expenditures, 0.9345 USD = 1 CAD for 2008 budgets and 2007 expenditures, and 1 USD = 1 CAD for 2007 budgets and 2006 expenditures.

3 Efficiency Program Funding in the US and Canada

US and Canadian electric and gas efficiency program budgets reached $9.1 billion in 2011. This is a 21 percent increase from the $7.5 billion budgeted in 2010. As Figure 1 illustrates, budgets for efficiency programs continue to increase rapidly despite a weak economy since 2008.

Figure 1. US and Canadian Efficiency Program Budgets, 2007–2011

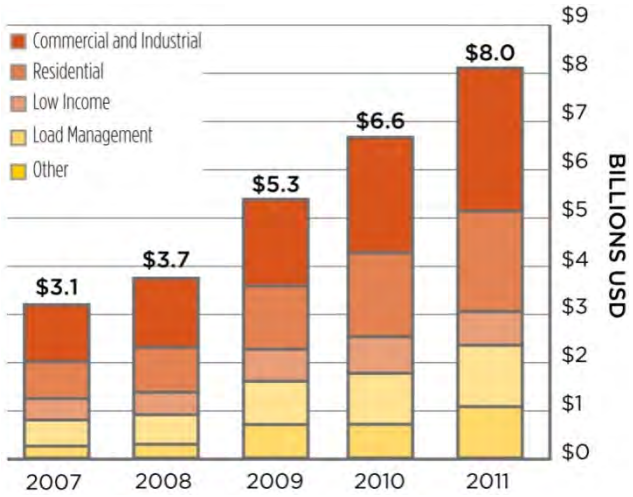


CEE members accounted for $7.8 billion, or 86 percent, of the total US and Canadian gas and electric efficiency program budgets. Across the United States and Canada, reporting program administrators spent $6.5 billion on gas and electric efficiency program expenditures in 2010, an increase over the $5.3 billion they collectively spent in 2009.

3.1 United States

In 2011, US administrators budgeted over $8 billion for gas and electric energy efficiency, more than two and half times the reported program budgets in 2007 (Figure 2). In 2010, reporting natural gas and electric efficiency program administrators in the United States spent $5.7 billion on energy efficiency. This is an increase of more than $1 billion from what US administrators spent on gas and electric efficiency programs in 2009 ($4.6 billion).

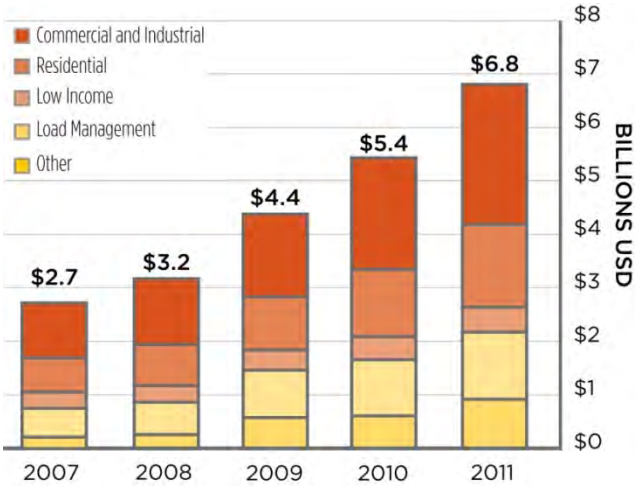
Figure 2. US Combined Electric and Gas Program Budgets, 2007–2011



3.1.1 Electric Efficiency Programs

US administrators budgeted more than $6.8 billion for their electric programs in 2011. This is an increase of approximately 26 percent over reported 2010 program budgets (Figure 3). For those administrators who responded to CEE data requests in both 2010 and 2011, electric efficiency budgets increased by 24 percent this year.

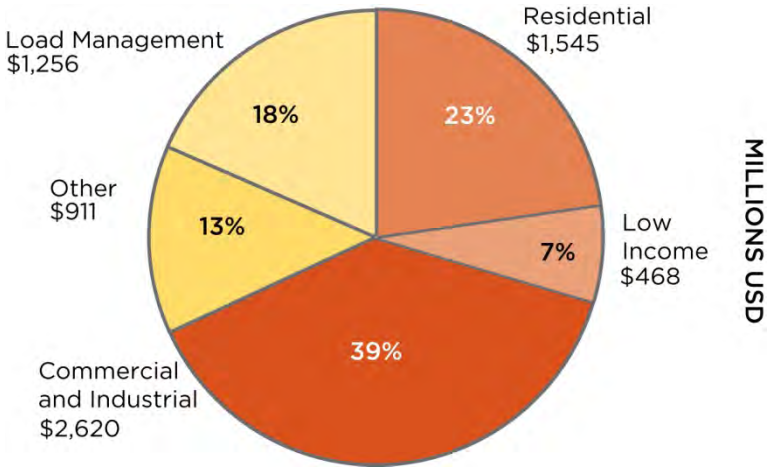
Figure 3. US Electric Program Budgets, 2007–2011



Electric program administrators spent $4.8 billion on energy efficiency in 2010, which is an increase of approximately $1 billion over the $3.8 billion spent on US electric efficiency programs in 2009.

Data continue to show that commercial and industrial efficiency programs receive the largest share of electric program funding, followed by residential efficiency, load management, and low income programs. Administrators allocated an average of 13 percent of their total program budgets to "other", which includes programs not otherwise allocable by customer class such as administration, market research, planning and development, pilot programs, marketing and outreach, and education. (Figure 4).

Figure 4. US Electric Program Budgets by Customer Class, 2011



The 2011 budget percentage breakdown by customer class shown above is nearly identical to the 2010 budget breakdown reported last year despite a large increase in budgets overall. [13]

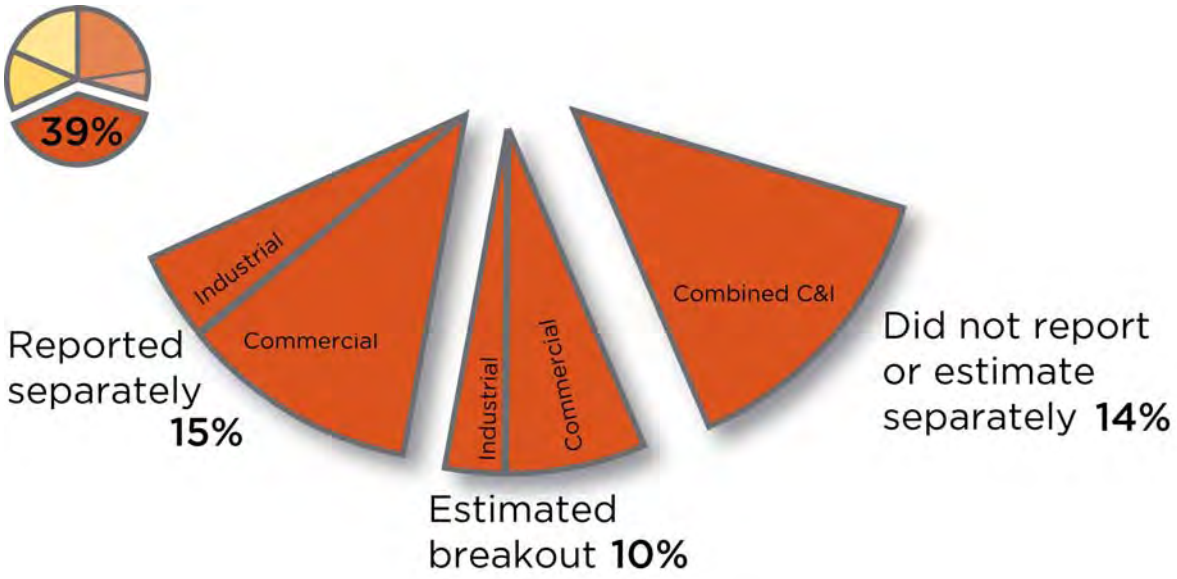
Separating Commercial and Industrial Dollars For the first time, this year CEE surveyed participants to gather information to better separate commercial and industrial program expenditures and budgets. CEE collected this information to better understand how program administrators are able to separate their commercial and industrial program dollars and to provide the energy efficiency program industry with more detail about these market segments.

CEE asked respondents to report expenditures and budgets on commercial and industrial programs separately. If respondents were unable to provide a separate figure for each sector, CEE asked them to estimate the percentage of their combined commercial and industrial budgets that were allocated to industrial programs.

Figure 4 shows that US electric commercial and industrial program budgets accounted for 39 percent of the total amount budgeted for US electric programs. Figure 5 breaks this out further and indicates that respondents representing 15 percent of the total amount budgeted for US electric programs reported commercial and industrial budgets separately, 10 percent provided a percentage estimate of the amount of money budgeted for their separate commercial and industrial programs, and 14 percent provided a budget for their combined commercial and industrial programs only.

[13] Consortium for Energy Efficiency. *State of the Efficiency Program Industry: 2009 Expenditures, Impacts and 2010 Budgets*. http://www.cee1.org/ee-pe/2010AIR.php3, posted December 2010. © Copyright 2010 Consortium for Energy Efficiency. All rights reserved.

Figure 5. Breakout of US Electric Commercial and Industrial Program Budgets by Reporting Category



There is some variance in the certainty of these data due to differing interpretations among respondents of what constitutes a commercial or an industrial program, and because the accuracy of participants' percentage breakout estimates haven't been verified. Therefore this information should not be used to make inferences about commercial or industrial budgets alone. CEE plans to continue expanding and refining this effort in future reports to better understand the size of the commercial and industrial sectors respectively.

Expenditures vs. Budgets This year CEE sought to understand the dollars spent on electric programs in 2010 in relation to the 2010 budget estimates from the previous year.

Figure 6. 2010 US Electric Budgets vs. 2010 US Electric Expenditures (Millions USD)

2010 Budgets Last Year's Report	2010 Expenditures This Year's Report	Percent Difference	Absolute Difference
5,174	4,626	11.8%	548

Note: This table includes only those organizations that responded to the survey in both 2010 and 2011. Values above are approximate.

US electric program administrators collectively budgeted nearly $550 million dollars more for energy efficiency programs than they spent in 2010 (Figure 6). There are many potential reasons for why budgets and expenditures differ, and CEE plans to explore collecting more detailed information regarding these differences in future reports.

Electric Efficiency Budgets by State Electric budgets in California and New York topped $1 billion each in 2011. Together, California, New York, Massachusetts, and Florida accounted for $3.4 billion, or nearly 50 percent, of the total amount budgeted for electric energy efficiency programs in the US.

As noted above in Figure 3, US electric program budgets have grown by approximately $1.4 billion since 2010. Nine states—New York, Massachusetts, Pennsylvania, Maryland, New

Jersey, Indiana, Tennessee, Arizona, and California—and the Northwest[14] represented 80 percent of the growth in budgets since last year (Figure 7).

Figure 7. Growth in US Electric Efficiency Program Budgets (Millions USD)

States	Absolute Annual Growth	2010 Budgets	2011 Budgets	Percent Annual Growth
New York*	495	601	1,096	82%
Northwest**	134	107	241	125%
Pennsylvania	120	151	270	79%
Massachusetts	120	281	401	43%
Maryland	97	114	210	84%
New Jersey	84	228	313	37%
Indiana	57	24	81	238%
Tennessee	53	64	117	83%
Arizona	44	96	140	46%
California	43	1,494	1,537	3%

Notes: *A program administrator in this state included budget dollars this year for line items that it had not included in the past. **The Northwest is defined as program activity by the Bonneville Power Administration (BPA) and the Northwest Energy Efficiency Alliance (NEEA) in Idaho, Montana, Oregon, and Washington. Other energy efficiency programs in those states are reported separately by state.

The efficiency programs in the ten states that have spurred the most growth in the US electric efficiency program market span all regions of the country—the Northeast, Midwest, South, Southwest, and Pacific Coast.

States that showed strong growth as a percentage of their budgets include Arkansas, Virginia, South Dakota, and Mississippi (Figure 8). Two states and the District of Columbia reported budgets in 2011 that did not report budgets in 2010.

Figure 8. Growth in Electric Efficiency Program Budgets by Percentage (Millions USD)

States	Percent Annual Growth	2010 Budgets	2011 Budgets	Absolute Annual Growth
West Virginia	No Budget in 2010	0	7	7
District of Columbia	No Budget in 2010	0	1	1
North Dakota	No Budget in 2010	0	1	1
Arkansas	767%	3	26	23
Virginia	396%	Less than 1	1	1
Indiana	238%	24	81	57
South Dakota	219%	Less than 1	1	Less than 1
Northwest**	125%	107	241	134
Maryland	84%	114	210	96
Mississippi	83%	18	33	15

[14] The Northwest region is defined as program activities by the Bonneville Power Administration (BPA) and the Northwest Energy Efficiency Alliance (NEEA) in Idaho, Montana, Oregon, and Washington. Other energy efficiency programs in those states are reported separately by state in this report. The Northwest region is defined differently in the Institute for Electric Efficiency's *Summary of Ratepayer-Funded Electric Efficiency Impacts, Budgets, and Expenditures (2010–2011)* report.

States	Percent Annual Growth	2010 Budgets	2011 Budgets	Absolute Annual Growth
New York*	82%	601	1,096	495

Notes: *A program administrator in this state included budget dollars this year for line items that it had not included in the past. **The Northwest is defined as program activity by the Bonneville Power Administration (BPA) and the Northwest Energy Efficiency Alliance (NEEA) in Idaho, Montana, Oregon, and Washington. Other energy efficiency programs in those states are reported separately by state.

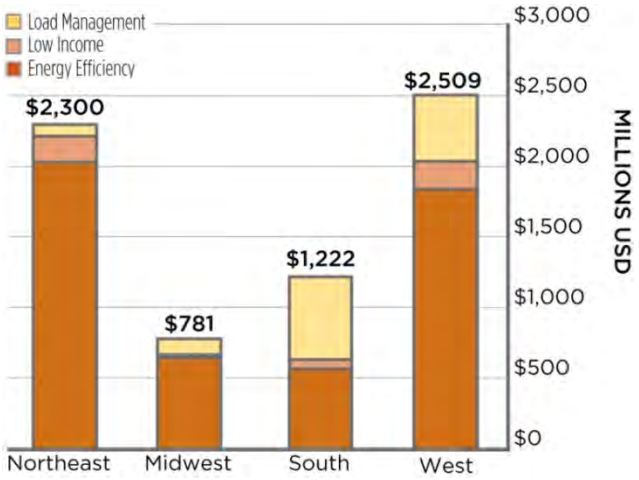
New York, Maryland, Indiana and the Northwest region were both among the top ten in terms of absolute annual growth and percentage annual growth over last year's budgets.

3.1.2 Load Management

Once again, this year CEE collected data on load management budgets and expenditures for electric efficiency program administrators. CEE defines load management programs as those programs that contain direct load control, interruptible demand, or price response interventions.[15]

US electric load management budgets totaled $1.3 billion in 2011. The southern United States continues to invest heavily in load management with over 48 percent of the region's total 2011 efficiency program budgets going to this category. The west continues to invest in load management as well, $470 million, in 2011.

Figure 9. US Electric Efficiency Program Budgets by Region, 2011



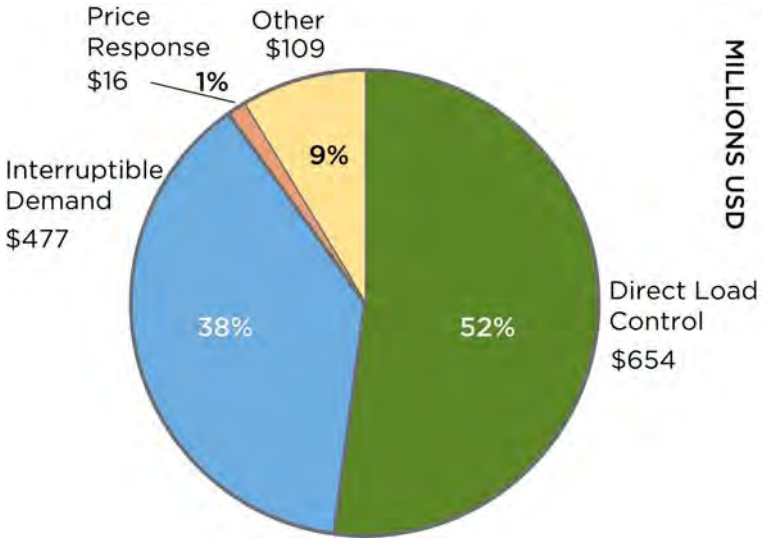
While load management represented nearly half of the South's electric program budgets, load management comprised only about 19 percent of the West's 2011 electric program budgets.

In the US, over half, 52 percent, of load management program budgets were invested in direct load control (Figure 10). This was followed by interruptible demand at 38 percent and price response at one percent. "Other" load management programs comprised nine percent of the

[15] These terms come from the US Energy Information Administration's glossary of terms. To view the glossary, please visit: http://205.254.135.7/tools/glossary/

total load management program budgets in 2011 and included programs not otherwise allocable by program type.

Figure 10. US Electric Load Management Program Budgets, 2011

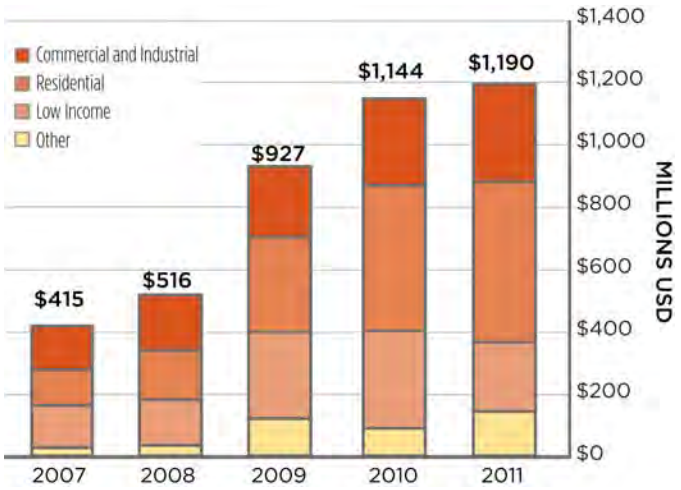


Again, these percentages are similar to the percentages observed last year despite a substantial increase in the amount of money budgeted to load management programs.

3.1.3 Natural Gas Efficiency Programs

Natural gas efficiency program budgets in the United States continued to increase in 2011 (Figure 11). This year, reporting administrators budgeted nearly $1.2 billion for gas efficiency programs. In 2010, US administrators spent about $838 million on gas efficiency programs, up from approximately $803 million in 2009.

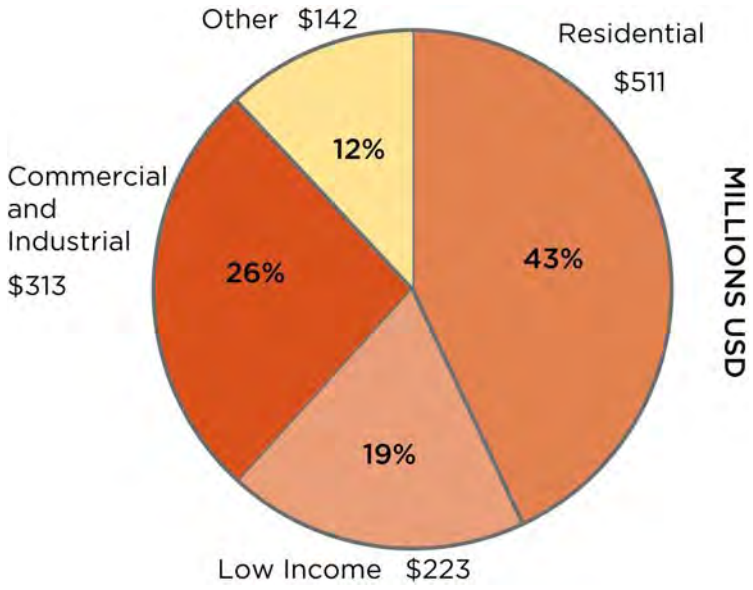
Figure 11. US Gas Program Budgets, 2007–2011



Residential energy efficiency programs comprised the largest percentage of 2011 gas program budgets at 43 percent, followed by commercial and industrial programs at 26 percent, and low income programs at 19 percent (Figure 12). "Other" programs comprised 12 percent of the total efficiency program budgets and included programs that were not otherwise allocable by

customer class. The percentages observed below are similar to those observed in last year's report despite an increase in budgets overall.

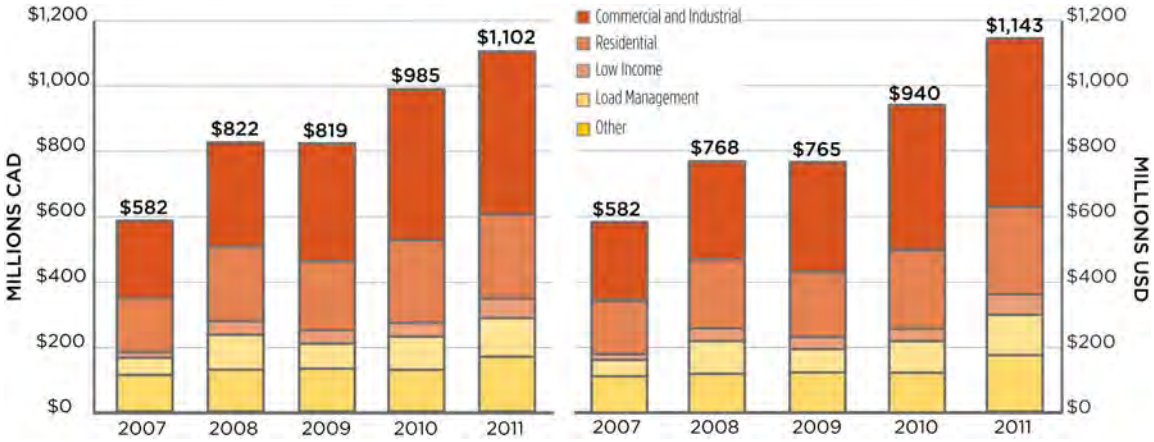
Figure 12. US Gas Program Budgets by Customer Class, 2011



3.2 Canada

In 2011, Canadian electric and gas budgets topped a billion dollars for the first time at $1.14 billion ($1.10 billion CAD). This is a 22 percent increase[16] from reported 2010 program budgets and is over 95 percent more than reported 2007 program budgets (Figure 13). In 2010, reporting natural gas and electric efficiency program administrators in Canada spent $821 million ($791 million CAD) on energy efficiency, an increase of more than $100 million over the $682 million ($714 million CAD) that was spent by these administrators collectively in 2009.

Figure 13. Canadian Electric and Gas Program Budgets, 2007–2011

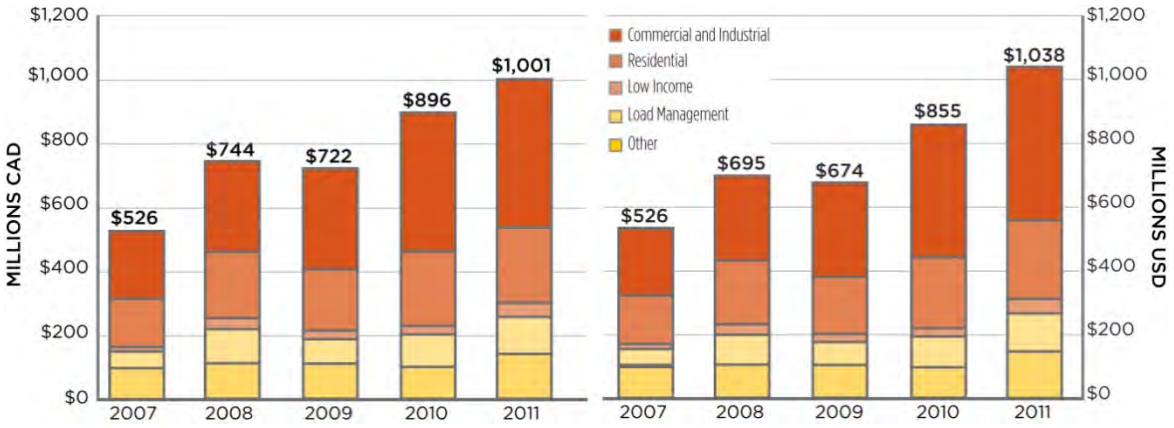


[16] Growth rates are calculated using US dollars.

3.2.1 Electric Efficiency Programs

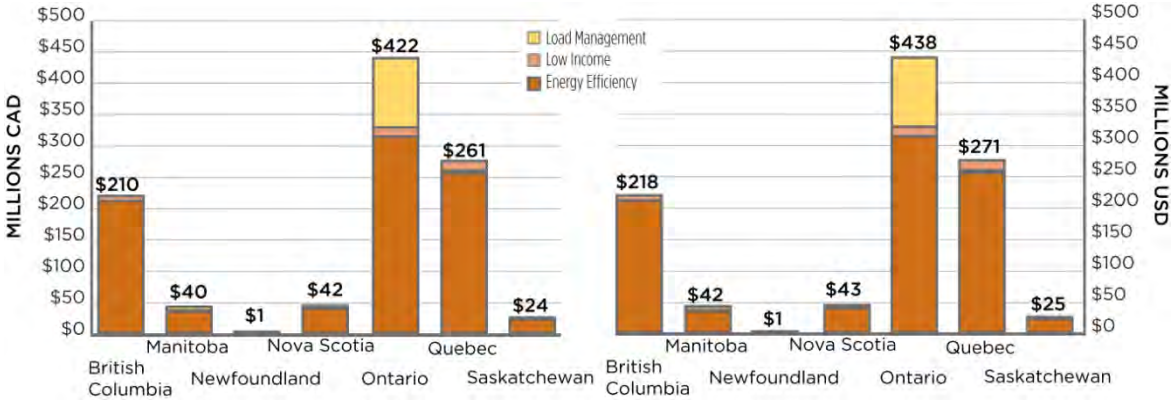
Electric efficiency comprises over 90 percent of the total reported Canadian efficiency program budgets for 2011. Canadian electric program budgets topped $1 billion dollars for the first time coming in at $1.04 billion ($1.00 billion CAD), which is a 21 percent increase in program budgets from 2010 (Figure 14). In 2010, Canadian electric administrators spent $745 million ($718 million CAD), up from the $615 million ($644 million CAD) they spent on these programs in 2009.

Figure 14. Canadian Electric Program Budgets, 2007–2011



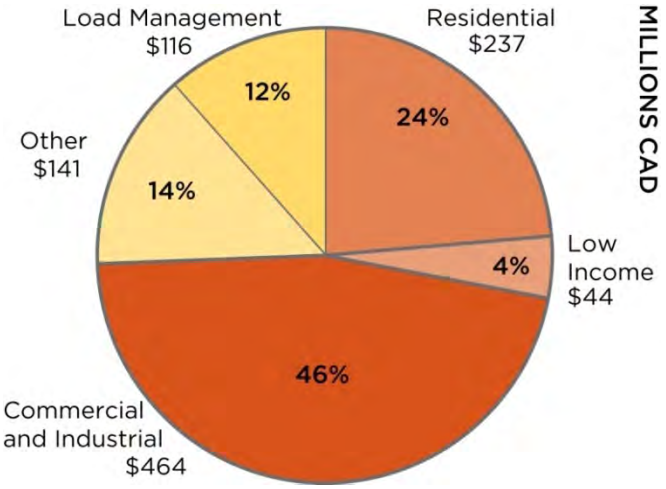
Ontario, Québec, and British Columbia represent nearly 90 percent of the total amount budgeted for electric efficiency programs in 2011 (Figure 15). Ontario alone accounts for more than 40 percent of the nation's total 2011 electric efficiency program budgets.

Figure 15. Canadian Electric Program Budgets by Province, 2011



Commercial and industrial programs received the largest share, 46 percent, of 2011 electric program budgets in Canada (Figure 16). This is followed by residential programs at 24 percent, load management programs at 12 percent, and low income programs at four percent. "Other" programs, which are not otherwise allocable by customer class, comprised 14 percent of total 2011 electric efficiency program budgets.

Figure 16. Canadian Electric Program Budgets by Customer Class, 2011

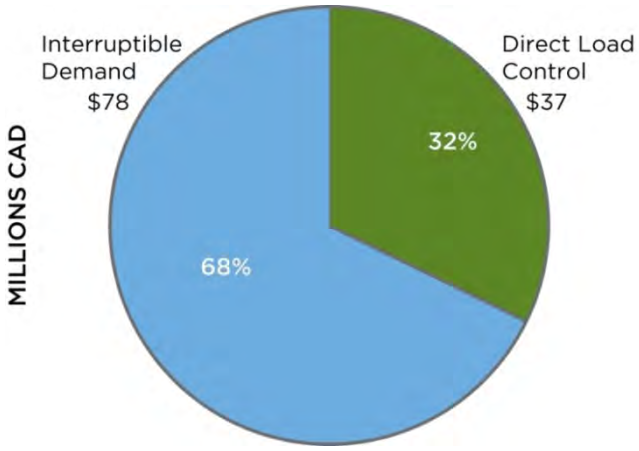


The percentages observed in Figure 16 are similar to those observed in previous years despite an increase in budgets.

3.2.2 Load Management

Canadian electric program administrators budgeted nearly $120 million ($116 million CAD) in 2011 for load management. Sixty-eight (68) percent of Canada's load management budgets in 2011 were invested in interruptible demand, and the remaining 32 percent were invested in direct load control (Figure 17). Ontario reported budgeting for both direct load control and interruptible demand programs, while Quebec and Saskatchewan reported budgeting only for direct load control programs, and Manitoba reported budgeting for only interruptible demand programs. The remaining provinces that reported electric efficiency budgets to CEE (British Columbia, Nova Scotia, and Newfoundland and Labrador) didn't report 2011 load management program budgets.

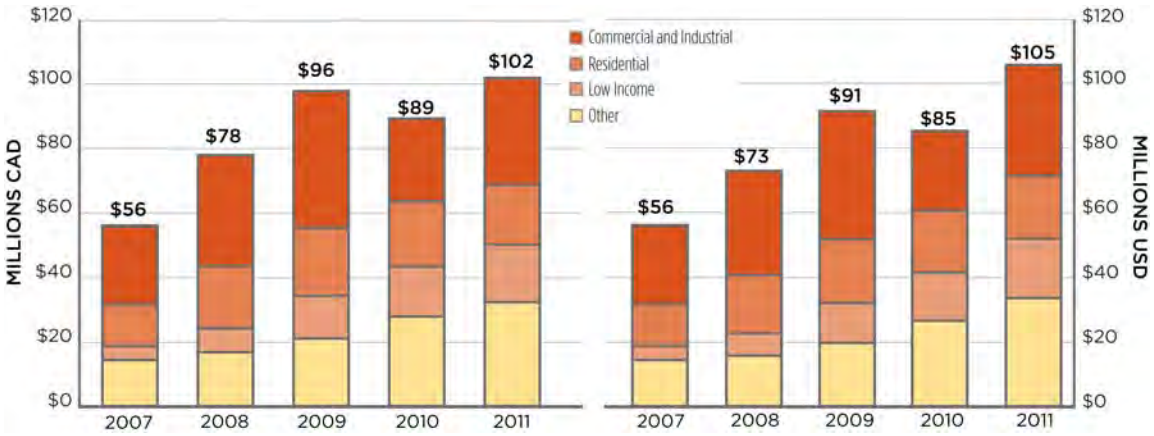
Figure 17. Canadian Electric Load Management Budgets by Customer Class, 2011



3.2.3 Natural Gas Efficiency Programs

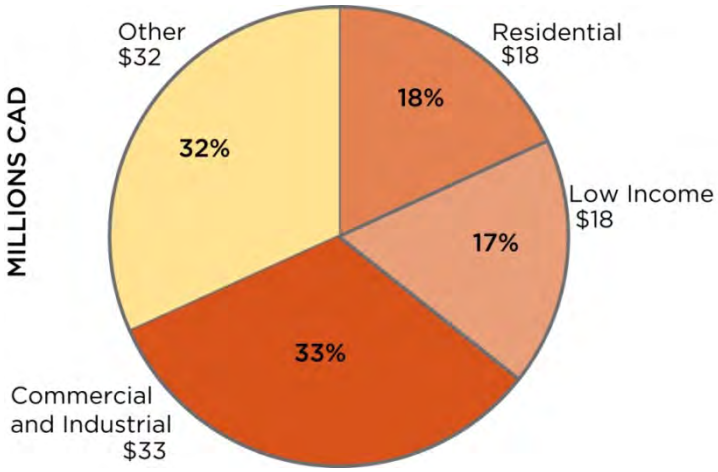
Natural gas program budgets resumed their growth and topped $100 million for the first time in 2011, after showing a slight decline last year from previous years. Since 2007, Canadian gas budgets have grown 88 percent (Figure 18). In 2010, reporting Canadian program administrators spent $76 million ($73 million CAD) on natural gas efficiency programs, up from $67 million ($70 million CAD) in 2009.

Figure 18. Canadian Gas Program Budgets, 2007–2011



Commercial and industrial programs accounted for 33 percent of total Canadian natural gas efficiency program budgets, followed by residential programs (18 percent) and low income programs (17 percent). "Other" programs accounted for 32 percent of the total efficiency program budgets and include programs that are not otherwise allocable by customer class (Figure 19).

Figure 19. Canadian Gas Program Budgets by Customer Class, 2011



4 Products and Services

For the third year in a row, CEE asked respondents to identify the product categories included in their programs from a range of products common to efficiency programs. The results are shown for the United States and Canada, and are listed in descending order by the percentage of respondents that indicated that the product or service was included in their programs.

Figure 20. Products and Services Included in Electric Efficiency Programs, US and Canada

Electric Programs	Percent	Electric Programs	Percent
Residential		**Commercial**	
Compact Fluorescent Lights	85%	Lamps	87%
Heat Pumps	78%	Ballasts	85%
Air Conditioners	68%	Packaged Units	79%
New Construction (whole home)	63%	Controls	77%
Appliance Recycling	56%	Unitary	73%
Refrigerators	52%	Solid State Lighting	72%
Whole House Retrofit	50%	Unitary Heat Pump	72%
Fluorescent Fixtures	49%	New Construction (whole building)	63%
Quality Installation	42%	Energy Management	60%
Room Air Conditioners	40%	Retrofit (whole building)	60%
Tune-up/Controls Upgrade	39%	Data Centers/IT	50%
Clothes Washers	38%	Kitchens	49%
Behavior	38%	Tune-up/Controls Upgrade	48%
Windows	33%	Heat Pumps Water Heaters	41%
Heat Pump Water Heater	29%	Quality Installation	22%
Lighting Controls	28%		
LED Replacement Lamps	28%	**Industrial**	
LED Fixtures	27%	Drives	77%
Dishwashers	25%	Motors	72%
Solar Thermal Water Heater	22%	Custom	66%
Advanced Power Strips	19%	Prescriptive	54%
Televisions	18%	Plant Assessments	50%
Pool Pumps	15%	Continuous Energy Improvement/	
Computers	15%	Strategic Energy Management	35%
Computer Monitors	14%	Separate Agriculture Program	23%
Set-top Boxes	7%		
		Financing	
Multifamily		On-bill Loan	13%
Retrofit	55%	Other Financing	13%
New Construction	42%	On-bill Tariff	4%

Figure 21. Products and Services Included in Gas Efficiency Programs, US and Canada

Gas Programs	Percent	Gas Programs	Percent
Residential		**Industrial**	
Furnaces	90%	Custom	40%
Storage Water Heater	75%	Prescriptive	33%
Boilers	73%	Plant Assessments	31%
Tankless Water Heater	58%	Continuous Energy	
Whole House Retrofit	50%	Improvement/Strategic Energy	
New Construction (whole home)	44%	Management	24%
Tune-up/Controls Upgrade	39%		
Quality Installation	31%		
Direct Heating Equipment	21%		
Clothes Washers	20%		
Windows (any product)	20%		
Solar Thermal Water Heater	12%		
Dishwashers	10%		
Commercial			
Boilers	64%		
Furnaces	62%		
Storage Water Heaters	57%		
Tankless Water Heaters	51%		
Kitchens (any product)	45%		
Tune-up/Controls Upgrade	44%		
Unit Heaters	39%		
New Construction (whole building)	37%		
Energy Management	36%		
Retrofit (whole building)	36%		
Gas-fired Packaged Unitary Equipment	31%		
Solar Thermal Water Heaters	19%		
Quality Installation	18%		

5 Evaluation, Measurement & Verification

CEE, with IEE and AGA, asked respondents to report spending on Evaluation, Measurement and Verification (EM&V) in 2010 and the amount budgeted for EM&V in 2011. Please note that the table below (Figure 22) includes only those programs that reported a dollar figure for their EM&V expenditures and budgets.[17]

Based on 2011 electric energy efficiency budgets, 79 percent of US and Canadian electric efficiency administrators provided a separate dollar figure for their EM&V activities in 2011.[18,19]

Not all respondents budget or conduct evaluation on an annual basis, and other respondents didn't fill out this portion of the survey. Furthermore, because evaluation and its related program budgets do not necessarily occur in the same time frame, caution is urged when comparing program budgets to dollars for EM&V activities.

Figure 22. Electric and Gas EM&V Expenditure and Budget Dollars, US and Canada (Millions USD):
For the portion of respondents who reported an EM&V dollar figure*

Electric

Country	2010 EM&V Expenditures	2011 EM&V Budgets	Total 2011 Energy Efficiency Budgets**
United States	58	154	4,239
Canada	11	32	895
Total	69	186	5,134

Gas

Country	2010 EM&V Expenditures	2011 EM&V Budgets	Total 2011 Energy Efficiency Budgets**
United States	9	27	782
Canada	1	Less than 1	78
Total	10	27	860

Notes: *The above table includes only those programs that provided an EM&V dollar figure. Those who provided an estimated percentage of their EM&V activities from their total energy efficiency funding are not included.
**Dollar figures in the Total 2011 Energy Efficiency Budgets column exclude load management because CEE did not ask for EM&V expenditures and budgets in the load management portion of the survey.

[17] CEE asked respondents who were unable to report their EM&V activities as a separate line item to provide an estimate of their EM&V activities as a percentage of their total energy efficiency expenditures and budgets. This information is not included in this report however, because it could not be combined in an accurate way.

[18] This figure cannot be determined for gas respondents because not every organization that reported their information to AGA agreed to release their data to CEE at the organizational level.

[19] These budgets exclude load management because CEE did not ask for EM&V expenditures and budgets in the load management portion of the survey.

6 Estimated Energy Savings and Environmental Impacts

CEE collected data on energy efficiency impacts from gas and electric program administrators in 2010.[20] In order to help respondents report their impacts consistently across states and provinces, CEE used the Energy Information Administration's (EIA) definitions of annual and incremental effects.[21]

CEE sought to collect net annual effects from all respondents, but many organizations were unable to report their impacts in this manner.[22] If a respondent was unable to provide net annual effects, we used gross annual effects. If annual effects were not provided, then CEE used net or gross incremental effects, as available.

Although CEE worked with respondents to ensure that impacts data were reported as consistently as possible, many organizations calculate and report impacts according to reporting requirements in their states or provinces, which may or may not be consistent with EIA definitions. Not all organizations were able to adjust their estimates to reflect EIA definitions or across jurisdictions. Also, because of the timing of the request and differing evaluation cycles across organizations and jurisdictions, impacts were often reported prior to evaluation and are subject to change.

6.1 Electric Efficiency Program Savings

Ratepayer-funded energy efficiency programs are saving energy and reducing the amount of greenhouse gases emitted in the United States and Canada. Reporting efficiency programs in the United States and Canada estimated savings of approximately 124,000 GWh of electricity in

[20] CEE also collects data on energy savings from load management programs, however, these data are not reported by region or nation because it cannot be aggregated in a meaningful way.

[21] According to the EIA Form EIA-861, incremental effects or impacts include "all energy savings that accumulated from new participants in existing programs and all participants in new programs in 2010." Annual effects or impacts are defined as "all energy savings that accumulated from participation in existing or previously implemented programs (including those terminated since 1992) during the calendar year 2010 and the ramped impacts from new programs, or new participants in existing programs, during the calendar year 2010." We asked respondents to consider the useful life of efficiency measures by accounting for building demolition, equipment degradation, and program attrition when calculating annual effects.

[22] Net effects exclude whatever is typically excluded in the jurisdictions of reporting organizations. This often includes, but is not limited to, free riders, savings due to government mandated codes and standards, and the "natural operations of the marketplace," such as reduced use because of higher prices and fluctuations in weather or business cycles.

2010 (Figure 23).[23] This is equivalent to 85.5 million metric tons of avoided CO_2 emissions.[24] CEE members' programs accounted for 89 percent of these estimated savings.

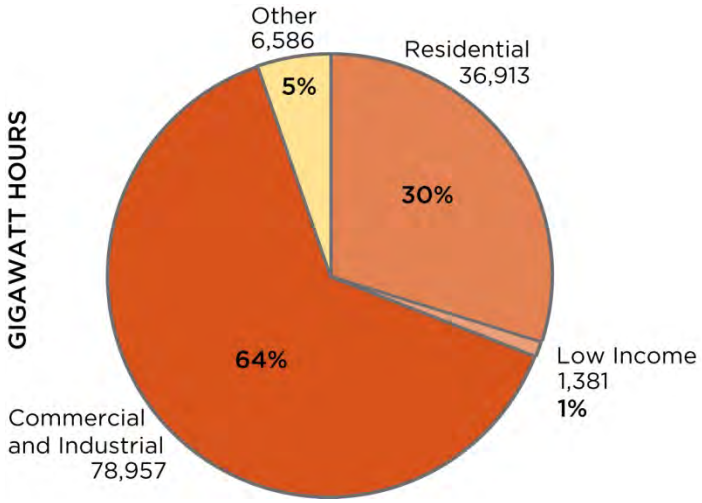
Figure 23. Estimated Annual Electric Energy Savings for 2010 (GWh)*

	Residential	Low Income	C & I	Other	Total
United States**					
Northeast	8,358	439	28,328	734	37,859
Midwest	4,519	77	12,319	305	17,220
South	7,625	174	6,404	17	14,220
West	12,915	616	25,801	3,837	43,170
Subtotal, United States	33,417	1,306	72,852	4,893	112,468
Canada***	3,496	75	6,105	1,693	11,368
Binational Electric Total	36,913	1,381	78,957	6,586	123,837

Notes: *Based on estimated 2010 savings from measures installed in 2010, as well as from measures installed as early as 1992 that were still generating savings as of 2010 (i.e. "annual effects"). **Seventy-one (71) percent of respondents reported annual effects. For respondents that did not report annual effects, CEE used incremental effects in calculating totals. ***Eighty-eight (88) percent of respondents reported annual effects. For respondents that did not report annual effects, CEE used incremental effects in calculating totals.

Across the United States and Canada, commercial and industrial electric programs accounted for almost two-thirds of the total energy savings (64 percent), followed by residential (30 percent) and low income programs (one percent). "Other" accounted for five percent of the total energy savings and includes programs not otherwise allocable by customer class (Figure 24).

Figure 24. Electric Efficiency Program Savings by Customer Class, 2010



[23] This figure represents a combination of annual and incremental impacts. About 60 percent of respondents that reported savings data provided net impacts. The remainder provided gross impacts.

[24] Calculated using the EPA Greenhouse Gas Equivalencies Calculator. Accessed December 2011, http://www.epa.gov/cleanenergy/energy-resources/calculator.html.

In 2010, the value of electric efficiency savings across the United States and Canada was $12.0 billion ($11.6 billion CAD).[25]

6.2 Natural Gas Efficiency Program Savings

Reporting natural gas efficiency programs in the United States and Canada estimated savings of over 1.3 billion therms of gas in 2010 (Figure 25).[26] This is equivalent to 6.5 million metric tons of avoided CO_2 emissions. CEE members' programs accounted for 82 percent of the total energy savings estimate.

Figure 25. Estimated Annual Gas Energy Savings for 2010 (MDth)*

	Residential	Low Income	C & I	Other	Total
United States					
Northeast	14,356	2,131	11,841	428	28,757
Midwest	8,729	1,472	8,505	1,702	20,408
South	385	45	141	0	571
West	8,454	1,181	19,525	1,924	31,084
Subtotal, United States	31,924	4,829	40,013	4,054	80,820
Canada	11,249	12,262	30,146	127	53,784
Binational Gas Total	43,173	17,091	70,159	4,181	134,604

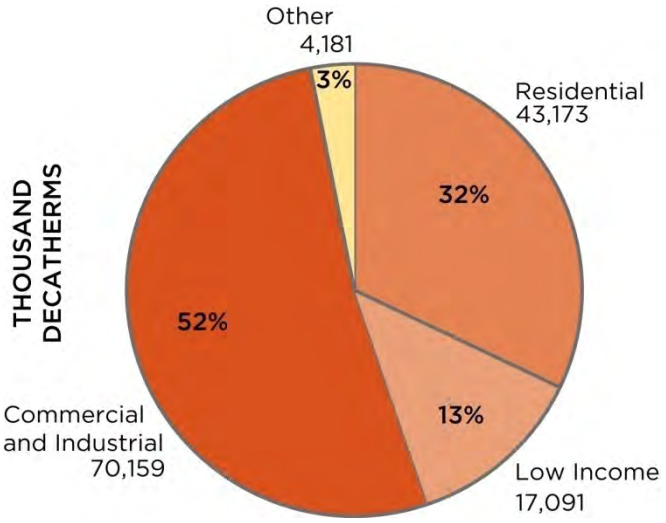
Notes: * Based on estimated 2010 savings from measures installed in 2010, as well as from measures installed as early as 1992 that were still generating savings as of 2010 (i.e. "annual effects").

Across the United States and Canada, commercial and industrial programs accounted for the majority of energy savings (52 percent), followed by residential programs (32 percent) and low income (13 percent). "Other" accounted for three percent of the estimated natural gas energy savings and includes programs not otherwise allocable by customer class (Figure 26). As a percentage, commercial and industrial savings were lower, and low income savings were higher than the savings observed in last year's report.

[25] US electric retail values were calculated based on the average rate per kWh across the US in 2010 using data from the Energy Information Administration's Annual Report on Electric Sales, Revenue, and Price. Accessed December 2011. Average electric rates used: $0.1154 per kWh (residential) and $ 0.0848 per kWh (commercial/industrial). Canadian electric retail values were calculated based on the average rate per kWh across Canada in 2010 using data from National Energy Board of Canada. Average electric rate used: $ 0.107 CAD per kWh (all sectors).

[26] According to AGA, about 47 percent of respondents that provided savings data reported net impacts, with the remainder providing gross savings. This figure represents a combination of annual and incremental effects.

Figure 26. Gas Efficiency Program Savings by Customer Class, 2010



In 2010, the value of natural gas energy efficiency savings across the United States and Canada was $1.30 billion ($1.26 billion CAD).[27]

[27] US gas retail values were calculated based on the average rate per therm across the US in 2010 using data from Energy Information Administration: Natural Gas Annual Report, Table 24: Average Price of Natural Gas Delivered to Consumers by State. Accessed December 2011. Average gas prices used: $1.0905 per therm (residential) and $0.7082 per therm (commercial and industrial). Canadian gas retail values were calculated based on the average rate per therm across Canada in 2010 using data from National Energy Board of Canada. Average natural gas rate used: $1.03 CAD per therm (all sectors).

Appendix A List of Electric Survey Respondents

Alabama Power Company
Alameda Municipal Power
Alliant Energy
Ameren Corporation
American Electric Power
Anaheim Public Utilities
Arizona Public Service Company
Austin Energy
Avista Corporation
Azusa Light & Water
Baltimore Gas & Electric Company
Black Hills Energy
Bonneville Power Administration
British Columbia Hydro and Power Authority
Burbank Water & Power
Burlington Electric Department
Cape Light Compact
CenterPoint Energy Houston Electric, LLC
City of Banning Electric Utility
City of Biggs
City of Healdsburg
City of Hercules Municipal Utility
City of Industry
City of Lompoc
City of Needles
City of Palo Alto Utilities
City of Shasta Lake
City of Vernon Light & Power
City Utilities of Springfield, MO
Clallam County Public Utility District
Colton Electric Utility
Commonwealth Edison Company
Connecticut Light & Power Company
Consolidated Edison Company of New York, Inc.
Consumers Energy
Corona Department of Water and Power
Dayton Power & Light, Inc
Delmarva Power and Light
DTE Energy Company
Duke Energy Corporation
Duquesne Light Company
Efficiency Maine
Efficiency Nova Scotia Corporation (ENSC)
Efficiency Smart
Efficiency Vermont
El Paso Electric Company
Energy Trust of Oregon
Entergy Corporation
Eugene Water & Electric Board
Fitchburg Gas and Electric Light Company
Florida Power & Light Company
Florida Public Utilities
Focus on Energy
Fort Collins Utilities
FortisBC Inc.
Gainesville Regional Utilities
Glendale Water and Power
Great River Energy
Green Cove Springs Electric Utility
Gridley Municipal Utility
Hawaii Energy Efficiency Program
Hydro-Québec
Idaho Power
Imperial Irrigation District
Indianapolis Power & Light Company
Island Energy
Kansas City Power & Light Company
Lassen Municipal Utility District
Lee County Electric Cooperative, Incorporated
LG&E and KU
Lodi Electric Utility
Long Island Power Authority
Los Angeles Dept of Water & Power
Manitoba Hydro
Merced Irrigation District
MidAmerican Energy Holdings Company
Minnesota Power
Modesto Irrigation District
Moreno Valley Utility
National Grid
Nebraska Public Power District
New Hampshire Electric Cooperative, Inc.
New Jersey Board of Public Utilities (NJBPU)
New York Power Authority
New York State Energy Research and Development Authority (NYSERDA)
Newfoundland and Labrador Hydro
Northern Indiana Public Service Company (NIPSCO)
Northwest Rural Public Power District
NorthWestern Energy
NSTAR
NV Energy, Inc.
OGE Energy Corporation
Omaha Public Power District
Oncor Electric Delivery Company LLC
Ontario Power Authority
Orange and Rockland Utilities, Inc.
Otter Tail Power Company
Pacific Gas & Electric Company
Pacific Power
Pasadena Water and Power

PECO Energy Company
Pike County Light & Power Company
Platte River Power Authority
Plumas-Sierra Rural Electric Cooperative
PNM
Port of Oakland
Potomac Electric Power Company
PPL Electric Utilities
Progress Energy
Public Interest Energy Research Program (PIER)
Public Service Company of New Hampshire
Public Service Electric & Gas
Puget Sound Energy
Rancho Cucamonga Municipal Utility
Redding Electric Utility
Riverside Public Utilities
Rochester Public Utilities
Rockland Electric Company
Rocky Mountain Power
Roseville Electric
Sacramento Municipal Utility District
Salt River Project
San Diego Gas & Electric Company
SaskPower
Seattle City Light
Silicon Valley Power
Snohomish County Public Utility District
Southern California Edison
Southern Company
Southern Maryland Electric Cooperative, Inc.
Southern Minnesota Municipal Power Agency
Southwestern Public Service Company
Tacoma Power
Tampa Electric Company
Tennessee Valley Authority
Texas-New Mexico Power Company
The Empire District Electric Company
The Northwest Energy Efficiency Alliance
The United Illuminating Company
Trinity Public Utility District
Truckee Donner Public Utility District
Tucson Electric Power
Turlock Irrigation District
Ukiah Public Utility
Unitil Energy Systems, Inc.
UNS Electric, Inc
Vectren Energy Delivery
Victorville Municipal Utility Services
Wakefield Municipal Gas and Light Department
We Energies
Westar Energy, Inc.
Western Massachusetts Electric Company
Wisconsin Power and Light Company
Xcel Energy Inc.

Appendix B List of Gas Survey Respondents

Ameren Illinois Utilities (Ameren Corporation)
Arkansas Oklahoma Gas Corporation
ATCO Gas
Atmos Energy
Avista Utilities (Avista Corp.)
Baltimore Gas and Electric Corporation (Constellation Energy)
Berkshire Gas Company, The (UIL Holdings Corp)
Black Hills Energy Corporation (formerly Aquila, Black Hills Corporation)
Cascade Natural Gas Corp (MDU Resources Group)
CenterPoint Energy
Central Hudson Gas & Electric Corporation
Chattanooga Gas Company (AGL Resources Inc.)
Citizens Energy Group
City of Palo Alto Utilities
City Utilities of Springfield, MO
Colorado Natural Gas, Inc. (Summit Energy)
Columbia Gas (NiSource Inc.)
Connecticut Natural Gas Corp (UIL Holdings Corp)
Consolidated Edison of New York (Consolidated Edison, Inc.)
Consumers Energy (CMS Energy Corporation)
Delta Natural Gas Company, Inc.
Dominion East Ohio (Dominion Resources, Inc.)
Duke Energy Corporation
Elizabethtown Gas (AGL Resources Inc.)
Empire District Gas Company, The
Enbridge Gas Distribution Inc.
Enbridge St. Lawrence Gas
Energy Trust of Oregon
Equitable Gas Company LLC (EQT Corp.)
Fitchburg Gas and Electric Light Company D/B/A Unitil Massachusetts
Florida City Gas (AGL Resources Inc.)
Florida Public Utilities
Focus on Energy
FortisBC Inc.
Great Plains Natural Gas Co (MDU Resources Group)
Intermountain Gas Company (MDU Resources Group)
Interstate Power and Light Company (An Alliant Energy Company)
LaClede Gas Company (The LaClede Group Inc.)
Manitoba Hydro
Michigan Gas Utilities Corporation (Integrys Energy Group)
MidAmerican Energy Company
Minnesota Energy Resources Corporation (Integrys Energy Group)
Missouri Gas Energy (Southern Union Company)
Montana-Dakota Utilities Company (MDU Resources Group)
National Fuel Gas Distribution Corporation (National Fuel Gas Company)
National Grid
New Jersey Board of Public Utilities (NJBPU)
New Jersey Natural Gas Company (New Jersey Resources)
New Mexico Gas Company (Continental Energy Systems LLC)
New York State Energy Research and Development Authority (NYSERDA)
Nicor Gas (Nicor Inc.)
Northern Indiana Public Service Company (NiSource Inc.)
Northern Utilities, D/B/A Unitil
NSTAR
NV Energy, Inc. (formerly Sierra Pacific Resources)
NW Natural
Orange & Rockland Utilities, Inc. (Consolidated Edison Inc.)
Pacific Gas and Electric Company (PG&E Corporation)
PECO Energy (Exelon Corporation)
Peoples Gas/North Shore Gas (Integrys Energy Group, Inc.)
Peoples Natural Gas (formerly Dominion Peoples)
Philadelphia Gas Works
Piedmont Natural Gas Company, Inc.
Public Interest Energy Research Program (PIER)
Public Service Electric and Gas Company (PSEG)
Puget Sound Energy (Puget Energy)
Questar Gas Company
San Diego Gas & Electric Company (SEMPRA Energy)
SaskEnergy
Source Gas Distribution (SourceGas LLC)
South Jersey Gas (South Jersey Industries Inc.)
Southern California Gas Company (SEMPRA Energy)
Southern Connecticut Natural Gas (UIL Holdings Corp)
Southwest Gas Corporation
TECO Peoples Gas (TECO Energy, Inc.)
Texas Gas Service (ONEOK, Inc.)
The Michigan Consolidated Gas Company (DTE Energy Corp)
UGI Utilities, Inc. (UGI Corporation)
Union Gas Limited (Spectra Energy)
UniSource Energy Services Gas

Vectren Energy Delivery (Vectren Corporation)
Vermont Gas Systems, Inc. (Northern New England Energy Corporation)
Virginia Natural Gas (AGL Resources Inc.)
Washington Gas Light Company (WGL Holdings, Inc.)
We Energies (Wisconsin Energy Group)
Westfield Gas & Electric Department
Wisconsin Power and Light, An Alliant Energy Company
Wisconsin Public Service (Integrys Energy Group)
Xcel Energy Inc.
Yankee Gas Service (Northeast Utilities)