



2016 Fourth Quarter Colorado DSM Roundtable Update

February 14, 2016

Public Service Company of Colorado ("Public Service" or the "Company") provides the following update regarding product status including energy and demand savings achieved, product expenditures, implementation changes, and measurement and verification ("M&V") modifications.

Product Implementation Status

Please refer to the attached table for the preliminary fourth quarter 2016 (cumulative Jan. 1 – Dec. 31, 2016) product energy and demand savings achieved, product expenditures, and CO₂ and SO₂ emissions avoided. In total, Demand-Side Management (DSM) electric products have achieved savings of approximately 404 GWh and gas savings of 618,579 Dth in the 2016 calendar year. This represents roughly 101% of the 2016 electric DSM plan's energy savings target of 404.1 GWh and 101% of the gas target of 615,040 Dth.

The following section provides product status activities for the second quarter of 2016 in the Business, Residential, Low-Income, and Demand Response Programs, as well as Indirect Products & Services and other related activities.

Business Program

- **Commercial Refrigeration Efficiency** – The Commercial Refrigeration product achieved 49% of its GWh savings target and 106% of its natural gas savings target by the end of the fourth quarter. The shortfall in electric energy savings was largely due to projects pushing into 2017.
- **Compressed Air Efficiency** – The product achieved slightly over 2 GWh of electric energy savings through the fourth quarter of 2016. Marketing efforts focused on advertising compressed air studies and implementing projects based on the study recommendations. Increasing the marketing for customers to participate in studies is to build up a stronger pipeline for custom projects.
- **Computer Efficiency** – The Computer Efficiency product has achieved 5.1 GWh for 2016. The Company continues to promote the benefits of Virtual Desktop Infrastructure, Personal Computer Power Management to customers. The program completed a program evaluation and will be implementing recommendations.
- **Cooling** – The product achieved 8.4 GWh of energy savings through the fourth quarter. Midstream products are continuing to see strong growth, particularly with water source heat pumps and air cooled chillers. The midstream product achieved over 21,000 tons of equipment installed which represented a 350% increase over the previous year.
- **Custom Efficiency** – The product achieved 2.4 GWh of electric energy savings and 7,156 Dth natural gas savings through the fourth quarter. The natural gas savings exceeded target by 155%.
- **Data Center Efficiency** – The product ended the year at 75% of the year-end electric savings target with the completion of several projects. In the fourth quarter, the Company conducted an advisory board meeting discussing the new construction offering of the product.

- **Energy Management Systems (EMS)** – The EMS product achieved 100% of its electric energy savings target, with electric expenditures under budget. The product exceeded its natural gas savings target by 170% due to two large projects, one with multiple premises. Participants included an extremely broad range of customer segments.
- **Heating Efficiency** – The product had momentum going into the final quarter and finished strong achieving a total of 107% of its year-end natural gas savings target. The new electric Electronically Commutated Motor for Furnace Fan measure did not meet the target; however, the measure had newly launched January 1, 2016 and Company education and outreach strategies will continue. The Company saw higher participation in gas measures than in years past, due to increased outreach and year-long bonus incentives and was successful in preparing customers and trade allies in advance of the heating season through many technical trainings. Customers mostly participated in new >92% efficient hot water boilers which represented 56% of the entire Dth program achievement. In order to prudently manage expenses, the Company continued to employ only low-cost marketing efforts in the fourth quarter.
- **LED Street Lights** – The LED Street Lights product closed the year with 5 GWh. The program fell short in reaching its filed target, however, the program launched later than planned and requires a ramp-up period. The program has a strong pipeline moving into the next year.
- **Lighting Efficiency** – The product closed the year achieving 75.7 GWh and 13,234 kW which was respectively 94 and 106 percent of filed targets. The LED Instant Rebate offering has been a strong addition to the program bringing in 36 GWh. The Company will evaluate additional products to be rebated through this channel, provided they are cost-effective and the market supports the change. Moving LED technologies from custom to prescriptive will continue to be the strategy to help manage the LED market growth.
- **Lighting – Small Business** – The product finished 2016 strong achieving 141% of its year-end electric savings target and 109% of its natural gas savings target. The LED Instant Rebate offering was very successful for the product this year and is a large contributor to the program exceeding its electric savings target. By the end of 2016 the LED Instant Rebate offering accounted for approximately 42% of the products overall savings.
- **Motor & Drive Efficiency** – The product completed 52 projects in the fourth quarter and finished the year at 12% above the achievement target. Expenditures were within budget. The product also increased the pipeline of projects in implementation for the next quarter to approximately 2 GWh. Marketing efforts continued to focus on VFDs within small businesses and office buildings. The proportion of achievement from small customers reached an all-time high of 12%. Small businesses, schools, and government buildings continued to be the strongest segments.
- **New Construction** – The product concluded the year achieving over 32 GWh of electricity savings and over 65,000 Dth between EDA and EEB. As forecasted in Q3, the product fell short of its gas target in 2016. Factors contributing to the product's shortcoming were attributed to project delays caused by the low supply of construction labor within the Colorado market. Due to the code change to ASHRAE 90.1-2013, the product will be offering increased kW incentives (\$450/kW) for projects entered in '17 and '18 to offset the expected losses for both electric achievement and customer incentives.
- **Process Efficiency** – Within the fourth quarter, two manufacturers agreed to phase-2 studies, and three more customers began expanded studies. However, actual achievement within the quarter remained weak. The product finished the year with less than half of its targeted energy savings. A lack of new enrollees from the prior year, as well as the struggling oil & gas and steel industries, continued to hamper results. We have increased our efforts to both implement projects from prior studies and acquire new participants.

- **Recommissioning** – The Recommissioning product achieved 18% of its electric energy savings target and 99% of its gas savings target at the end of the fourth quarter. Marketing efforts for the fourth quarter included a 25% bonus rebate for recommissioning measure implementation by customers, a trade-partner measure implementation incentive of up to \$1,000 per project, as well as continuing to focus on education of both trade partners and customers. With a large number of recommissioning studies currently in progress, the product continues to build a robust project pipeline for 2017 and beyond.
- **Self-Direct** – The product ended the year at 117% of the year-end electric savings target with the completion of one additional project. The product has a strong pipeline moving into the next year.

Residential Program

- **Energy Efficiency Showerheads** – The campaign launched in third quarter with over 28,000 participants receiving energy efficient showerheads and faucet aerators. The campaign focused on mostly digital marketing tactics, reducing program costs and making it quicker and easier for customers to place orders for their free offer.
- **Energy Feedback Residential** – Savings from the 102,000 new participants added earlier in the year are contributing savings to the product and savings continue to trend upward as regular home energy reports are delivered. The third-party implementer was unable to measure any statistically significant savings from the Summer Coach email campaign since only one alert was sent out. Emailed alerts are intended to raise awareness for the potential to use increased energy on very hot days. The “Winter of 68” marketing module was included in home energy reports starting in November. Customer received tips and other suggestions to help avoid higher winter bills.
- **ENERGY STAR® New Homes (ESNH)** – The product remained open throughout the year and added 1,788 new homes in the fourth quarter. Total year-end participation came in at 5,300 homes, which is the highest level of participation experienced since the product was launched. A small number of these homes were constructed in jurisdictions that have adopted the 2015 IEEC; however, expectations are this number will increase significantly in 2017. For their participation and efforts to install energy efficiency measures, builders received just over 2.9 million dollars in incentives.
- **Evaporative Cooling** – The product's fourth quarter rebates and energy savings were roughly one third higher than the same period in 2015 due to increased rebates instituted in mid-2015 to increase participation, more spending on targeted marketing efforts, especially direct customer mailings, and the introduction of online applications in late-summer. Although the product did not meet its filed 2016 targets, several improvements and increased budgets should help drive robust participation and achievement in 2017.
- **High Efficiency Air Conditioning** – The fourth quarter finished with annual achievement of 132% of the participation and kWh targets, and 164% of the kW target. This is the strongest finish in the history of this eight-year-old program. The quality installation realization rate, resulting from the 2016 M&V inspections, was also the highest achievement in the program's history.
- **Home Energy Squad** – The product had a strong finish in the fourth quarter achieving almost 40% of the total visits over the whole program year. These successes can be attributed to consistent marketing and outreach efforts and appealing promotional offers. Fourth quarter signups also gave the product a pipeline into 2017 scheduling the HES technicians through the first half of January.

- **Home Lighting & Recycling** – The Home Lighting & Recycling Product performed well in 2016 and the Company exceeded the Home Lighting annual target. The Company heavily promoted CFL products in 2016 knowing that the majority of retailers would discontinue to stock CFLs in 2017. CFLs were the least expensive efficient lighting option on the market, thus continuing to promote CFLs allowed us to reach a variety of market sectors and keep the budget low. The Company saw great success in the growth of LED products in the market during 2016. The National Electrical Manufacturers Association (NEMA) indicates a 15% increase in general service LED lamp shipments during the first three quarters of 2016. This is good news as it helps to position the Company to be successful in meeting the goal in 2017 while discontinuing CFL incentives.
- **Home Performance with ENERGY STAR® (HPwES)** – The HPwES product came short of savings and participation targets in 2016. However, the fourth quarter blanket bonus and co-marketing efforts with Boulder Energy Smart did generate a few last minute participants. In the 2017/2018 DSM filing, the product's air-sealing minimum requirement measure is lower and is realigned with the standalone insulation program as well as divided by heating and cooling type; these changes should increase participation and help incentivize trade partners to go after homes that generate deeper savings.
- **Insulation & Air Sealing** – The product exceeded all savings targets for gas and electric bringing in 213% of the kW target, 180% of the kWh target and \$172% of the Dth target. The bonus rebate encouraged participation through the end of the year and is one of the reasons the program exceeded its targets along with more targeted marketing and bundling with HVAC products.
- **Refrigerator & Freezer Recycling** – The product exceeded its savings targets in 2016, although it fell slightly short of its participation target. The Company is launching a more comprehensive marketing plan for 2017 in an effort to create more awareness and drive better participation. The plan will focus on cost-effective channels such as social media, bill inserts, and direct mail to ensure overall cost stays within the filed budget parameters.
- **Residential Heating** – Achievement in both gas and electric savings was very strong in the fourth quarter. The gas furnace bonus rebate was extended until November 30th, and helped drive additional rebates on the electric measure as well. The digital advertising campaign impact was excellent, and will be repeated in 2017.
- **School Education Kits** – During fourth quarter the Company completed delivery of the School Education Kits requested for the fall semester. 39,482 kits were shipped in 2016. The program exceeded its kWh savings target while falling slightly short of its kW and gas savings targets.
- **Water Heating** – In the fourth quarter of 2016, the electric kWh savings exceeded the target by 4%, and achieved more electric savings in 2016 than 2015. By the end of Q4, the gas Dth savings achieved nearly three times the gas savings target, achieving 5,046 Dth. Focusing on enhancing cost-effectiveness, the Company will continue to only allow low to no-cost promotional communications in 2017 for this product.

Low-Income Program

- **Energy Savings Kits** – During the fourth quarter, an email and direct mail offer was sent out to almost 30,000 income-qualified customers. 9,559 kits were shipped in 2016, falling just short of electric and natural gas savings targets. Improving installation rates continues to be a focus.
- **Multifamily Weatherization** – The Company partners with Energy Outreach Colorado (EOC) to help fund equipment retrofits and process improvements for electric and natural gas energy efficiency measures in low-income, multi-family buildings. Energy savings were realized, and

rebates paid, for twenty nine electric or gas efficiency opportunities in the fourth quarter. The product ended 2016 significantly ahead of its annual goals and the pipeline of projects in 2017 remains strong.

- **Non-Profit** –The product realized energy savings, and rebates were paid, for 30 EOC-identified gas and electric savings projects in the fourth quarter. The product exceeded its electric and natural gas savings targets in 2016, reflecting a significant, on-going need for assistance in this customer segment, and the pipeline of newly identified projects remains strong going into 2017.
- **Single-Family Weatherization (SFWx)** – The SFWx product exceeded its 2016 Dth targets and achieved more kW and kWh than it has in recent years. The fourth quarter San Luis Valley outreach ended up treating 31 homes on the weatherization waiting list through the CARE program. This not only helped customers in great need but also increased both gas and electric savings at the end of the year.

Indirect Program

- **Business Education** – In the fourth quarter of 2016, the Business Education program achieved approximately 107% of the year-end participation target and generated 425 customer leads. Participation and outreach through key community and trade association events continue to create a meaningful conversation with customers. By the end of the fourth quarter, the Company provided outreach through thirty community-based events. In addition, the program has been supported through energy efficiency messaging via the Energy Solutions newsletter, as well as a mass marketing print campaign. The combination of these initiatives continues to support DSM achievements.
- **Business Energy Analysis** – The Company offers three different types of audits: online energy assessments, on-site energy audits, and engineering assistance studies. The Company achieved 90% of its electricity participation target and 172% of its natural gas participation target at the end of the fourth quarter. Marketing efforts in 2017 may include social media, direct mail, and e-mail campaigns, as well as an on-site energy audit promotion if needed. Additional efforts continue to focus on education of both trade partners and customers. The Company continues to build a robust project pipeline for the 2017 and beyond.
- **Consumer Education** – In the fourth quarter of 2016, Consumer Education achieved approximately 118% of the year-end participation target and generated 13,491 customer leads and 1,869 program signups. Participation and outreach through key community events continues to create a meaningful opportunity to address energy efficiency with customers. By the end of fourth quarter, the Company provided outreach through 146 community-based events. In addition, the program has been supported through conservation messaging in residential newsletters and web-based channels. The combination of these initiatives continues to drive participation in DSM products.
- **Energy Efficiency Financing** – The Company has established a territory-wide residential finance offering through a partnership with LendKey and is in the process of launching the product in the first quarter 2017. Elevations Credit Union's residential energy efficiency (unsecured) loan continues to be used by residential customers in Denver and Boulder counties. A \$100 trade incentive bonus has been in place since 2015 to encourage additional participation and will continue to be available depending on participation rates. The Commercial Financing Program has launched the online process for commercial trade partners and customers to use in order to get financing proposals for their projects. In collaboration with Harcourt, Brown & Carey, the portal is available on the Xcel Energy website. Commercial customers and trade partners can enter information about their energy efficiency project resulting in 2-3 proposals for them to review to match the one that best fits their needs. Current lenders participating include:

- Ascentium Capital
 - Colorado Enterprise Fund
 - Key Bank
 - Spark Fund
 - U.S. Bank
 - Colorado Commercial Property Assessed Clean Energy (CoPACE)
- **Home Energy Audit** - The Home Energy Audit product exceeded its gas participation targets while falling slightly short on participation on the electric side. The product remained under budget on both the gas and electric budgets. Infrared audits proved to be the most popular option throughout the year, finishing with 874 total infrared audits in the fourth quarter. In 2017, the Company plans to market audits with a focus on electric participation and bundling with other products.
 - **DSM Planning & Administration** – During the fourth quarter of 2016, the Company participated in hearings associated with the 2017/2018 DSM Plan and assisted with planning for the implementation of the 2017 programs.
 - **Program Evaluations** – Evaluation reports were submitted in December 2016 and product managers are now working on reviewing recommendations and discussing changes with team leads and engineering. Look for upcoming notices on some products as changes are finalized. The RFP to select an evaluator for 2017 and 2018 is now closed and an internal team is reviewing the bids. Selection is expected in March.
 - **Measurement & Verification** – The Company's third-party verification contractor, Nexant, completed random field inspections for prescriptive products for the 2016 M&V year, with no significant variances. The resulting data will be utilized for the 2016 DSM Annual Status Report.
 - **Market Research** – The beginning of 2017 is bringing a new effort to introduce greater consistency into surveys and make sure that insights are actionable.
 - **Product Development** – Current development efforts include:
 - Partnering with the Department of Energy and Lawrence Berkeley National Laboratory on a research project to study Integrated Building Management Systems. The project tests how networked lighting controls, daylight redirecting window film, deep daylight dimming, and HVAC controls can be managed together to save energy.
 - Net zero new construction explores what additional assistance beyond Energy Design Assistance is required for customers interested in using multiple DER technologies to minimize net energy consumption.
 - Advanced roof top unit controllers that operate a VFD using advanced economizer and demand controlled ventilation.
 - Refreshing our idea list and identifying promising new energy efficiency measures and programs.
 - **Business Energy Feedback Pilot** – Business Energy Reports completed delivery to approximately 10,000 small business customers. Energy savings measurements did not show significant savings. The pilot ended at the end of 2016 and the Company plans to use learnings from the pilot for other small business opportunities for the future.
 - **Multifamily Buildings Pilot** – During the fourth quarter of 2016, the Company and the third-party implementer finalized direct install of equipment. The annual savings was about 469,000 kWh and 3,600 Dth from direct installs and smaller stage three projects.

- **Smart Thermostat Pilot – EE** – The Smart Thermostat Pilot officially ceased operations on December 31, 2016, but the Company continued managing the ongoing evaluation process. The final evaluation will address the pilot's primary research questions and offer a comprehensive review of the pilot's design and achievements. The final evaluation report is due to the Company by the end of the first quarter of 2017. Preliminary reporting shows that pilot participation exceeded 6,300 customers, a significant achievement considering marketing efforts were halted in the second quarter and the rebate was discontinued in the latter part of the third quarter. This preliminary value easily surpasses the original goal of 5,000 participants.
- **ENERGY STAR® Retail Products Platform Pilot (ESRPP)** – \$386,700 in rebates were issued to retail partners during the fourth quarter of 2016 qualified sales. Overall, the program significantly exceeded savings targets within the planned budget due to increased ENERGY STAR® product sales and lower administrative costs than anticipated. During the fourth quarter, retailers continued to feature ENERGY STAR® products in their promotions. The Company's field representatives began in-store training sessions. Plans progressed for the 2017 program, which will add washers and refrigerators to the list of qualified products.

Demand Response Program

- **Saver's Switch®** – In a challenging recruiting environment, the Company gained approximately 17,000 new program signups. These resulted in approximately 10,000 new switches deployed on residential AC units. A substantial portion of signups do not materialize into installations as customers change their minds, have ineligible equipment, etc.
- **Smart Thermostat Pilot – DR** – The Smart Thermostat Pilot officially ceased operations on December 31, 2016, but the Company continued managing the ongoing evaluation process. The final evaluation will address the pilot's primary research questions and offer a comprehensive review of the pilot's design and achievements. The final evaluation report is due to the Company by the end of the first quarter of 2017.
- **Small Business Smart Thermostat Pilot** – The Small Business Smart Thermostat Pilot officially ceased operations on December 31, 2016, but the Company continued managing the ongoing evaluation process. The final evaluation will address the pilot's primary research questions and offer a comprehensive review of the pilot's design and achievements. The final evaluation report is due to the Company by the end of the first quarter of 2017.
- **Building Optimization DR Pilot** – The Company and the third-party implementer continued activities to install the software and start base-lining (a.k.a. learning mode) the HVAC usage in the customers' buildings. The pilot is fully subscribed with 7 customers (156 buildings) signed up for a total of more than 9 MW peak demand and 2,299,953 square feet. Two buildings have been in optimization mode since the start of the year and successfully participated in demand response test events during July and August. Three other buildings are now in control mode. The remaining buildings be fully commissioned during first and second quarter 2017. Because of delays in installing the systems, the third-party implementer has offered participating customers a no-cost contract extension to ensure that a full year of testing can be completed for each building. The Company is evaluating the approach being used to determine demand response and efficiency savings for each building. While the demand response results appear promising, the Company elected not to report savings for the Pilot until the baselining and savings approach could be fully vetted.