



## 2017 Fourth Quarter Colorado DSM Roundtable Update

February 15, 2018

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 2017 (cumulative Jan. 1 – Dec. 31, 2017) product energy and demand savings achieved, product expenditures, and CO<sub>2</sub> and SO<sub>2</sub> emissions avoided. In total, Demand-Side Management ("DSM") electric products have achieved savings of approximately 416 GWh and gas savings of 634,423 Dth in the 2017 calendar year. This represents approximately 99% of the 2017 electric DSM plan's energy savings target of 421.6 GWh and 100% of the gas target of 636,078 Dth.

The following section provides product status activities for the fourth quarter of 2017 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 product exceeded both its electric and gas savings targets. Electric achievements were due largely to an industrial project closing out at mid-year, attributing a significant amount of the year-to-date energy savings. The focus for 2018 will be to increase the trade's engagement and participation. This will be done through a trade kick off meeting early in the year and through trainings and one on ones with the third-party implementer.
- **Compressed Air Efficiency** – The product did not achieve its year-end electric energy savings target. This is due in part to projects being moved to the 2018 pipeline. In 2018, the product will focus on the trade; to gain more engagement and participation, as well as gathering feedback on the product itself. This will be done through trade visits and a possible compressed air challenge later in the year.
- **Computer Efficiency** – The product has exceeded its 2017 year end target. The product has seen strong participation numbers from the prescriptive offerings and the upstream portion of the product remains steady. There was a decrease in upstream computer sales that is being monitored.
- **Cooling** – The product exceeded its year-end target. Midstream products realized a 15% growth from the previous year. Growth in the midstream product is expected to continue in 2018.
- **Custom Efficiency** – The product met its year-end target largely due to a multi-unit boiler project which yielded high gas achievement late in the fourth quarter and a bonus rebate offering. The electric savings target was not met; this is due, in part, to some electric projects being delayed to the future. The Company continues to increase outreach strategies with both Business Solutions Center and Account Managers along with increased trade partner training to engage more customers directly in an effort to grow the pipeline for electric and gas projects.
- **Data Center Efficiency** – Participation slowed during the fourth quarter and the product did not achieve its year-end savings target. Additional focus will be placed on customer projects that

were pushed into 2018 for completion. The marketing campaign, focused on the new construction offering within the product, continued into the fourth quarter and saw positive results at both the local and national levels. The campaign included both digital and print ads in data center-specific publications. A follow up campaign is planned for late in the first quarter of 2018.

- **Energy Management Systems (“EMS”)** – The EMS product did not achieve its fourth quarter expectations or its full year savings targets. Gas achievement improved compared to 2016 results, and finished the year near its target. Overall, the product remained under budget despite initial study costs related the Energy Information Systems component of the offering. The Company continues to invest in third-party Strategic Energy Manager activities and studies to support the development of the product.
- **Heating Efficiency** – Despite an additional bonus rebate offered late in the year, the product did not meet the filed year-end target. Several outreach tactics launched in third and fourth quarter intended to boost participation were successful to drive a higher participation rate. The rebate bonus proved successful, driving almost a quarter of all newly-created projects to be completed in the last month of the year. Continued informational sessions with manufacturers and distributor events, email, digital marketing, trade partner outreach and education were continued in fourth quarter to support the communication of the added bonus rebate incentive to customers. Several direct-install pipe insulations yielded a small amount of Dth savings as a new offering to customers.
- **LED Street Lights** – The LED Street Lights product closed the year retrofiting 15,742 units, did not achieve its energy savings targets.
- **Lighting Efficiency** – The product exceeded its filed targets for the year. The overall costs of LED fixtures have significantly dropped bringing prices and paybacks to an attractive simple investment. In the fourth quarter, the product right-sized the LED linear replacement lamp rebates along with some additional updates. This change brought in a surge of projects to close in 2017, a 30% increase in closed projects over last year. Overall the product remains popular and will continue to be a strong performer in 2018.
- **Lighting – Small Business** – The product exceeded its electric energy savings and natural gas savings targets. In the fourth quarter the Company launched several product updates including right-sized rebates for LED linear replacement lamps and direct linear ambient fixtures as well as new prescriptive rebates for non-DLC and non- ENERGYSTAR® qualified products at 75% of the DLC or ENERGY STAR rebate level.
- **Motor & Drive Efficiency** – The product achieved its year-end energy savings target. In 2018, the Company will conduct trade visits and trainings to increase engagement and participation and grow the pipeline for 2018.
- **Multifamily Buildings** – The Multifamily Buildings product had a successful fourth quarter. While the product did not achieve its savings targets, it over-achieved the stage one (assessment) target by 30%. This achievement will help build a strong participation pipeline for 2018. A heating bonus was offered during the fourth quarter to help close stage three gas projects and push toward the Dth targets. This bonus will continue into the first quarter of 2018 to help get a jumpstart on 2018 savings targets. The Company will continue to build participation through several channels, including: trade partners, various marketing and digital advertising campaigns and in-person event attendance.
- **New Construction** – The product did not meet its year-end savings targets due to project delays during construction and an increasing number of customers taking gas transportation service or not pursuing gas-saving strategies. While the Energy Design Assistance continues to be the primary offering within the New Construction product, the offering saw a 5% decrease in

enrollments compared to 2016. However, the Energy Efficiency Buildings offering increased its enrollments by 29% compared to 2016. Current forecasts have the product on target to meet its 2018 targets.

- **Process Efficiency** – The product did not achieve its full-year energy savings targets. It remained cost effective, as expenses were only 59% of the filed budget, and peak-coincident savings were more favorable than expected. Within the quarter, the product completed two studies and three projects. However, the projects yielded lower average savings than in prior years. The decline in average project size may indicate that the existing customers have exhausted the most impactful opportunities, while the product continues to encourage additional, incremental efficiency improvements. The Company will continue to balance its efforts to enroll new customers with a renewed focus on customer re-visits to encourage participation.
- **Recommissioning** – The product did not achieve its year-end electric or natural gas savings targets, due to limited customer implementation of identified savings measures. The product did see an increase in the number of completed studies during the fourth quarter. Follow up with the customers will be a focus for 2018 to encourage implementation of identified energy savings measures. Training of new trade partners and continued support of existing trade partners will continue in 2018. Additional opportunities to market the Small Building Tune-Up offering are in the planning phase.
- **Self-Direct** – While 2017 was the most successful year for the product, it did not achieve the year-end savings target. Existing projects are expected to be completed in 2018 and additional support will be provided to new projects in the 2018 pipeline.

### **Residential Program**

- **Energy Efficiency Showerheads** – The product surpassed its year-end gas savings target but did not meet its electric target. To enhance the offering, customers were given the option to purchase a handheld showerhead or spa style showerhead in lieu of the standard, free showerhead model. The Company has also added the option to purchase equipment “a la carte” instead of being limited to fixed kits. Purchases of non-standard showerhead models have been greater than forecast indicating a high level of interest from customers. A very successful direct mail campaign and giveaways of showerheads at events led to strong participation in the fourth quarter.
- **Energy Feedback Residential** – The product just met the year-end energy savings target and exceeded both the demand reduction and gas savings targets. The rolling enrollment process added approximately 53,000 new home energy report (“HER”) recipients in 2017 and by year-end, this group did contribute overall energy savings to the product. Total participation at year-end was about 475,000. A “heating bundle” marketing module was created and included with HERs delivered throughout the fourth quarter.
- **ENERGY STAR® New Homes (“ESNH”)** – The product exceeded its year-end targets which the Company attributes, in part, to a strong local economy. For the year, approximately 38% of all qualifying homes were built to either 2012 or 2015 IECC jurisdictions. This is an 18% increase from 2016 and a trend that is expected to continue in 2018. Six “Selling High Performance” home training sessions were completed in the fourth quarter and 27 for the year.
- **Evaporative Cooling** – The product had a strong year but finished just short of target. Targeted marketing efforts included customer mailings, mass emails, social media – advertising and promotions, contractor and retail training. Contractors and retailers continue to report flat evaporative cooling unit sales compared to 2016. The Company concluded a short-term pilot, in partnership with Lowe’s, to test the ability to provide instant rebates to customers. More than 130 units were sold through the pilot, which is considered a good result based on the time of season.

The Company will continue to evaluate the results and opportunities for expanding this channel in the future.

- **High Efficiency Air Conditioning** – The product met its energy savings and participation targets. Spending was above forecast but was in proportion with the energy savings achieved. The Quality Installation-only measure, for minimally efficient new air conditioning (“AC”) systems, increased after the customer rebate was raised from \$0 to \$100 in May, ending with 81 participants. The new ductless Mini-Split Heat Pump measure achieved only 71 participants, far below forecast. The majority of participation continues to come from the least cost effective measures with the highest rebate: new, high-efficiency AC/Air-Source Heat Pump systems with a trade-in.
- **Home Energy Squad** – The product saw a strong fourth quarter bringing in roughly 40% of the total visits for the year. With this year-end push, the product was able to achieve about half of its 2017 participation and savings targets which is a 50% increase over 2016. The Company used email campaigns and promotions through the Xcel Energy Store to promote the product during the fourth quarter helping with achievement as well as pipeline for the first quarter of 2018. The product also explored a new tactic - encouraging realtors to give the gift of Home Energy Squad to their sellers and buyers. The Company will continue to pursue this strategy in 2018.
- **Home Lighting & Recycling** – The product did not achieve its year-end energy savings target but did remain under budget. Significant achievements were made in growing the LED sales to more than 2.2 million units, which is an increase of 22% over 2016. Efforts to increase sales included tv, radio, social media, bill inserts, updated point-of-purchase displays and educational opportunities at community events.
- **Home Performance with ENERGY STAR® (“HPwES”)** – The Home Performance with ENERGY STAR product did not achieve its savings targets, but it did see a spike in participation during the fourth quarter, achieving almost 40% of the 2017 total achievement. This year-end increase in participation is a common pattern for the product when comparing against past years. The product also had five new trade partners sign up during the fourth quarter to participate and offer rebates. Since trade partners are essential to the success of this product, the Company will continue to provide training on the Home Performance product to help increase participation in 2018.
- **Insulation & Air Sealing** – The product overachieved its gas savings target but did not achieve its electric savings targets. The Company will continue to promote the product within the heating bundle during the first quarter of 2018 adding a bonus on all measures. This bonus should encourage participation and get a jumpstart on savings for the year.
- **Refrigerator & Freezer Recycling** – The product fell short of its energy savings targets for the year and spending ended the year under-budget. Marketing efforts, with a focus on driving awareness and participation, will continue into 2018. New marketing channels are being explored to drive stronger participation, including closer involvement with the Partners in Energy offering, and cross-marketing with the Home Energy Squad product and through the Xcel Energy Store.
- **Residential Heating** – The product surpassed expectations for electronically commutated motors and 95% AFUE furnace related forecasts. Furnace rebates increased from \$120 to \$300 in the third quarter, and a bonus rebate of \$450 in the fourth quarter was highly successful at achieving more participation and dekatherm savings. The budget was exceeded, as a result of the increased and bonus rebates.
- **School Education Kits** – The product exceeded its electric and gas savings targets due to an increase in installation rates for participating customers. 38,633 kits were shipped to customers within the combined electric and gas service territories, with an additional 1,033 kits shipped to

gas-only territory in an effort to drive additional gas savings. Higher installation rates can be attributed to replacing CFL bulbs in the kits with all LED light bulbs, as well as revising the customer survey instrument to account for customers who were unable to install their measures immediately but planned to do so in the near future.

- **Water Heating** – The product exceeded both electric and natural gas savings targets. The electric product remained within the budget, while gas exceeded budget in line with additional saving, overspending in the rebate category. Focus continues to be updating assumptions due to changing efficiency standards from Energy Factor to Uniform Energy Factor. Improving cost effectiveness remains a priority, keeping low- to no-cost marketing along with exploration of additional product delivery methods.

### **Low-Income Program**

- **Energy Savings Kits** – The product exceeded its electric and gas savings targets due to improved installation rates and all kits requested in 2017 were shipped to customers.
- **Multifamily Weatherization** – The product exceeded its electric and natural gas savings targets. Partnership 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 continues to deliver strong results.
- **Non-Profit** – The product exceeded its electric and natural gas savings targets. The Company and EOC conducted a continuous process review to help streamline cost effectiveness analyses and to accommodate conditions that exist in older non-profit and multi-family facilities, such as boiler baseline performance degradation.
- **Single-Family Weatherization (“SFWx”)** – The Single Family Weatherization product finished the fourth quarter overachieving all savings targets. This achievement came in through multiple weatherization agencies participating in the Weatherization Assistance Program as well as the Colorado Affordable Residential Energy program.

### **Indirect Program**

- **Business Education** – In the fourth quarter of 2017, the Business Education product achieved approximately 101% of the year-end participation target and generated 264 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 25 community-based events. In addition, the product 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** – Marketing efforts in 2018 continue to 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. 2017 goals were met with customer participation being encouraged through multiple promotions. Momentum has been carried through to 2018 from a two day \$48 sale in November that has audits booked through the end of February. More promotions are being planned, which include a mailer to encourage buildings 25,000-50,000 square feet to meet their deadline of June 1, 2018 for the City of Denver Benchmarking Ordinance. Currently, the product is forecasting to be slightly under target; however, the Company expects to see strong participation numbers for the remainder of 2018 as a result of increased promotional efforts with the City of Denver Benchmarking Ordinance deadline in June and other promotions planned for each quarter.

- **Consumer Education** – In the fourth quarter of 2017, Consumer Education achieved approximately 113% of the year-end participation target and generated 3,670 customer leads with 450 signups. Participation and outreach through key community events continues to create a meaningful opportunity to address energy efficiency with customers. By the end of the fourth quarter, the Company provided outreach through 90 community-based events. In addition, the product 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 launched a territory-wide residential finance offering through a partnership with LendKey and is working with the Colorado Energy Office to expand the Elevations Credit Union loan offering territory-wide. Several trade partners have signed up to offer the LendKey product to customers, but no loans have been made to-date. Elevations Credit Union's residential energy efficiency loan continues to be used by residential customers in Denver and Boulder counties. The Company is now including a financing message in its marketing efforts for other relevant residential products and bundled campaigns. On the commercial side, the Company has scheduled financing webinars for trade partners in March & April. Monthly reports show increased interest in financing proposal requests including support to 38 projects (either a phone inquiry, a financing project estimate, or financing project approval), resulting in three projects qualifying for financing in the \$6,000 - \$133,000 range. The Company has finalized a trade partner workshop for June 7<sup>th</sup> at PPA Event Center. The title is: "Influencing Energy Efficiency Upgrades - Tips, Tools, and Techniques for Selling an Efficiency Project". One of the tools will be highlighted at the workshop is the commercial financing offering.
- **Home Energy Audit** - The product saw an increase in participation during the fourth quarter. This increase brought the product to 99% of its gas participation target and 67% of the electric participation target. In the middle of the fourth quarter, the Company put together a general awareness email campaign to customers throughout the service territory. This campaign generated several phone calls to the Home Energy Advisor and aligns with the spike in participation during the fourth quarter. The Company plans to continue similar awareness campaigns throughout 2018 along with bundle campaigns to cross-promote the various products within the residential portfolio.
- **Energy Benchmarking** - The Company supports municipalities within its service territory to reach their benchmarking goals. During the fourth quarter, 245 new participant buildings were added. This brings the total Colorado building count to 2,155, an increase of 1,680 buildings in 2017.
- **DSM Planning & Administration** – The Company continued to respond to discovery in the ongoing Strategic Issues proceeding and began to develop its rebuttal case.
- **Program Evaluations** – DSM evaluations for 2017 were completed in the fourth quarter with final review occurring through the last week of the year. Work kicked off for the 2018 Home Lighting and Lighting Efficiency evaluations in the middle of the fourth quarter.
- **Measurement & Verification** – The Company's third-party verification contractor, Nexant, completed random field inspections for prescriptive products for the 2017 M&V year, with no significant variances. The resulting data will be utilized for the 2017 DSM Annual Status Report.
- **Market Research** – Business and residential segmentation has progressed substantially during the quarter, aiding in the identification of DSM opportunities. Residential segment updates are now obtained regularly from Informatica, whom the Company also uses for address validation. Updated business segment data was purchased and received from Dun and Bradstreet for inclusion in Salesforce, a process that was implemented in the fourth quarter. Finally, preliminary

work for the 2018 Home Use Survey has commenced, with research activities expected in the second quarter of 2018.

- **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. Results were positive with over 90% savings over traditional zonal T8 systems. The Company has added this offer through Business New Construction.
  - Offer a prescriptive rebate for advanced lighting controls for retrofits or new construction in medium-sized office buildings and warehouse/storage facilities with high-volume, predictable application. LED-networked and integrated wireless luminaries layer daylight harvesting, occupancy sensing, and high-end trimming control strategies with out-of-the-box functionality and no need for additional manufacturer support or a special server. A one-time one-button commissioning is used to set light fixtures.
  - Advanced Energy Communities are district-scale development projects that have aggressive energy goals and include multiple energy systems (energy efficiency, demand response, advanced grid, renewable energy, storage, and electric vehicles). The Company is looking into product designs that can help meet the needs of these projects.
  - Advanced roof top unit controllers that operate a variable frequency drive using advanced economizer and demand-controlled ventilation.
  - Offer a rebate via upstream product leveraging current partners for variable refrigerant flow heat pump systems that can deliver up to 40 percent energy savings above minimum codes.
  - Offer a mid-stream rebate to distributors of commercial ozone laundry systems, and partner with the Denver Water Board and the City of Fort Collins who also offer water saving rebates.
  - Testing residential batteries to provide demand response.
- **Thermostat Optimization Pilot** – Interim pilot results indicated potential for both energy savings and demand reduction when the optimization algorithms are active. The Tendril Orchestrated Energy pilot with ecobee thermostats had HVAC runtime reductions on treatment days compared to control days. The small pilot group (less than 100 participants) limits the statistical usefulness of these results. Other fourth quarter activities included contracting and preparing for launch of the Nest Seasonal Savings optimization program to approximately 12,500 existing Nest customers. The Seasonal Savings recruitment and learning launched in early January 2018.
- **ENERGY STAR® Retail Products Platform Pilot** – Due to higher than forecasted sales from Nationwide, primarily driven by high-efficiency clothes washers, the incentive budget was fully expended in the third quarter. Marketing activities at all of the retailers continued to take place in fourth quarter.

### **Demand Response Program**

- **Residential Demand Response** – The Company wrapped up a challenging year in which customer signup rates were below expectations. Just under 6,000 Saver's Switches were deployed during the year, including about 1,500 in the fourth quarter. In the second quarter, the company launched the new AC Rewards product utilizing smart communicating thermostats for peak load reduction. The rollout has been slower than anticipated with a little more than 1,000 participants enrolled during the year.
- **Building Optimization DR Pilot** – Pilot testing concluded in 2017. The Company is evaluating results and developing recommendations for the future of this approach to demand response.

Limited data is available due to delays in installing and operating the software platform in all of the pilot building, so no savings were claimed for the pilot. The limited testing results did identify a number of opportunities to improve the load reduction that will be considered when evaluating future opportunities for this approach.

- **Critical Peak Pricing Pilot** – As of the end of fourth quarter, there were seven participants enrolled in the Critical Peak Pricing pilot product with the potential of 2.989 MW of controllable load. Several customer presentations were given to potential customers, possibly interested in joining the product in 2018.
- **Peak Partner Rewards** – Through the fourth quarter, the product had enrolled 12.5 MW of new load. Efforts in the fourth quarter focused on enrolling new customers. Marketing campaigns included email, direct mail, and bill inserts to all eligible customers. Thanks in large part to 2017's marketing campaigns, the 2018 pipeline is looking good and we anticipate adding new customers in 2018.