Q2-2016 Colorado DSM Roundtable

August 17, 2016
AGENDA

• 1:00 – 1:30 p.m. Welcome and DSM Regulatory Updates
• 1:30 – 2:15 p.m. DSM Programs: Q2-2016
  » Q2 Achievement Update
  » Business Programs
  » Business Financing Deep Dive
  » Lighting Efficiency and Small Business Lighting Update
  » Residential and Low-Income Programs
• 2:15 – 2:30 p.m. -- Networking Break --
• 2:30 – 3:00 p.m. DSM Pilot Updates: Q2-2016
• 3:00 – 3:30 p.m. DSM Product Development: Q2-2016
• 3:30 – 4:00 p.m. DSM Product Express Update: Q2-2016
60/90-Day Notices

• ENERGY STAR Retail Products Platform (ESRPP) Pilot
  • Posted: Dec. 2, 2015
  • Implemented: Jan. 1, 2016

• Home Lighting & Recycling
  • Posted: Jan. 6, 2016

• ECMs
  • Posted: Jan. 13, 2016
  • Implemented: Feb. 13, 2016

• LED Street Lights
  • Posted: Feb. 2, 2016
  • Implemented: April 1, 2016

• Data Center Efficiency
  • Posted: Feb. 15, 2016
  • Implemented: Mar. 16, 2016

• Home Lighting & Recycling (Evaluation)
  • Posted: Feb. 5, 2016
  • Implemented: April 6, 2016

• Business Lighting Efficiency (Evaluation)
  • Posted: February 19, 2016
  • Implemented: March 22, 2016

• Business Lighting Efficiency and Small Business Lighting
  • Posted: May 26, 2016
  • Implemented: August 1, 2016
## 2017/2018 DSM Plan Forecast & Targets

<table>
<thead>
<tr>
<th></th>
<th>GWh Savings</th>
<th>Demand Response (MW)</th>
<th>Demand Reduction from EE (MW)</th>
<th>Electric MTRC</th>
<th>Dth Savings</th>
<th>Natural Gas MTRC</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Goal</strong></td>
<td>400.0</td>
<td>620</td>
<td>65.0</td>
<td>&gt;1.0</td>
<td>n/a</td>
<td>&gt;1.0</td>
</tr>
<tr>
<td><strong>Plan Target</strong></td>
<td>401.3</td>
<td>621</td>
<td>59.4</td>
<td>1.26</td>
<td>636,078</td>
<td>1.49</td>
</tr>
</tbody>
</table>

*2017 Budget Proposed: $80.3 M (Elect EE), $19.2 M (DR), $13.1 M (Gas EE)*

<table>
<thead>
<tr>
<th></th>
<th>GWh Savings</th>
<th>Demand Response (MW)</th>
<th>Demand Reduction from EE (MW)</th>
<th>MTRC</th>
<th>Dth Savings</th>
<th>Natural Gas MTRC</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Goal</strong></td>
<td>400</td>
<td>640</td>
<td>65</td>
<td>&gt;1.0</td>
<td>n/a</td>
<td>&gt;1.0</td>
</tr>
<tr>
<td><strong>Plan Target</strong></td>
<td>401.6</td>
<td>646</td>
<td>57.9</td>
<td>1.31</td>
<td>573,136</td>
<td>1.58</td>
</tr>
</tbody>
</table>

*2018 Budget Proposed: $77.7 M (Elect EE), $20.6 M (DR), $12.8 M (Gas EE)*
DSM Regulatory Update (Con’t.)

• 2017/2018 Plan 210-Day Decision
  – March 24, 2017

• Next Roundtable – Save the Date!
  – Q3-2016 DSM Roundtable Meeting:
    Wednesday, November 9, 2016
DSM Achievements
Q2-2016

David Hueser,
Team Lead, Customer Solutions
2016 Q2 Achievement Highlights

Electric Portfolio
- 194 GWh (48% of 407 GWh Goal)
- 33.8 MW (38% of Target)
- $36.3M (39% of Budget)

Business Programs (% of kWh Target)
- EMS – 79% of Target
- Small Business Lighting– 73% of Target
- Motors & Drive Efficiency – 53% of Target
- Self Direct – 67% of Target

Residential / LI Programs (% of kWh Target)
- ENERGY STAR New Homes – 65% of Target
- Home Lighting & Recycling – 87% of Target
- Residential Heating – 66% of Target

Gas Portfolio
- 213,868 Net Dth (35% of 615,040 Dth Goal)
- $5.9M Spend (43% of Budget)

Business Programs (% of Dth Target)
- Custom Efficiency – 92% of Target
- EMS – 63% of Target
- Recommissioning – 60% of Target

Residential / LI Programs (% of Dth Target)
- Energy Feedback Residential – 58% of Target
- Insulation & Air Sealing – 70% of Target
- Water Heating – 147% of Target
- LI Multifamily Weatherization – 52% of Target
Marketing Campaigns & Outreach

Business

- Heating Efficiency customer bonus, trade incentive extended to 12/31
- Recommissioning customer implementation bonus, trade incentive
- Data Centers: re-engaging study providers
- Brewers Campaign: refrigeration, process packaging, compressed air
- Energy Analysis Earth Day promotion
- CAHED Trade Show, Sport’s Authority Field
- Apartment Association Trade Show
- CD Jones Open House
- Energy Expo and Wire-Off Competition

Residential

- ENERGY STAR New Homes: continued, free “Selling High Performance” training classes for sales agents and home raters.
- Home Lighting: 17 May and June events including Rockies promotion 6/28
- Energy Efficiency Showerhead spring mailings and digital campaigns
- Evaporative Cooling customer benefits, technical training, trade overview
- Home Energy Squad email, social media outreach, LED and discount promotions
- Saver’s Switch spring ramp up, digital campaigns
DSM Business Program
Q2-2016 Highlights

Kim Spickard
Team Lead, Customer Solutions
Heating Efficiency Outreach

- Customer bonus (25%) & trade incentive (10%) until year end
- Promoting new customer Heating Efficiency Guide
- Specifically targeting top gas consuming customers
- Planning 2 fall trainings:
  - Technical Training for Trade Partners
  - Customer Heating Efficiency Best Practices
- Continuing collaboration w/CO State Boiler Inspectors Office
  - Mutual customer benefits for rebates & boiler safety
  - Direct outreach to their trade partner network
- Now seeing participation in ECMs for furnace fans (new measure launched late 2015)
Digital Application Project Launched

Rebate Application

Step 1 of 6

Program Information

State: [--None--]

Are you a Customer or Trade Partner?: [--None--]

Product: [--None--]

Customer Type: [--None--]

Equipment Group: [--None--]
Platte River Power Authority

Colorado Midstream Cooling Program
The midstream Cooling Program encourages distributors to stock and upsell eligible high efficiency equipment

Participating Utilities

Xcel Energy
Efficiency Works

Estes Park Light and Power
Fort Collins Utilities
Longmont Power & Communications
Loveland Water and Power
Platte River Power Authority
Colorado Midstream

Estes Park
Light and Power

Fort Collins
Utilities

Longmont
Power &
Communications

Loveland
Water and Power

Platte River
Power Authority

Efficiency Works™
Business Financing Program

Bob Macauley
Channel Manager, Customer Solutions
Energy Efficiency Commercial Financing

• Xcel Energy knows that our business customers may need assistance in finding the right source of capital to invest in energy efficiency upgrades.
• Customer feedback has shown that finding the right source of financing for their business has been tricky.
• Xcel Energy has partnered with HBC Energy Capital to provide commercial customers and trade partners a one-stop shopping on-line portal for all their energy efficiency financing needs.
• The portal will provide financing proposals from a variety of Xcel Energy approved lenders to ensure that customers have access to the most appropriate financing from the lender that best suits their specific project.
Energy Efficiency Commercial Financing

• The Financing Process:
  – Customers or Trade Partners fill out the Finance Request Form found online at XcelEnergy.com.
  – HBC will develop a customized cash flow analysis to help customers understand what it takes to make their energy efficiency upgrades a reality.
  – HBC can answer any questions customers may have, revise their financing proposal if the project scope changes, and work with the various lenders to present multiple financing options so customers can pick the one that best meets their needs.
Energy Efficiency Commercial Financing

• Xcel Energy Approved Lenders:
  – We will review customer’s project and provide at least two lender options.
• Proposals will come from:
  – Ascentium Capital
  – Colorado Enterprise Fund
  – Key Bank
  – Spark Fund
  – U.S. Bank
  – Colorado Commercial Property Assessed Clean Energy (CoPACE)
SAMPLE Financing Proposal
Prepared for: Xcel Energy Trade Partner

Project summary
Trade Partner has engaged HBC Energy Capital to procure low cost financing for your project. The figures on this sheet explain the payments and savings calculated specifically for your project. Choose the term that best suits your needs and we will reach out with a 1-page application for financing approval.
Please note: proposal amounts are subject to credit review; interest rates and final payment amounts may vary.

$ Financing metrics

<table>
<thead>
<tr>
<th>Project Cost</th>
<th>Rebate</th>
<th>Net Financed</th>
<th>Estimated Interest Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>$10,000</td>
<td>$1,200</td>
<td>$8,800</td>
<td>6.00%</td>
</tr>
</tbody>
</table>

Project savings metrics*

<table>
<thead>
<tr>
<th>Term</th>
<th>Monthly savings</th>
<th>Monthly payment</th>
<th>Net monthly cash flow</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 years</td>
<td>$217</td>
<td>$268</td>
<td>-$51</td>
</tr>
<tr>
<td>4 years</td>
<td>$217</td>
<td>$207</td>
<td>$10</td>
</tr>
<tr>
<td>5 years</td>
<td>$217</td>
<td>$170</td>
<td>$47</td>
</tr>
</tbody>
</table>

Next steps

- Step 1  [ ] Review financing proposal
- Step 2  [ ] Fill out the financing application from an Xcel Energy approved finance partner. Return application to jeremy.epstein@harcourtbrown.com
- Step 3  [ ] Receive notification of financing approval and begin equipment installation

*Monthly payment estimate is based on financing the total project cost minus rebates (may require assignment of rebate to finance company). Longer terms may be available to some borrowers.
Energy Efficiency Commercial Financing

• Business financing can cover up to 100 percent of your customer’s project costs.
• Xcel Energy rebates can be used in conjunction with business financing.
• Customer approvals are quick and typically received within one business day.
• We expect the commercial financing portal to be fully operational by 9/1/16.
• For more information contact:
  – Robert.Macauley@XcelEnergy.com
  – 303-294-2675
Business Lighting Efficiency & Small Business Lighting Programs

Paige Romero
Program Manager, Customer Solutions
Business LED Instant Rebate Program
Includes both Lighting Efficiency & Small Business Lighting achievements

CO 2016 forecast gross GWh by month

<table>
<thead>
<tr>
<th>Month</th>
<th>Completed</th>
<th>Forecasted</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>3.59</td>
<td>3.59</td>
</tr>
<tr>
<td>February</td>
<td>4.29</td>
<td>4.29</td>
</tr>
<tr>
<td>March</td>
<td>3.29</td>
<td>3.29</td>
</tr>
<tr>
<td>April</td>
<td>3.50</td>
<td>3.50</td>
</tr>
<tr>
<td>May</td>
<td>1.91</td>
<td>1.91</td>
</tr>
<tr>
<td>June</td>
<td>2.39</td>
<td>2.69</td>
</tr>
<tr>
<td>July</td>
<td>3.74</td>
<td>4.20</td>
</tr>
<tr>
<td>August</td>
<td>4.62</td>
<td></td>
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</tbody>
</table>

2016 cumulative gross GWh forecast

<table>
<thead>
<tr>
<th>Month</th>
<th>Completed</th>
<th>Forecasted</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>3.59</td>
<td>8.41</td>
</tr>
<tr>
<td>February</td>
<td>4.17</td>
<td>15.98</td>
</tr>
<tr>
<td>March</td>
<td>11.69</td>
<td>20.00</td>
</tr>
<tr>
<td>April</td>
<td>15.98</td>
<td>23.60</td>
</tr>
<tr>
<td>May</td>
<td>20.00</td>
<td>25.42</td>
</tr>
<tr>
<td>June</td>
<td>23.60</td>
<td>30.50</td>
</tr>
<tr>
<td>July</td>
<td>25.42</td>
<td>34.24</td>
</tr>
<tr>
<td>August</td>
<td>30.50</td>
<td>38.44</td>
</tr>
<tr>
<td>September</td>
<td></td>
<td></td>
</tr>
<tr>
<td>October</td>
<td>34.24</td>
<td></td>
</tr>
<tr>
<td>November</td>
<td></td>
<td>43.06</td>
</tr>
<tr>
<td>December</td>
<td></td>
<td></td>
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</tbody>
</table>

Total Goal 43 GWh
LED Instant Rebate by Lamp Type

Units by Lamp Type

Achievement by Lamp Type

YTD Midstream LED Sales - CO

<table>
<thead>
<tr>
<th>Bulb Category</th>
<th>Sum of Total Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Lamps</td>
<td>134,762</td>
</tr>
<tr>
<td>All GU Bases</td>
<td>29,002</td>
</tr>
<tr>
<td>BR/R30</td>
<td>35,138</td>
</tr>
<tr>
<td>BR/R40</td>
<td>5,373</td>
</tr>
<tr>
<td>Decorative</td>
<td>18,610</td>
</tr>
<tr>
<td>MR/X16 MR25</td>
<td>252</td>
</tr>
<tr>
<td>PAR/R20</td>
<td>10,020</td>
</tr>
<tr>
<td>PAR 16</td>
<td>739</td>
</tr>
<tr>
<td>PAR30</td>
<td>22,379</td>
</tr>
<tr>
<td>PAR 38</td>
<td>43,453</td>
</tr>
<tr>
<td>Retrofit Kits</td>
<td>7,150</td>
</tr>
</tbody>
</table>

YTD Midstream LED kWh Savings - CO

<table>
<thead>
<tr>
<th>Bulb Category</th>
<th>Sum of kWh Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Lamps</td>
<td>6,281,879.99</td>
</tr>
<tr>
<td>All GU Bases</td>
<td>2,173,327.91</td>
</tr>
<tr>
<td>BR/R30</td>
<td>3,643,130.35</td>
</tr>
<tr>
<td>BR/R40</td>
<td>796,574.64</td>
</tr>
<tr>
<td>Decorative</td>
<td>1,817,161.23</td>
</tr>
<tr>
<td>MR/X16 MR25</td>
<td>30,083.43</td>
</tr>
<tr>
<td>PAR/R20</td>
<td>621,381.57</td>
</tr>
<tr>
<td>PAR 16</td>
<td>50,433.68</td>
</tr>
<tr>
<td>PAR30</td>
<td>2,735,399.45</td>
</tr>
<tr>
<td>PAR 38</td>
<td>6,731,680.65</td>
</tr>
<tr>
<td>Retrofit Kits</td>
<td>537,673.67</td>
</tr>
</tbody>
</table>

Total quantity YTD for all batched and paid projects

kWh savings YTD from all batched and paid projects
Program Additions:
1) LED Pin-Based Lamps
2) LED UL Type B Linear Replacement Lamps (tubes)
3) T12 to LED rebate offering
4) 3 additional LED Lamp categories added to direct install offering

T12 to LED Limited Time Rebate Promotion:
• 2015 Colorado Lighting Market Study findings revealed:
  Overall saturations of T12 lighting technologies largely unchanged since 2005, although 7 of 10 sampled program participants had no T12s.
• A limited time T12 to LED rebate offering has been developed and proposed to launch August 1, 2016, closing December 31, 2018.
## T12 to LED Limited Time Rebate Promotion

Rebates available for upgrading T12 systems to LEDs (August 1, 2016 through December 31, 2018)

<table>
<thead>
<tr>
<th>LED upgrade product</th>
<th>Rebate</th>
</tr>
</thead>
<tbody>
<tr>
<td>LED troffer</td>
<td>$70/fixture</td>
</tr>
<tr>
<td>LED troffer retrofit kit</td>
<td>$50/fixture</td>
</tr>
<tr>
<td>LED tube Type A, 4 foot</td>
<td>$10/tube</td>
</tr>
<tr>
<td>LED tube Type B, 4 foot</td>
<td>$10/tube</td>
</tr>
<tr>
<td>LED tube Type C, 4 foot</td>
<td>$18/tube</td>
</tr>
<tr>
<td>LEDs in refrigerator and freezer cases (5’ or 6’ doors) with LEDs</td>
<td>$55/door</td>
</tr>
<tr>
<td>LED linear ambient ≤ 35W (direct only)</td>
<td>$80/fixture</td>
</tr>
<tr>
<td>LED linear ambient 36–60W (direct only)</td>
<td>$120/fixture</td>
</tr>
<tr>
<td>LED linear ambient ≥ 61W (direct only)</td>
<td>$175/fixture</td>
</tr>
</tbody>
</table>
DSM Residential & Low-Income Program
Q2-2016 Highlights

David Hueser,
Team Lead, Customer Solutions
# 2017/2018 DSM Plan change and additions: Residential, Low Income, Electric & Natural Gas savings Products

**Primary segment goal:** continue to drive residential penetration through new customer participation

<table>
<thead>
<tr>
<th>Residential/Low Income Product</th>
<th>Product changes or Measures added</th>
<th>Measures eliminated</th>
<th>Next Steps</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENERGY STAR New Homes</td>
<td>Increased rebate levels to $250 - $2,550 for achieving 10%+ better than code (BTC) energy savings for 2012 IECC or higher homes</td>
<td>ENERGY STAR Dishwasher</td>
<td>Evaluating training opportunities for joint Net-Zero-Energy (NZE) builders and architects. Exercise Gas DSM spending discretion to meet portfolio goals.</td>
</tr>
<tr>
<td>High Efficiency Air Conditioning</td>
<td>Ductless Mini-Split Heat Pumps, 15 SEER or higher, AHRI Certified, used for cooling and heating, $200 rebate</td>
<td></td>
<td>On-going trade partner Product training and communications</td>
</tr>
<tr>
<td>Home Energy Squad</td>
<td>Value LEDs included in core service*</td>
<td></td>
<td>Partners in Energy opportunities</td>
</tr>
<tr>
<td>Home Lighting</td>
<td>LED changes per ENERGY STAR specifications – 15,000 life, no more dimming and omni-directional light distribution</td>
<td>Discontinue support of CFLs beginning in 2018</td>
<td>Continue primarily retail Point Of Sale (POS) strategy with WECC/Wisconsin Energy Conservation Corp.</td>
</tr>
<tr>
<td>Insulation and Air Sealing</td>
<td>Increased minimum savings requirement – 20% and 30%+ savings tiers</td>
<td>“Tier 1” 10% savings</td>
<td>Trade partner training, communications</td>
</tr>
<tr>
<td>School Education Kits</td>
<td>LED-only lamp mix</td>
<td>CFLs</td>
<td>Volume orders by Third Party Implementer, kit building for 2017</td>
</tr>
<tr>
<td>Low Income Single Family Weatherization</td>
<td>Select LED lamps*, Programmable thermostat, ECM furnace motors*, Water Heater blankets</td>
<td></td>
<td>With Energy Outreach Colorado, evaluating the potential addition of other prescriptive rebates</td>
</tr>
</tbody>
</table>

* Added via 60-Day Notice Product modification in 2016
ENERGY STAR® New Homes (E&G savings)

We expect to keep the product open for full year in 2016

- Q2 2016 achievement remains strong:
  - 2,128 homes earned a rebate (51% of filed goal)
  - 1,982,950 net gen kWh (65% of filed goal)
  - 61,752 net Dth (49% of filed goal)
- 5 out of 6 months exceeded 400 homes per month
  - First time this has occurred
- First home to complete under 2015 IECC (Parker, CO)
- Ongoing training targeted to sales agents and home raters
ENERGY STAR® New Homes (E&G savings)

Proposed Changes for 2017/18

• Rebate determined using local energy code
  – IECC 2009 and older - $200 to $1,400
  – IECC 2012 and newer - $250 to $2,550

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>10.0-14.999%</td>
<td>$200</td>
<td>$250</td>
</tr>
<tr>
<td>15.0-19.999%</td>
<td>$350</td>
<td>$400</td>
</tr>
<tr>
<td>20.0-24.999%</td>
<td>$500</td>
<td>$600</td>
</tr>
<tr>
<td>25.0-29.999%</td>
<td>$650</td>
<td>$900</td>
</tr>
<tr>
<td>30.0-34.999%</td>
<td>$800</td>
<td>$1,200</td>
</tr>
<tr>
<td>35.0-39.999%</td>
<td>$1,000</td>
<td>$2,000</td>
</tr>
<tr>
<td>40% and higher</td>
<td>$1,400</td>
<td>$2,550</td>
</tr>
</tbody>
</table>

• High Efficiency Lighting rebate changes
  – IECC 2009 and older jurisdictions ($20 rebate), must install at least 20 CFL or LED lamps
  – IECC 2012 and newer ($10 rebate), must install 100% CFL or LED lamps

• ES Clothes Washer rebate - reduced from $50 to $30
• ES Dishwasher rebate discontinued
Residential Home Performance with ENERGY STAR®

YTD Q2 2016 Achievement: Dth and kW savings ahead of 2015 pace, but kWh trails so far.

<table>
<thead>
<tr>
<th>Year</th>
<th>kW</th>
<th>kWh</th>
<th>Dth</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>49.17</td>
<td>153,549</td>
<td>4,122</td>
</tr>
<tr>
<td>2016</td>
<td>66.17</td>
<td>63,735</td>
<td>5,004</td>
</tr>
</tbody>
</table>

Q2 incentives and improvements include bonuses and co-marketing
- High Efficiency Furnace bonus: $200 through Nov. 15th.
- $250 Insulation Bonus on attic or wall insulation when 25%+ air-sealing reduction is achieved.
- Denver Energy Challenge HP awareness mailer.
- Boulder Energy Smart marketing mailer with bonus rebate offering.

Main Proposed Changes for 2017/2018
- Align air-sealing measure with Insulation and Air Sealing Product
- Terminate CFL and Dishwasher measures

<table>
<thead>
<tr>
<th>Measure</th>
<th>Prescriptive Rebates</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Top 3 Improvements</strong>*</td>
<td>Gas Heat/AC Cooled</td>
</tr>
<tr>
<td>Attic Insulation</td>
<td>$600</td>
</tr>
<tr>
<td>Air Sealing, Weather-Stripping Top Tier</td>
<td>$500</td>
</tr>
<tr>
<td>Air Sealing, Weather-Stripping Bottom Tier</td>
<td>$400</td>
</tr>
</tbody>
</table>

* Recommended in customer’s audit
Evaporative Cooling (Electric savings)

Positive 2016 effect from 2015 rebate increases, especially Standard/Tier 1 systems

- YTD Q2 electric DSM savings 21% of 2016 goal on 31% of spend. Mid-year 2016 participation increased by over 40% vs. prior year driven by Standard/Tier 1 systems, generally window- or wall-mounted units
- Q2 trade partner training, including “big 3” manufacturers representatives, focused on customer benefits, sizing, ducting, technical basics
- Outreach and marketing efforts focused on targeted mailings, email, trade relations – especially Western Slope
- Product is not expected to achieve its 2016 filed goals, but year-over-year participation is expected to significantly improve

Most popular-selling units from “big 3” manufacturers

- Champion/Mastercool 4001DD
- PMI Brisa BD4000
- Breezair EXV155

Home Depot

- Bonaire/Durango 4500E
- Hart/Cooley
Low-Income Single Family Weatherization (E&G)

Primarily aimed at natural gas savings for low income, single-family homes, the Product represents $3.6M, or 57% of the $6.4M total electric & gas budget dedicated to low income

• In Q2, eight weatherization agencies participating in the Product
• Colorado’s Affordable Residential Energy program/CARE (Summit County/High Country Conservation) expanded to Metro Denver, where EOC partners with Energy Resource Center
• 2016 contingency plans to drive additional electric savings focus on refrigerator replacement, lighting
• 2017/18 Product changes/additions: LED lamps, ECM furnace motors, Programmable Thermostat, Water Heater blankets
• For 2017/18, with Energy Outreach Colorado, evaluating the potential addition of other prescriptive rebates
- Networking Break -
DSM Pilot Updates
Q2-2016 Highlights

Colin Lamb
Team Lead, Product Development
<table>
<thead>
<tr>
<th>PILOT</th>
<th>STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Smart Thermostat Pilot</td>
<td>In Progress</td>
</tr>
<tr>
<td>2 Small Business Smart Thermostat Pilot</td>
<td>In Progress</td>
</tr>
<tr>
<td>3 Energy Feedback – Business Pilot</td>
<td>In Progress</td>
</tr>
<tr>
<td>4 Building Optimization DR Pilot</td>
<td>In Progress</td>
</tr>
<tr>
<td>5 Multifamily Buildings Pilot</td>
<td>In Progress</td>
</tr>
<tr>
<td>6 ENERGY STAR Retail Products Platform</td>
<td>In Progress</td>
</tr>
</tbody>
</table>
DSM Pilot Highlights
Residential Smart Thermostat

- Fully subscribed (5,000 participant target)
- Nearly 60% to date used online storefront with instant rebate
- Began DR events June 21
DSM Pilot Highlights
Small Business Smart Thermostat

• Nearly fully subscribed
• Technical challenges delayed installation
• Preparing to implement DR events in Q3

Honeywell
DSM Pilot Highlights
Energy Feedback – Business

• Latest measurement continued to show negligible savings

• Clear that customers are engaged with reports

• Pilot runs through 2016

• Actively exploring next steps
DSM Pilot Highlights
Building Optimization DR

• 1.8 million square feet enrolled
• 15 buildings totaling > 7.6 MW peak demand
• Final building in process; will complete enrollment
  • total 16 buildings, 2.5 million square feet
  • > 9MW peak demand
• Planning first demand response events for Q3
  (successfully executed on July 21)
• Plan to pilot through 2017
DSM Pilot Highlights
Multifamily Buildings

• Current Results:
  • 29 energy assessments completed YTD, 39 total
  • Direct installation of energy efficient equipment at 969 apartments YTD
  • New goal of 1,800 units to be met in Q3
  • Phase 3 projects identified and being evaluated
DSM Pilot Highlights
ESRPP PILOT

Energy Star Retail Products Platform (ESRPP) Pilot

- Reporting and data challenges persist; expect to be resolved in Q3

- Retailer support plans complete

- Engaging with national working groups
  - New products working group
  - EM&V working group
DSM Product Development
Q2-2016 Highlights

Thor Bjork
Team Lead, DSM Product Development
DSM Product Development

“Beyond Widgets” Research project with DOE’s Lawrence Berkeley National Laboratory

- Networked lighting controls
- Daylight redirecting window film
- Deep daylight dimming
- HVAC controls

Schedule:
- 3/15 – 12/15: Systems research
- 1/16 – 7/16: Experiment design
- 8/16 – 6/17: Testing at FLEXLAB
- 7/17 – 9/17: Results and program implementation
DSM Product Development

Net Zero Energy New Construction

• Growing number of customers striving to minimize net energy consumption, with strategies across multiple DER technologies

• Requires additional assistance beyond Energy Design Assistance
  • Earlier consulting and energy modeling
  • Enhanced monitoring and verification

• Focus is to enable a streamlined, cost-effective approach to serving these projects

To Create a Zero Energy Building...

STEP 1: Increase energy efficiency
- Efficient building construction
- Efficient systems and appliances
- Operations and maintenance
- Change in user behavior

STEP 2: Address remaining needs with on-site renewable energy generation
- Wind
- Solar
- Hydro Energy

Image: energy.gov/eere/buildings/zero-energy-buildings
Efficient Process/Commercial Dehumidification for indoor farming

- High-efficiency heat exchanger to condense excess moisture
- A study is required to overcome customer hesitancy and to prove savings
- Expected completion late 2016
Dsm product development

Advance Roof Top Unit (RTU) Controllers

- VFD is operated using advanced economizer and demand controlled ventilation controls

- Challenges:
  - Bringing some RTUs up to code prior to retrofit may increase energy use
  - Developing prescriptive savings methodology
  - Doesn’t fit most contractor business models

![RTU Control System]

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Photo: Platte River Power Authority

<table>
<thead>
<tr>
<th>Advanced RTU Control System</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Essential Features</strong></td>
</tr>
<tr>
<td>Variable or multi-speed fan control</td>
</tr>
<tr>
<td>Integrated economizer</td>
</tr>
<tr>
<td>Demand controlled ventilation</td>
</tr>
<tr>
<td><strong>Desirable features</strong></td>
</tr>
<tr>
<td>Variable capacity compressors</td>
</tr>
<tr>
<td>Fault detection and diagnostics</td>
</tr>
<tr>
<td>Remote monitoring</td>
</tr>
</tbody>
</table>
Q2 idea submissions

• Gas Safety Monitoring & Energy Recycle; Received June 1, 2016
  • Indoor Air & Energy Recycle L.L.C.

• Description:
  • Commercial kitchen hood demand controlled ventilation (DCV)

• Evaluation Result:
  • Discussed with idea submitter
  • Technology is currently under development – 70% complete
  • Will revisit once unit is available and tested
DSM Quick To Market
(formerly Product Development Express)
Q2-2016 Highlights

Michael Papula
Energy Efficiency Engineer
Quick to Market (QTM) Overview

• The DSM Team for Product Development Express (PDx) Has Taken A New Name - Quick to Market (QTM)

• Purpose of the Team Remains Unchanged:
  • Evaluate Current Custom Project Applications for Potential Prescriptive Products
  • Provide an Alternative Path for Smaller, Simpler, Straightforward Products to Become New Prescriptive Products
  • Manage the Development of Technical Assumptions And Launch New Prescriptive Products Based on Custom Projects

• Goal of the Team
  • Expand Upon the Cost-Effective Prescriptive Products Available to Customers
Quick to Market (QTM) Overview

• Initiated in the 2nd Quarter of 2014 as a DSM Team Working With Product Development

• Managed by Three Person Cross-Functional Team

• Process Follows Final Stages of Product Development Process
QTM – the past year

• QTM Measures Brought to Market in 2016 Through 60-Day Notice or Regulatory Filings:
  • Linear Fluorescent LED Replacements - Type B Lamps (CO/MN)
  • LED PL/G Pin-based Lamps to Replace CFLs (CO)
  • LED Interior and Highbay Wattage Ranges Expanded (CO/MN)
  • Direct Install LED Lamps for Small Business Lighting (CO)
  • Value LED Lamps for Residential Lighting (CO/MN/NM)
  • LED Fixtures with T12 Baselines (CO)
Custom Project Archive

- Measures for T12 fixture Replacements and Retrofits with LED Technology
  Includes the Following:
  - LED in Refrigerator and Freezer Cases
  - LED Troffers
  - LED 4 foot Tubes in Type A, B & C
  - LED Linear Ambient fixtures
Custom Project Archive

2015 Top 10 CO Custom Programs

2016 Top 10 CO Custom Programs

2015 Custom Applications Top 10

2016 Custom Applications Top 10
Custom project archive

Top 15 custom programs 2015

Top 15 custom programs 2016

2015 Count of All Custom Projects from Top 15 Custom Programs

2016 Count of All Custom Projects from Top 15 Custom Programs
Custom Project Archive

- The Number of Custom Projects Are Showing A Trend Toward Reducing Both in Colorado and Across All Xcel Jurisdictions

- In Colorado Approximately 1/3 of the 600 Custom Applications received in Q2 Will Be Covered by New Prescriptive Measures by August 1, 2016
Custom Project Archive

Performance of New Products

- The Cumulative Net Generator kWh Thru New Prescriptive Products
  - Total to Date: 18,349,090 kWh
- Slow Ramp Up During 2015
- Customer Use of Measures Appears Steady During 2016
- Already Seeing Uptake of New T12 Measures in First Week of August
Custom Project Archive

- New Prescriptive Measures for the 2017 / 2018 DSM Filing
  - LED Lamps - Screw-in (with HID Base)
  - LED Interior Fixtures (with CFL Base)
  - VFD Measure for Water Well Pumps
  - Unit Heater Measures for Commercial and Industrial Spaces
  - High Efficiency Non-condensing Unit Heaters
  - High Efficiency Condensing Unit Heaters
  - Infrared Radiant Heaters
Custom Project Archive – Next Steps

• Continue to Monitor the Performance of the New Measures

• QTM Team Continues Review Custom Projects For Potential New Measures

• Participate In Product Development’s Opportunity Identification Efforts During Q3
Questions?

- Thank you -