

Q1-2018 Colorado DSM Roundtable

May 17, 2018



AGENDA

- 1:00 – 1:15 p.m. Welcome and DSM Regulatory Updates
- 1:15 – 2:45 p.m. DSM Programs: Q1-2018
 - » Q1 Achievement Update
 - » Business Programs
 - » Residential and Low-Income Programs
- 2:45 – 3:00 p.m. -- *Networking Break* –
- 3:00 – 3:30 p.m. 2017/2018 Evaluations
- 3:30 – 4:00 p.m. DSM Pilot and Product Updates: Q1-2018

DSM Regulatory Updates Q1-2018

Mike Pascucci
DSM Regulatory

60/90-Day Notices

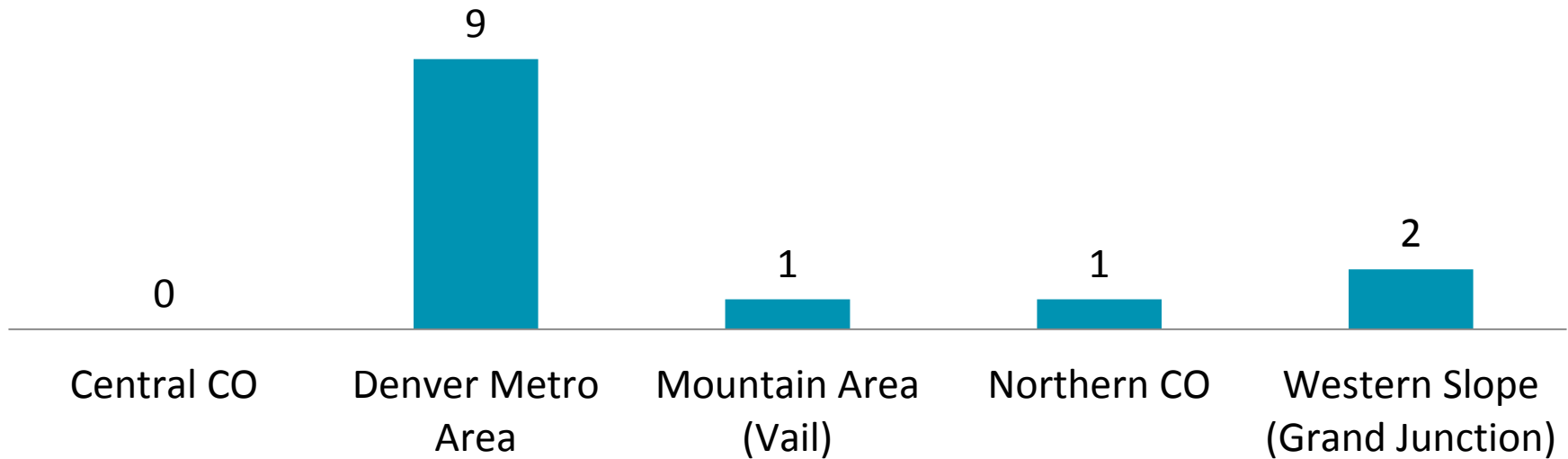
- Water Heating
 - *Posted: March 27, 2018*
 - *Implemented: April 27, 2018*
- New Construction
 - *Posted: May 11, 2018*
- High Efficiency Air Conditioning
 - *Posted: May 11, 2018*
- Home Performance with ENERGY STAR®
 - *Posted: May 11, 2018*
- Lighting Efficiency and Small-Business Lighting
 - *Posted: May 11, 2018*

DSM Regulatory Update

- **2018 Strategic Issues**
 - Hearings held March 8
 - Commission deliberations April 11
 - Awaiting final order
- **Upcoming Meetings – Save the Date!**
 - Q3-2018 DSM Roundtable Meeting:
Wednesday, August 15, 2018

9 out of our 13 builder respondents build new homes within the Denver Metro Area

■ # of Builders



DSM Achievements Q1-2018

Donna Beaman,
Manager, Customer Solutions

2018 Q1 Achievement Highlights

Electric Portfolio

- 153 GWh (38% of 400 GWh Target)
- 21.4 MW (33% of 65 MW Target)
- \$21M (27% of Budget)

Business Programs

- 88 GWh (34% of Target)
- Lighting Efficiency + SBL 65.7 GWh (54%)
- New Construction 8.6 GWh (36% of Target)
- Motor & Drive Eff. 4 GWh (32% of Target)

Residential / LI Programs

- 66 GWh (39% of Target)
- Home Lighting & Recycling – 56 GWh (50%)
- Residential Heating – 1.4 GWh (26% of Target)
- ENERGY STAR® New Homes - .7 GWh (20%)

Gas Portfolio

- 131,634 Net Dth (23% of Dth Target)
- \$3.5M Spend (27% of Budget)

Business Programs

- 27,530 Net Dth (19% of Target)
- Multifamily Buildings 10,820 Dth (40% of Target)
- New Construction 11,401 Dth (15% of Target)
 - Energy Efficiency Buildings 51% of target, Energy Design Assistance 7%

Residential / LI Programs

- 103,786 Net Dth (24% of Target)
- Water Heating – 1,601 Dth (70%)
- Residential Heating – 26,304 Dth (55%)
- Insulation & Air Sealing – 17,447 Dth (36%)

Marketing Campaigns & Outreach

Business

- Ongoing 2018 Energy Efficiency Partner Awards to recognize top commercial and industrial trade partners in 2017, in-person awards in March & April.
- Lighting: worked with several top market actors to gather input and feedback on program updates and changes.
- Commercial Refrigeration March Trade Relations events in partnership with Franklin Energy, attracted several new trade participants for 2018
- Energize Denver Trainings 2018, City and County of Denver, over the last two weeks of February.
- Xcel Energy Recommissioning Workshop March 27
- Preparation for May DSM Exposition
- IECRM Membership Meeting, trade outreach

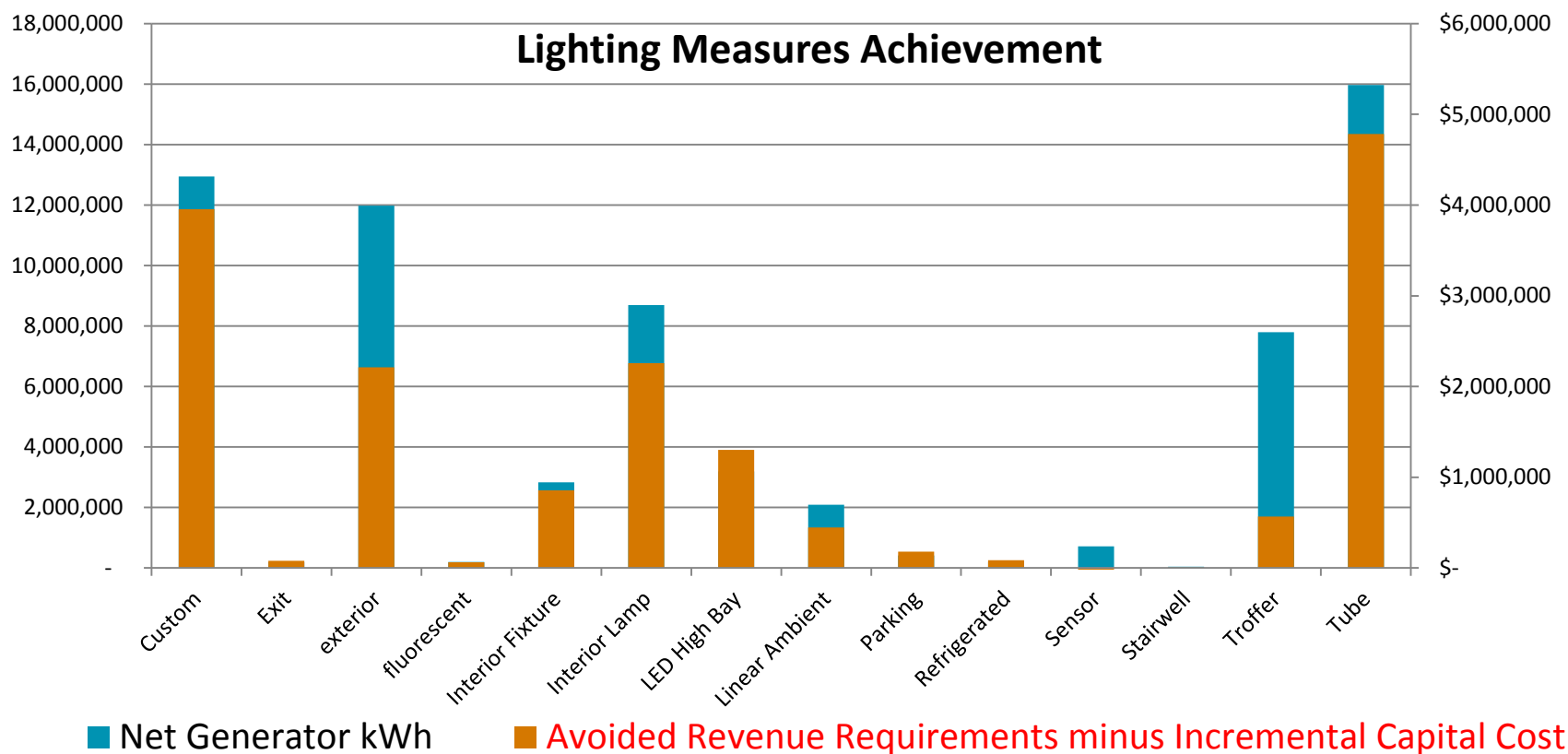
Residential

- Top residential trade recognition on www.xcelenergy.com
- Bundled Heating: Direct mail campaign for heating and insulation, multiple email campaigns promoting heating and insulation bonus
- Multifamily Building Efficiency: Email campaign to replace failing equipment, hosted trade partner training, added benchmarking into assessment report and bundled direct mail campaign with Building Tune-ups and Energy Analysis
- Home Energy Squad: Realtor outreach, marketing modules on Home Energy Report
- Energy Star New Homes: 6 “Selling High Performance” trainings with realtors, builder outreach email for participating and new builders, in-person outreach to builders
- Trade education and training utilizing Brainshark software: Webinars, cooling busy season

Business Lighting Efficiency & Small Business Lighting Products

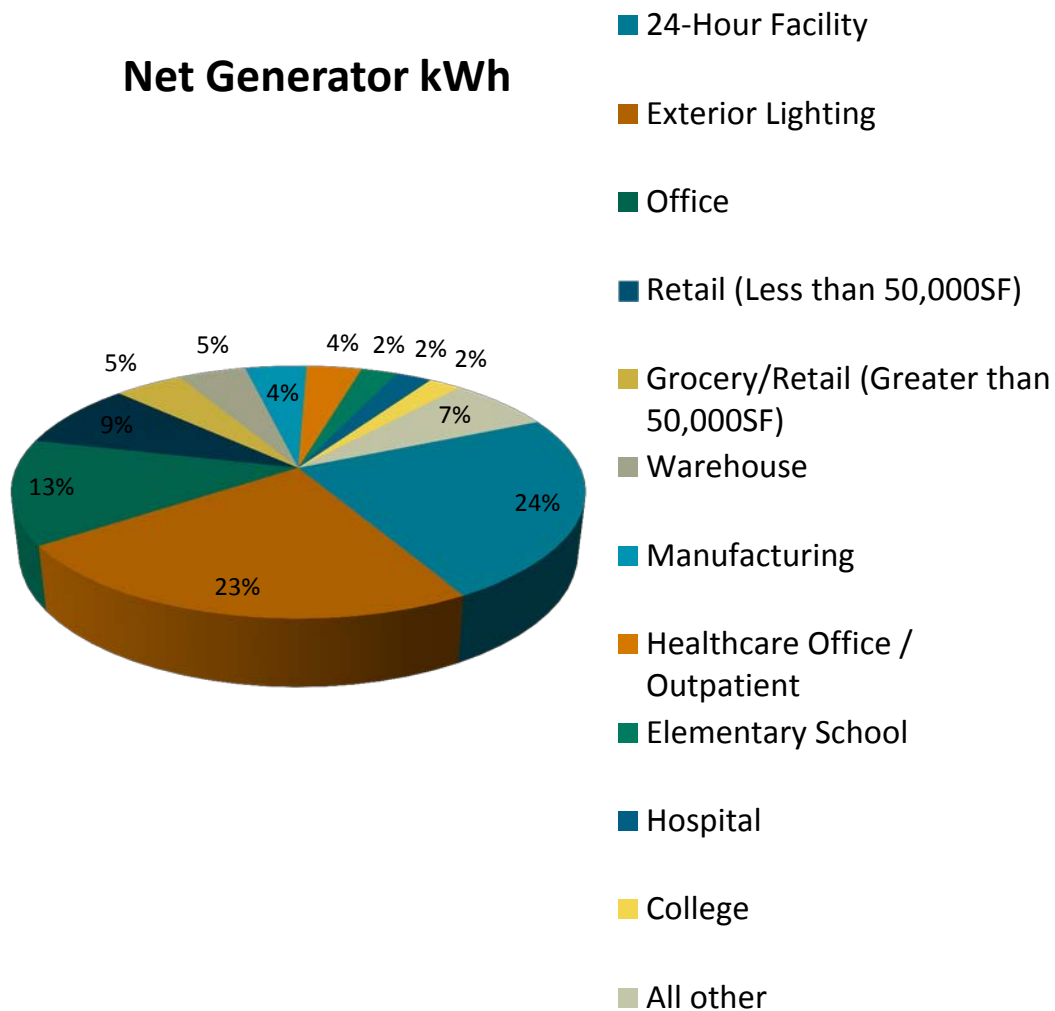
Mark Schoenheider
Team Lead, Customer Solutions

Business Lighting Efficiency and Small Business Lighting

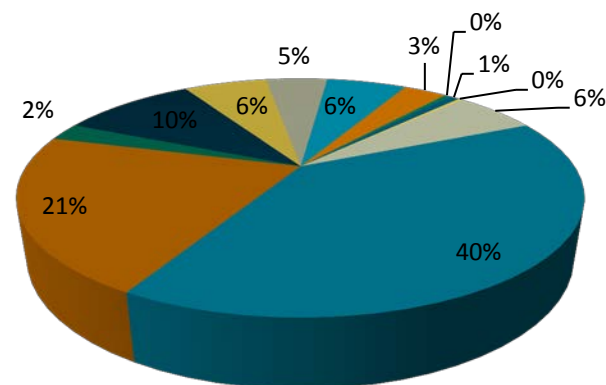


Business Lighting Efficiency and Small Business Lighting

Net Generator kWh



Avoided Revenue Requirements minus Incremental Capital Cost



DSM Business, Residential, Low Income Q1-2018 Highlights

David Hueser
Team Lead, Customer Solutions

Business Cooling

- Significant growth in Water Source heat pumps and Air-Cooled chiller measures
- Mini-split heat pump units now included as a midstream cooling measure
- Product forecasting to end 2018 below savings targets, however the enhanced midstream measure line-up is expected to improve 2018 electric demand reduction and energy savings
- Continued collaboration with Efficiency Works covering Northern Colorado utilities



Photo: Trane

 **Efficiency Works™**

Business Custom Efficiency

- Custom-analyzed Commercial & Industrial DSM projects accounted for 50.8 GWh, 12% of total savings in 2017. Common measures include
 - Lighting – represents 72% of total custom-analyzed electric savings
 - Refrigeration – 11% of total savings
 - Motors – 4% of total savings
- “Custom-Custom,” or Custom Electric contributed 3.8 GWh in 2017
- Custom Gas projects contributed 8,285 Dth, 1% of total Gas Portfolio savings in 2017
- The Custom Efficiency – Electric Product is forecasting to end 2018 below savings target while the Custom Efficiency Gas Product will likely exceed 2018 gas savings target



High-speed cold-storage door
Photo: Dynaco



Custom Commercial Elevator

ENERGY STAR® New Homes (E&G savings)

Q1 Program Metrics:

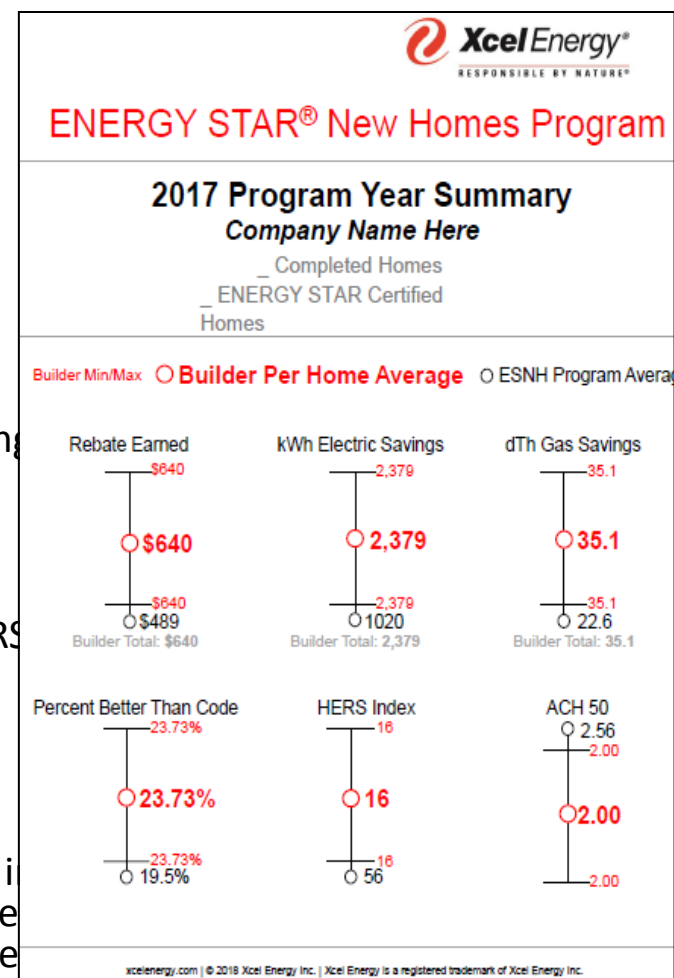
Metric	First Quarter
Qualifying Homes	961
Average Home Size	3,593
Average HERS	56.22
2012 IECC or Higher	53.30%
ENERGY STAR Certified Bonus Rebate	336

Q1 Achievement:

Savings	Q1
Dth	13,999
kW	205
kWh	719,705

Q1 Activity

- Todd Gamboa conducted six “Selling High Performing Homes” training sessions.
- The Company started evaluating Ekotrope as another option for HERS rating software.
- The product team created and distributed *Builder Summaries* to provide builders with a quick one-page analysis of their performance in 2017. These summaries also include program averages so builders can see how they did against their peers.



Residential Home Performance with ENERGY STAR®

2018 Q1 Savings Achievement

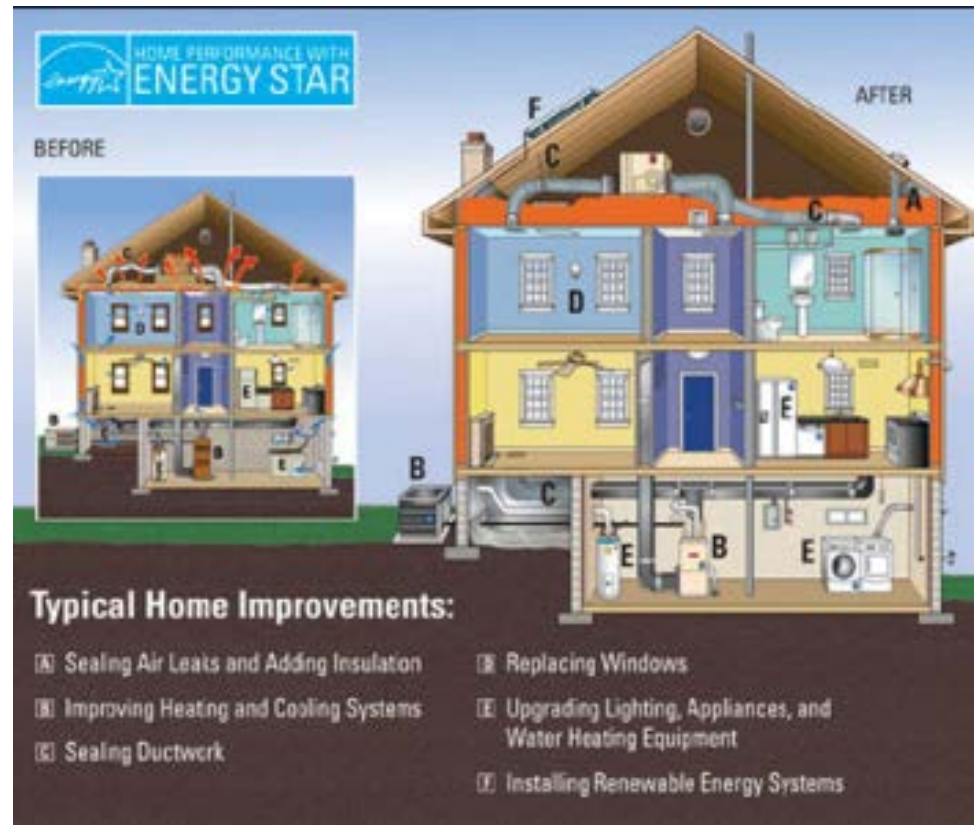
Net Gen kW	Net Gen kWh	Net Dth
51	53,680	2,423

Q1 Review

- Bonus rebate on all gas insulation and air-sealing measures
- Updated water heating measure: EF → UEF

Coming in Q2:

- 60 Day Notice to:
 - Remove lighting measure
 - Add more “low hanging fruit” measures to help more customers qualify for the program



Low Income Non-Profit (Electric & Gas)

- Q1 2018 closed projects with good electric demand reduction, which helps drive the product's cost-effectiveness
- The Low Income product has a good pipeline of projects and is expected to meet or exceed 2018 savings targets.
- 2018 participants among the DSM product's focus organizations, including shelters, safe houses, and residential treatment centers



Arvada, CO



Monte Vista, CO

- *Networking Break* -



DSM Evaluation Update Q1-2018

Nick Minderman
DSM Regulatory

Ann Kirkpatrick
Residential DSM Team

Agenda

Status of Evaluations

- 2017 – finalizing results
- 2018 – in progress
- 2019 – leveraging across states

In-Depth Example – 2017 Residential Heating

- Importance of asking good questions
- A balanced approach to NTG
- Practical, useful recommendations

Investigating Customer Responses

- Follow-up research for CO & MN Data Centers
- Lighting cognitive interviews
- Targeted trade partner interviews for MN Motor Efficiency

Status of 2017 Evaluations

Five Colorado products were evaluated

- Commercial Refrigeration (process only)
- Cooling Efficiency
- Data Center Efficiency
- Insulation and Air Sealing
- Residential Heating



Image credit: Clean Energy Resource Teams, N-Lange.de

Status of 2017 Evaluations

- All reports were completed in late Q4 2017 or early Q1 2018
- All products except Data Centers are reviewing recommendations and plan to file notices as necessary before the end of Q2
- Changes for all products (including Data Center Efficiency) will be retroactive to 1/1/18
- More discussion on Data Centers in “Investigating Customer Responses”



Image credit: Robert Harker, Wtshymanski

Status of future evaluations

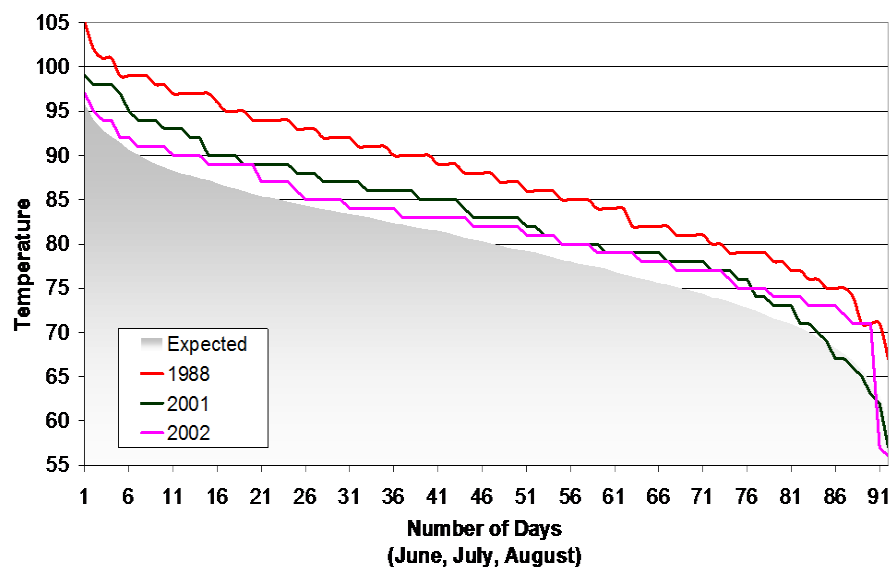
2018

- Five Colorado products are undergoing evaluation
 - Custom Efficiency (process only)
 - Evaporative Cooling
 - Home Lighting
 - Lighting Efficiency
 - School Education Kits
- Kick-off meetings were late in Q4 2017 (lighting) or early Q1 2018 (all other)
- Just starting data collection
- Expect results earlier in the year

Status of future evaluations

2019

- Expecting some traditional evaluations
- Looking to leverage planned evaluations of Saver's Switch in MN and Peak Partner Rewards in CO



In-depth example – Res Heating Process

- Initial interviews with internal stakeholders
 - DSM leadership, program and channel managers
 - Other involved personnel
- Scope and goals determined
- Development of the interview guides
 - Trade partners
 - Customers
 - Peer utilities
- Great opportunity to increase knowledge and effectiveness

The evaluation executive summary

- High satisfaction with the product
- Customers who installed furnace + EC motor = lower free-ridership
- No peer utilities require NATE certification
- Top trades view rebates as an integral part of their business model
- Rebates matter. Higher rebates matter more.
- Participants tended to be older, higher income, live in smaller households
- Most participants chose a furnace contractor based on an existing relationship (35%) or recommendation from friends or colleagues
- Trade partners reported that the product helped them differentiate themselves and increased the number of projects

Res Heating: Recommendations from evaluation

- Meet internally and with external stakeholders to determine the importance of NATE certification in the success of the Residential Heating product – **in progress.**
- Determine barriers to greater participation by installation contractors in the Residential Heating product – **survey coming**
- In bill inserts, print, and/or other forms of advertisement make explicit the difference between standard efficiency and high-efficiency gas furnaces (defined as 95% or greater AFUE). – **actions taken and will be maintained**
- Adjust the furnace NTG to 0.86 based on research findings – **will be done by mid-year, applies to all 2018 savings**

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Res Heating: Recommendations from evaluation

- Conduct more frequent customer satisfaction and influence surveys – making progress with process change and online applications
- Increase support for primary (top tiers) trade partners – actions taken: www.xcelenergy.com/cotrades
- Actively seek a measure to take the place of EC Motors – involving Product Development. Emerging technology.
- Maintain strong channel management, consider adding online rebate status system – webinars being offered
- Encourage customers to replace furnaces during cooling season (“early replacement”) – updating customer AC web page as first step

Res Heating: Assess the recommendations

Using a consistent process to implement recommended actions where they fit portfolio plans:

- Build a tracker
- Engage stakeholders
- Review progress at the beginning of each month
- Work towards adoption



Investigating Customer Responses

- Emerging pattern in customer self-report has resulted in challenges with:
 - Determining effective product designs to address free-ridership
 - Understanding where trade partners can/can't influence
 - Calculating a NTG that is consistent with messaging from customer and other product stakeholders

“The program is really important to me”

... but...

“I was going to use the exact same project in the exact same quantity at the exact same time without the program”

Investigating Customer Responses

Three evaluation tasks in 2018 are aimed at better understanding customer responses

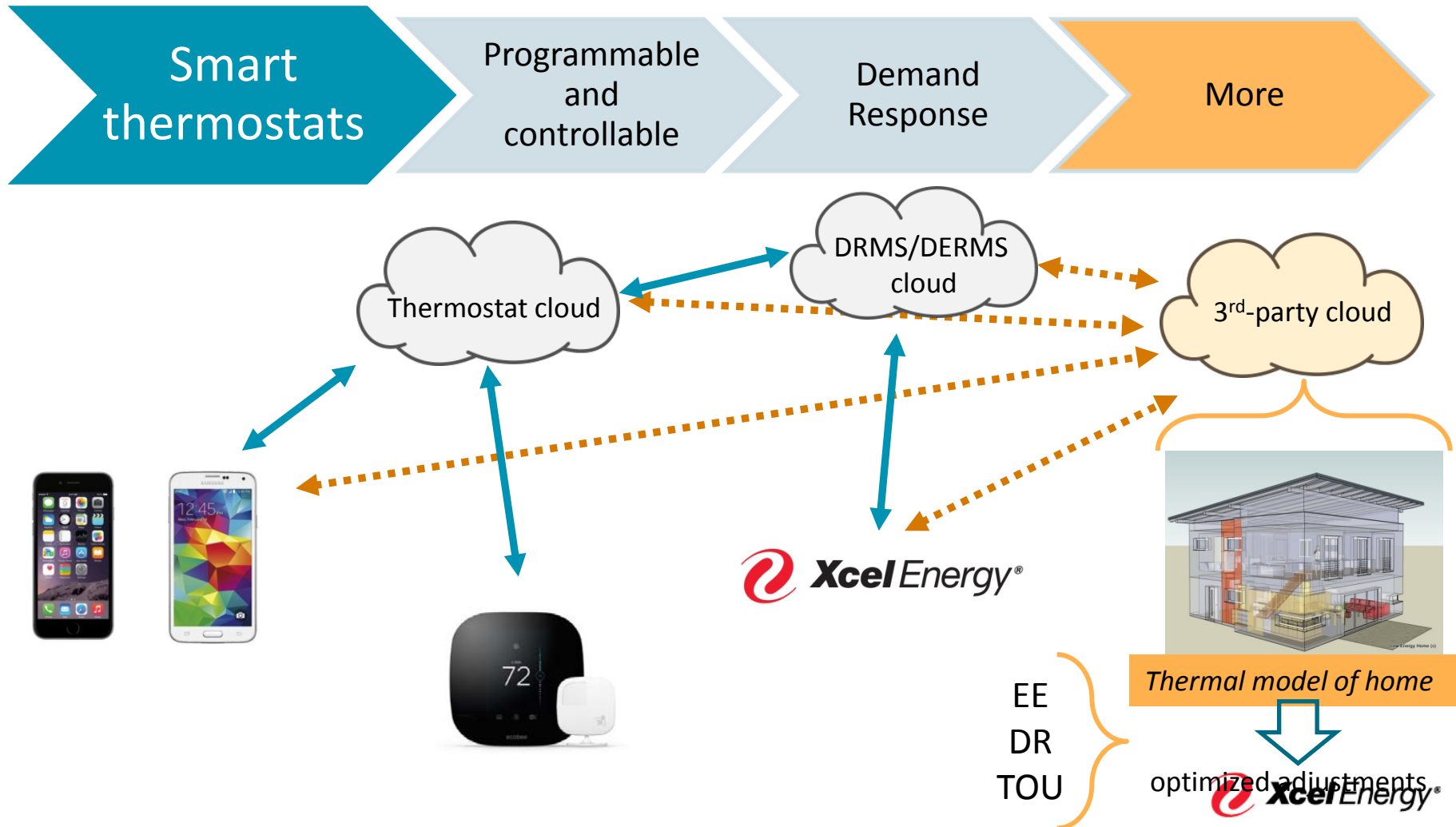
- CO & MN Data Center Efficiency – historical research
- CO Lighting Efficiency – ‘cognitive interviews’
- MN Motors Efficiency – targeted trade partner interviews



DSM Pilot and Product Development Q1 2018 Highlights

Thor Bjork
Team Lead, DSM Product Development

Thermostat Optimization Pilot



Thermostat Optimization Pilot – Q1 2018

Tendril's Orchestrated Energy : summer only



Nest Seasonal Savings - winter

Launched Nest Seasonal Savings

- Nearly 12,500 customers, in 24 hours
- Three-week learning commenced Jan 2018
- Early results indicate savings from program



DSM Pilot Highlights

ENERGY STAR® Retail Products Platform

- New Pilot Manager – Michael Colby taking over for Chad Gilhoi
- Added Lowe's starting in April 2018!
- Strong 1st quarter of 2018 after running out of incentive funds in mid-2017
- Continued strong sales of the highest tier Clothes Washers
- Kickoff held with EMI consulting, which will focus on evaluating program assumptions and cost effectiveness



New Product Status

Removed from consideration	Stage 2	Stage 3 - Awaiting 3 rd party developments	Stage 3 - Active	Stage 4 - Launch
Variable Refrigerant Flow	Switched Reluctance Motors	Q-Sync and Switched Reluctance Motors	Window AC Recycling	Beyond Widgets - LBL
	Energy Star Radon Fans	Advanced RTU Controllers	Advanced Energy Communities	Ozone Laundry*
			Geo-Targeting	Networked Lighting Controls*

*60-Day Notice posted



Networked Lighting Controls



Planned for release **September 1, 2018**

Participation is **EASY**:

Just tell us how much load you're controlling; no need to choose lighting fixtures from a list

- Prescriptive rebate of \$0.40 per controlled watt
- For retrofit applications only
- DLC Networked Lighting Controls Qualified Product List required
- Warehouses, manufacturing facility, offices, and 24-hour facilities are the primary target
- Trade driven
- Training plan includes Expo-style hands-on training session

Ozone Laundry



- Moving from custom to a midstream program
- \$20 per pound capacity of washing machine incentive to distributors
- Partnership water utilities who have downstream rebates will give distributors significant incentive to reach out to potential customers
- Target Market is hotels, healthcare (including nursing homes), hospitals, and prisons
- Estimated 10,804 Dth/year savings
- Additional customer benefits include ~20% water use reduction and associated costs

Plan to launch Summer 2018
Can save up to 70% of gas used to heat water
Distributors and water utilities are onboard

Residential Battery Demand Response

Objectives

Test elements key to establishing a future residential battery demand response product. Areas to test:

- Performance of different battery technologies and vendors for DR;
- Evaluate customer offers; and
- Build system to enable use of Xcel Demand Response Optimization and Management System.



Current Status

Advancing toward more specific pilot design, including:

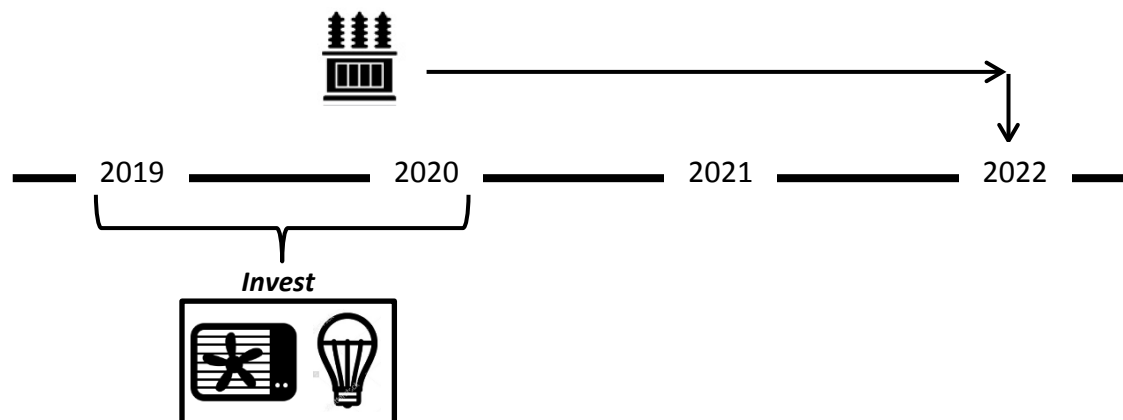
- Drafting rebate structure and participation options
- Engaging installers and vendors for feedback
- Developing draft methodology for technical assumptions

Stakeholder Feedback

Received initial pilot feedback during February 23rd Existing and Future Programs and Grid Stakeholder Group.

Geo-targeting

Using energy efficiency and demand response to defer or avoid the need to invest in a traditional distribution solution (e.g., transformer)



Status

- Inserted enabling policy for review in *DSM Strategic Issues*
- Identified potential project location for pilot development

Status

- Conduct project analysis to evaluate potential for pilot
- Design pilot, identify measures, develop budget, etc.

Product idea submissions

Share your Product Ideas:

www.xcelenergy.com/productideas

Questions?

- Thank you -