Colorado Springs Utilities

Energy Efficiency and Demand Response

CREA Energy Innovation Summit 2018

Gabriel Caunt
• Four service municipal utility
• Greater Colorado Springs area – 475 square miles
• Summer-peaking electric system
• 4.4 GWh 2017 sales
• 1,051 MW summer generating capacity
• ~20 MW of supply-side solar arrays/gardens
• 930 MW Peak July 2018
• 235,191 electric service points, mostly AMR
• 1,835 employees (all 4 services)
Electricity | Natural Gas | Water | Wastewater

**Energy Vision – Energy Reduction**

Colorado Springs Utilities will help customers reduce their electric energy use by 12 percent and reduce electric demand by 12 percent. Reduction goals will be achieved with a maximum bill impact of 2 percent.
By 2020, Colorado Springs Utilities will provide 20 percent of its total electric energy through renewable sources with 1 percent from distributed generation sources. Renewable energy goals will be achieved with a maximum bill impact of 1 percent.
2015 DSM Potential Study

- EE “Achievable” Potential less than our goal
- Significant erosion of EE savings from code and standard changes
- At least ten years of significant EE remaining
- Still quite a bit of lighting potential in small businesses
- Smart Thermostats – up to 3.2% of peak MW
- Commercial DR – up to 4.3% of peak MW
Time of Rapid Change

- Flat sales despite community growth
- 58% population increase by 2050
- Closure of downtown coal plant by 2035, or sooner.
- Cheap natural gas and renewables
  - Natural Gas half the cost of 2015 IRP “Medium” forecast
  - Addition of 245 MW of utility scale solar by 2024
- Emergency of 100% Renewable and low-carbon goals
- Electrification – EPRI/APGA perspectives
- Residential PV installations at 600% of 2018 forecast
- Interruptible data center customers
- Emergency of customer-side batteries
- Time value of energy and demand savings
Successes

• Conservation Voltage Reduction
• Customer Interest – ChangeTheCurrent.com
• Mid-stream lighting
• Business Lighting
• Business Custom
• Mid-stream HVAC
• Performance-based Builder Incentive program
Challenges

• Demand Response
  – Customer choice/ownership in DR-capable thermostat market
  – Targeted distribution-level demand response
  – Meter integration with DR solutions during AMI upgrade
  – Expected shift in system peak from renewable resources

• Energy Efficiency
  – The end of the easy part of lighting
  – The Large Basket of Small Savers
Current Focus areas

- Energy Efficiency
  - Personalized evaluation and direct install for residential market
  - Mid-stream delivery where appropriate
  - Fuel Switching strategy and “Energy Vision 2.0”

- Demand Response and demand management
  - Advanced Meter Infrastructure roll-out
  - Transitioning to a unified platform for residential and commercial DR
  - Third party thermostats for residential DR
  - Negotiation of commercial DR contracts
  - Transition from renewable rebate to renewable + storage incentive
  - Natural gas demand response for winter peak