Fort Collins Utilities

Fort Collins Utilities provides electricity, water, wastewater, stormwater and financing services

Citizen-owned, electric utility established 1935, ~64,000 customers

Highly educated, environmentally aware customers
Fort Collins Efficiency Portfolio

- Thanks for the award!
- 2012 results, 23 GWh annual savings, 1.5% of sales, 2.2 cents/kWh
- Details at fcgov.com/what-we-do
Fort Collins Efficiency - 20 Minutes

- What we offer
- Results and benchmarking
- Customer interest and support
- Related efforts
- Next steps
  - Data driven processes
  - Performance based incentives
  - New technologies
  - Revised goals and policies
  - New business models
Efficiency – What we offer

Comprehensive residential and business programs

- Products
- Retrofits
- Design
- Operation
- Regulation

Energy and Water Efficiency
- Home Efficiency Audits and Rebates
  Reduce costs and increase the comfort of your home with energy-saving improvements and rebates.
- Efficiency Financing
  No money down, quick approval and convenient repayment.
- Lighting
  Buy discounted compact fluorescent (CFL) and light-emitting diode (LED) bulbs year-round at local retailers.
- Refrigerator and Freezer Recycling
  Recycle your refrigerator or freezer and receive a $35 rebate.
- Clothes Washer and Dishwasher Rebates
  Purchase an ENERGY STAR qualified clothes washer or dishwasher and receive a $50 or $25 bill credit.
- Sprinkler Audits and Rebates
  Receives free sprinkler system audits and equipment rebates.
- Toilet Rebates and Recycling
  Receive a rebate when you buy a high efficiency toilet and recycle your old one.
- Northern Colorado ENERGY STAR Homes
  Locate high performance new homes and builders.

Renewables
- Green Energy Program
  Choose Green-e certified renewable energy.
- Solar Rebates
  Install a solar photovoltaic system and receive cash back.

Community Education
- Xeriscape
  Create a healthy, attractive landscape that conserves water.
- Adult and Youth Education
  Engage children and adults with energy and water education in schools and the community.

Education and Tools
- Facility Assessment
  Get started with a free, quick and practical energy and water assessment.
- Biz Ed
  Attend free monthly public programs.
- ClimateWise
  Partner with this free, voluntary program to reduce waste, energy, water and transportation while receiving public recognition, ongoing support, tools and education.
- Efficiency Challenge
  Motivate employees and improve energy and water-efficient behavior.
- Keep Current
  Access the e-newsletter and online library.
- Load Management
  Reduce your energy demand and lower your bill.
- Sprinkler Audits
  Receive free audits and recommendations for HOAs.
- Restaurant and Hotel Materials
  Hotels can encourage customers to save water with information cards and restaurants can get free pre-rinse spray nozzles.

Rebates and Incentives
- Electric Efficiency and Water Conservation
  Receive rebates for efficiency improvements; details and choices at fcoln.gov/business/diversify.
- Building Tune-up
  Improve the efficiency of your existing building.
- Integrated Design Assistance
  Receive incentives for high-performance new buildings.
- Refrigerator and Freezer Recycling
  Recycle your refrigerator or freezer and receive a $35 rebate.

Renewables
- Green Energy Program
  Choose Green-e certified renewable energy.
- Solar Rebates and Financing
  Install a solar photovoltaic system and receive cash back.
Energy Results

- Customers served since 2004
  - 2,300 businesses (41%)
  - 2,900 homes (5%)
  - 18,500 appliances
  - 421,000 bulbs
  - 40,000 on-going home energy reports (80%)

2012 utility cost per kWh saved = 2.2 cents
Energy Results

Cumulative annual savings
- 128,000 MWh
- Equivalent to
  - 15 MW fossil fuel
  - 44 MW wind
  - 86 MW solar
Portfolio Benchmarking

Fort Collins 1.5% in 2012

Ref: Large Public Power Council, Energy Efficiency Working Group Benchmarking Report
Customer Support

Residential - 2013

- Too much, 10%
- Don’t know, 12%
- Not enough, 18%
- About right, 60%

Describe the level of Fort Collins programs which support energy efficiency and conservation?
Efficiency Programs – Related Efforts

• Water conservation
• Green building
• Economic and social sustainability
• ClimateWise
Efficiency Programs – Next Steps

- Data driven processes
- Performance based incentives
- New technologies
- Revised goals and policies
- 2014 measures and programs
- New efficiency business models
Next steps: Data Driven
Electricity Savings from Insulation & Air Sealing

Relative Savings Summary

<table>
<thead>
<tr>
<th>Program</th>
<th>Number of Meters</th>
<th>Median (%)</th>
<th>Average (%)</th>
<th>Confidence Interval for Average Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insulate &amp; Seal - E</td>
<td>48</td>
<td>6.3</td>
<td>5.4</td>
<td>Absolute (+/- %) 3.9, Relative (+/- %) 70.9, Standard Deviation (%) 13.6</td>
</tr>
</tbody>
</table>

Distribution of Relative Savings by Participant

Weather normalized pre and post billing data statistical analysis
Next steps: Data Driven Participation in Home Efficiency Program

- Demographic segmentation (Nielsen PRIZM Lifestage)
- The “Affluent Empty Nests” (M1) are 90% more likely to get an audit or an upgrade
- The more affluent across all Lifestage classes are over performing – except the “Young Achievers” (Y2)
Next steps: Data Driven Participation in Home Efficiency Program

- By energy use?
- Really high and really low users
- Average to high users are underperforming
- Lower energy users are much more likely to make upgrades
- Where are the average to high users?
- Really high users are not converting
Next steps: Performance Based Incentives

Integrated Design Assistance Program (IDAP)

• Targets based on Architecture 2030 Challenge® initiative
• Design, Construction and Performance based incentives for electricity and natural gas for the Target EUI (BTU/SF/yr)
• Encourages high-performance design and use of renewables
• New construction and deep retrofits
• Everything counts
  • Design, construction, operations, behavior, renewables

fcgov.com/idap
Next steps: Technology

Advanced RTU Controllers

<table>
<thead>
<tr>
<th>Site</th>
<th>Install Date</th>
<th># Units</th>
<th>Total Capacity (Tons)</th>
<th>Nominal Fan Power (HP)</th>
<th>Avg Daily Runtime</th>
<th>Annual (Hrs)</th>
<th>Total (kWh)</th>
<th>%</th>
<th>Normalized (kWh/Ton per 1,000 h)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office</td>
<td>3/30/2013</td>
<td>1</td>
<td>6</td>
<td>2</td>
<td>5 AM-9:30 PM Mon-Sun</td>
<td>6,025</td>
<td>8,900</td>
<td>62%</td>
<td>246</td>
</tr>
<tr>
<td>Fitness Center</td>
<td>3/20/2013</td>
<td>1</td>
<td>15</td>
<td>3</td>
<td>24/7</td>
<td>8,760</td>
<td>25,000</td>
<td>68%</td>
<td>190</td>
</tr>
<tr>
<td>Retail¹</td>
<td>7/27/2013</td>
<td>1</td>
<td>10</td>
<td>3</td>
<td>7 AM-11 PM Mon-Sun</td>
<td>5,840</td>
<td>9,300</td>
<td>88%</td>
<td>159</td>
</tr>
<tr>
<td>Composite</td>
<td></td>
<td>3</td>
<td>31</td>
<td>8</td>
<td></td>
<td>6,875</td>
<td>43,200</td>
<td>70%</td>
<td>203</td>
</tr>
</tbody>
</table>

¹Initially installed 3/20, but existing Stat was not functioning
²Results based on data collected from install to 9/26/2013
Next steps: Technology
Advanced RTU Controllers

Office Bldg Avg Daily HVAC Power vs Avg Daily OSA Temp

- Calibrated Model Standard Mode
- Calibrated Model CATALYST Mode
- Measured Standard Mode
- Measured CATALYST Mode
Next Steps: Goals and Policies

Stepping Up: Benefits and Cost of Accelerating Fort Collins' Energy and Climate Goals

By Rocky Mountain Institute, in partnership with Fort Collins Utilities
Next Steps
Efficiency Programs and Measures

• Lighting
  • Review specialty CFLs
  • LED / low watt T-8 mid-stream

• HVAC
  • Advanced RTU controllers
  • Early retirement

• Small Business Efficiency Grant (continued)
  • Bonus for multiple measure types (equipment, controls, redesign)

• Multi-family (direct install, group replacement, comprehensive)

• AMI web portal

• Demand Response – Wifi stats and HW heater controllers
Next Steps
New Efficiency Program Models

- Utility as a Service
  - Hybrid market approach
  - Orders of magnitude increase in scale
  - Simple and easy
  - Opt out participation

- Data driven segmentation and targeted marketing

- Increase market size
  - Collaboration with Platte River and other cities
  - Public utilities collaboration

- Information, education, pricing
  - Billing/metering data, rate structures
Thanks!
jphelan@fcgov.com