Energy Policy – 2013 Annual Update

August 2014

City of Fort Collins Utilities

Energy Policy Update

This report provides an update of 2013 activities and results related to the City of Fort Collins *Energy Policy*, adopted in January 2009. The primary goals of the *Energy Policy* are to sustain high-system reliability and to contribute to the community's climate protection goals and economic health. The *Energy Policy* 2050 vision is to ensure highly reliable, competitive, carbon neutral electricity supplies, managed in a sustainable, innovative, responsible and efficient manner for the Fort Collins community.

The *Energy Policy Annual Update* reviews progress made to date in the primary goal areas of the policy: reliability, climate protection, economic health and the City's collaboration with Platte River Power Authority (Platte River). The *Energy Policy* and most recent annual update are available at *fcgov.com/utilities/what-we-do.*

Key outcomes from implementation of the *Energy Policy* in 2013 include:

- Community carbon emissions from electricity use were 6% less in 2013 compared to the baseline year of 2005.
- Electricity use per capita, for all sectors, has decreased by nearly 10% from 2005 to 2013.
- Customers continued to receive highly reliable electric service, as measured by an average system availability index of 99.9982%.
- Avoided annual carbon emissions of over 195,000 metric tons from *Energy Policy* related programs.
- Renewable energy comprised 5.2% of total electrical energy purchases in 2013.
- Efficiency programs generated over $31 million in local economic benefits through reduced utility bills, direct rebates and leveraged investment.

Major 2013 activities and highlights:

- Utilities continued implementation of the Advanced Meter Fort Collins project to modernize the distribution system.
- Customer electricity savings from efficiency programs totaled over 32,000 megawatt-hours (MWh), or 2.2% of the community's annual usage. This is equivalent to the annual electric use of over 3,600 typical Fort Collins homes.
- Efficiency programs saved electricity with a lifecycle cost-of-conserved energy of 2.0 cents per kilowatt-hour (kWh), compared to an average wholesale electricity cost of 5.4 cents per kWh.
- Photovoltaic (PV) capacity additions totaled 300 kW (273 kW residential and 27 kW commercial).
- Fort Collins received the 2013 Leadership in Energy Efficiency award from the Southwest Energy Efficiency Project (SWEEP). The award noted that "Fort Collins is the leading efficiency provider amongst municipal utilities in the six state region served by SWEEP."
- Fort Collins Solar Power Purchase Program (SP3) was rolled out in September 2013. SP3 will add over 4 megawatts of locally installed solar by June 2015. This will nearly triple the amount of solar within the community.
- The selection process for Community Solar Garden began in fall 2013. The Community Solar Garden will expand small-scale renewables options for customers who do not have favorable sites for roof-top solar.

2013 ENERGY POLICY UPDATE

City of Fort Collins Utilities

Here is your 2013 update of activities and results related to the City of Fort Collins Energy Policy.

The primary goals of the Energy Policy are to sustain high-system reliability while contributing to the community's climate protection goals and economic health. The Energy Policy 2050 vision is to ensure highly reliable, competitive, carbon neutral electricity supplies, managed in a sustainable, innovative, responsible and efficient manner for the Fort Collins community.

The Energy Policy and most recent annual update are available at *fcgov.com/utilities/what-we-do*.

Did you know?

Fort Collins received the 2013 Leadership in Energy Efficiency award from the Southwest Energy Efficiency Project (SWEEP).

The award noted that

"Fort Collins is the leading efficiency provider amongst municipal utilities in the six state region served by SWEEP."

Annual Results

We can have LOW RATES and HIGH RELIABILITY and lead in ENERGY EFFICIENCY.

Customers received **HIGHLY RELIABLE ELECTRIC SERVICE,** as measured by an average system availability index of

99.9982%

The Point?

We have super reliable electric service, on average, customers had 0.3 outages (e.g., most customers zero, some customers one) for a total duration of 32 minutes.

Customer electricity **savings from efficiency programs** totaled over

32,000,000 KILOWATT-HOURS (KWh)

or 2.2% of the community's annual usage. **This is equivalent to the annual electric use of over 3,600 typical Fort Collins homes.**

x100

What Does This Mean?

Customers are taking advantage of efficiency programs at a record pace.

Efficiency programs saved electricity with a lifecycle cost-of-conserved energy of 2.0 cents per kilowatt-hour (kWh), compared to an average wholesale electricity cost of 5.4 cents per kWh.

IT'S CHEAPER TO SAVE ELECTRICITY WITH EFFICIENCY than it is to buy it **WHOLESALE.** $$

PV

Photovoltaic (PV) capacity additions totaled 300 kW (273 kW residential and 27 kW commercial).

In Other Words...

Just more PV!

Fort Collins Solar Power Purchase Program (SP3) was rolled out in September 2013. SP3 will add over 4 megawatts of locally installed solar by June 2015. **This will nearly triple the amount of solar within the community.**

So What You're Saying Is?

A lot more PV! Delivered in a model that is first of its kind in Colorado.

RENEWABLE ENERGY

comprised 5.2% of total electricity in 2013.

But will grow substantially next year

Platte River executed an agreement to purchase an additional 60 megawatts of capacity from a wind farm to be constructed in eastern Colorado by the end of 2014.

60 MEGAWATTS

LOW RATES

As of July 2013, Fort Collins typical residential customer bills were in the lowest 14% of 54 Colorado utilities reporting to the Colorado Association of Municipal Utilities (CAMU).

EFFICIENCY PROGRAMS GENERATED OVER

$31 MILLION

in local economic benefits through reduced utility bills, direct rebates and leveraged investment.

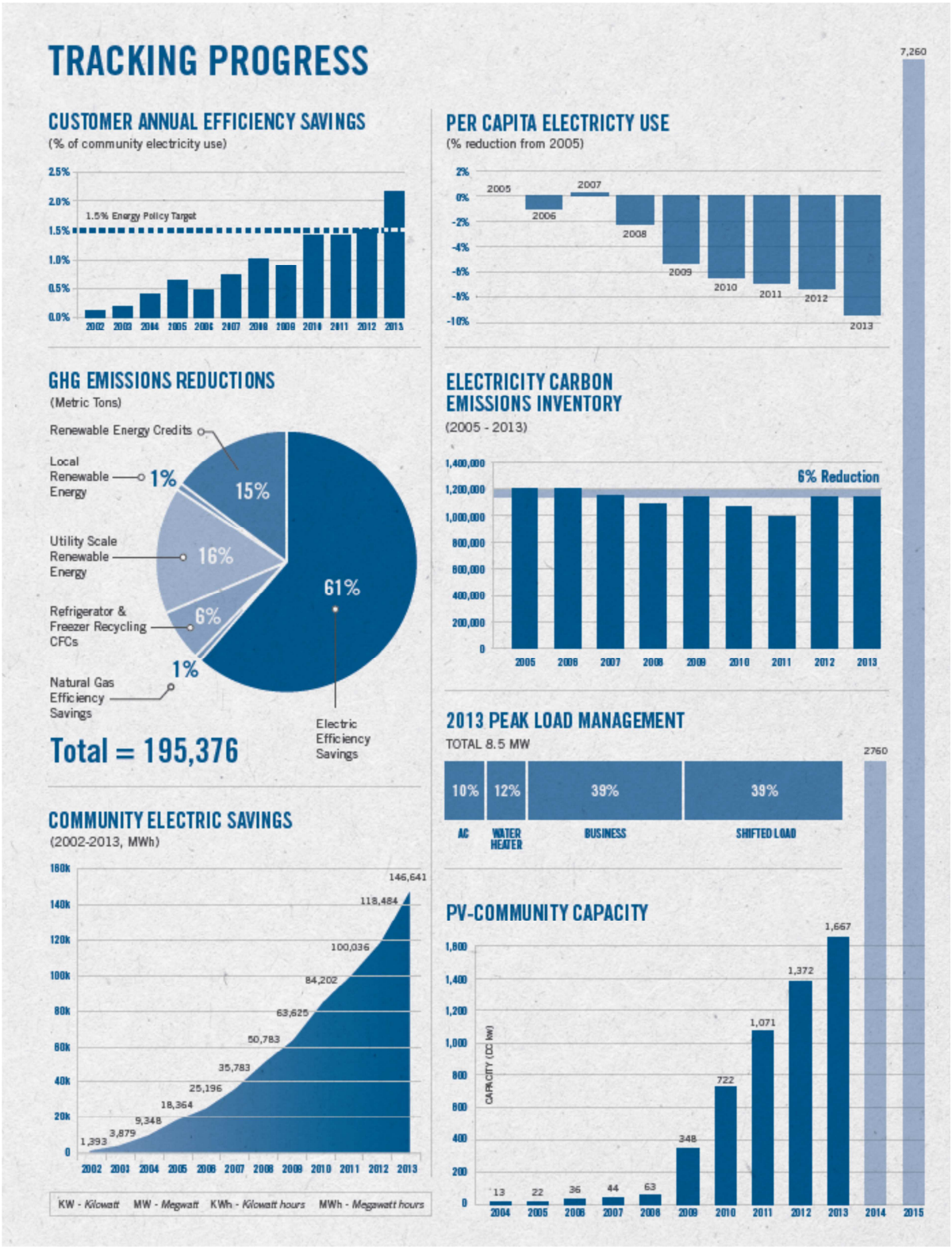
Reducing energy bills is a win win.

CO_2

195k METRIC TONS

Avoided annual carbon emissions of over 195,000 metric tons from Energy Policy related programs.

That's a lot of carbon. See pie chart on back.


TRACKING PROGRESS
CUSTOMER ANNUAL EFFICIENCY SAVINGS
(% of community electricity use)
2.5%
2.0%
1.5%
1.0%
0.5%
0.0%
1.5% Energy Policy Target
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
PER CAPITA ELECTRICTY USE
(% reduction from 2005)
2%
0%
-2%
-4%
-6%
-8%
-10%
2005
2006
2007
2008
2009
2010
2011
2012
2013
GHG EMISSIONS REDUCTIONS
(Metric Tons)
Renewable Energy Credits
Local Renewable Energy
1%
15%
Utility Scale Renewable Energy
16%
Refrigerator & Freezer Recycling CFCs
6%
61%
1%
Natural Gas Efficiency Savings
Electric Efficiency Savings
Total = 195,376
ELECTRICITY CARBON EMISSIONS INVENTORY
(2005 - 2013)
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
0
6% Reduction
2005 2006 2007 2008 2009 2010 2011 2012 2013
2013 PEAK LOAD MANAGEMENT
TOTAL 8.5 MW
10%
12%
39%
39%
AC
WATER HEATER
BUSINESS
SHIFTED LOAD
COMMUNITY ELECTRIC SAVINGS
(2002-2013, MWh)
160k
140k
120k
100k
80k
60k
40k
20k
0
1,393
3,879
9,348
18,364
25,196
35,783
50,783
63,625
84,202
100,036
118,484
146,641
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
KW - Kilowatt MW - Megwatt KWh - Kilowatt hours MWh - Megawatt hours
PV-COMMUNITY CAPACITY
1,800
1,600
1,400
1,200
1,000
800
600
400
200
0
CAPACITY (DC kW)
13
22
36
44
63
348
722
1,071
1,372
1,667
2760
7,260
2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015

Appendix: Energy Policy Metrics Scorecard

The *Energy Policy* references goals that include specific objectives and metrics in various categories. The following tables summarize status, progress and accomplishments in 2012 related to each goal and supporting objectives. The tables use the following stoplight color coding to indicate progress and status:

●	Achieved or on-track to be achieved
●	Progress towards being achieved
●	Not achieved or at risk for not being achieved

For more information regarding any aspect of this annual update, call Fort Collins Utilities at (970) 221-6700, e-mail *utilities@fcgov.com* or TDD (970) 224-6003.

Goal 1: Provide Highly Reliable Electric Service

Objectives and Metrics	Progress
Provide and maintain a highly reliable system.	
● Average System Availability Index (ASAI) greater than 99.9956%	99.9982%
● Customer Average Interruption Index (CAIDI) less than 45 minutes	32 minutes
● System Average Interruption Frequency Index (SAIFI) less than 0.66	0.3 interruptions
Manage peak loads to reduce demands on the distribution system, optimize infrastructure investment and reduce purchased power costs.	
● Maintain energy efficiency and demand side management programs targeting peak loads.	Peak demand savings from 2013 efficiency programs was 5.0 MW. Ongoing business programs targeting peak load include LightenUP and the Electric Efficiency Program. Custom projects offer the option of calculating rebates based on peak demand reductions. Residential programs also contribute to peak load reductions.
● Increase the power managed by load management, smart grid and distributed generation to at least 5% of 2005 system peak demand by 2015 and at least 10% by 2020.	Combined residential and commercial maximum realized load reduction for 2013 was 5.2 MW, or 1.7% of 2013 peak demand.

Goal 2: Support Community Greenhouse Gas Reduction Goal

(20% Reduction Below 2005 Levels by 2020 and 80% Reduction by 2050)

<table>
<tr><th>Objectives and Metrics</th><th>Progress</th></tr>
<tr><td colspan="2">Report Light and Power Greenhouse Gas (GHG) emissions inventory and results of reduction efforts.</td></tr>
<tr><td>● Light and Power aggregate 2012 emissions (ownership and operational control)</td><td>GHG Emissions Inventory (metric tons)
<table><tr><th></th><th>2005</th><th>2013</th><th>Percent Change</th></tr><tr><td>Ownership Boundary</td><td>1,725,390</td><td>1,541,859</td><td>-10.6%</td></tr><tr><td>Operational Boundary</td><td>1,198,083</td><td>1,128,418</td><td>-5.8%</td></tr><tr><td></td><td></td><td></td><td></td></tr></table></td></tr>
<tr><td>● Gross Energy Policy related GHG reductions</td><td>195,376 metric tons</td></tr>
<tr><td colspan="2">Continuously reduce energy use through verifiable energy efficiency and related programs.</td></tr>
<tr><td>● Achieve annual energy efficiency and conservation program savings of at least 1.5% of annual energy use (based on a three-year average history).</td><td>Customer (gross) energy efficiency program savings was 32,661 MWh in 2013, 2.2% of the community’s electric use. Utility savings (net) was 27,718 MWh, 1.9% of the community’s electric use.</td></tr>
<tr><td colspan="2">Pursue and secure renewable energy investments by balancing environmental benefits, cost effectiveness, impact on electrical system operations and local economic benefits.</td></tr>
<tr><td>● Maintain a minimum fraction of renewable energy in compliance with State of Colorado requirements.</td><td>4.0% renewable energy from rate-based purchases under Platte River Tariff 7. Utilities also purchases the renewable energy credits from local solar electric systems, which contributed an additional 0.2% towards the compliance with Colorado’s Renewable Energy Standard.</td></tr>
<tr><td>● Offer voluntary customer-focused renewable energy programs.</td><td>14,951 MWh from Green Energy program</td></tr>
<tr><td>● Increase the contribution of renewable energy to reach the 20% by 2020 carbon reduction goal, after accounting for the contributions of resource mix, energy efficiency, conservation, minimum renewable energy requirements and voluntary renewable energy programs.</td><td>5.2% total renewable energy (4.0% from rate base, 1.0% from voluntary program, 0.2% from local solar)</td></tr>
</table>

3. Enhance Local Economic Health

Objectives and Metrics	Progress
Maintain sufficient revenues through biennial budget planning for on-going operation and maintenance of the electric system and meet the projected requirements of the asset management plan.	
Operate and maintain regionally competitive electric service that promotes energy efficiency and conservation.	
Maintain competitive electric rates.	As of July 2013, Fort Collins typical residential customer bills were in the lowest 14% of 54 Colorado utilities reporting to the Colorado Association of Municipal Utilities (CAMU).
Maintain efficiency and conservation programs to help keep customers' energy bills affordable.	Affordability of Utilities electric service (percentage of area median income AMI): • Average Residential Customer: 1.2% of AMI • Low Income Customer: 1.5% of AMI • Very Low Income Customer: 2.1% of AMI • Extremely Low Income Customer: 3.9% AMI Fort Collins electric and natural gas affordability for average residential customer: 2.1% of AMI.
Leverage Utilities programs to create local and positive economic impacts.	
Strive to invest climate improvement monies locally in programs that have long-term positive impacts.	Efficiency programs in 2013 generated over $31 million in local economic benefits through reduced utility bills, incentives, leveraged investment and indirect activity.

4. Work closely with Platte River Power Authority members and staff to further City of Fort Collins' *Energy Policy* goals

Objectives and Metrics	Progress
Develop closer working relationships with the other Platte River cities. With other member cities, provide policy guidance to Platte River to:	
Develop long-term planning policies for Platte River that facilitate innovative solutions to future energy challenges.	Platte River's developed a Strategic Plan in 2013 with the intent that it be updated annually as detailed analyses of future scenarios are completed, new technologies evolve, and market opportunities develop. The plan is guide for developing an adaptive strategy to sustain Platte River Power Authority and the communities we serve for the next forty years and beyond. www.prpa.org/sources/strategic-plan-2
Diversify the portfolio of energy sources that serve the City.	Platte River executed an agreement to purchase an additional 32.5 megawatts of capacity from a wind farm to be constructed in eastern Colorado by the end of 2014.

Table 1: Fort Collins Utilities DSM Programs, Budgets, and Outcomes (2013)

Program	2013 incentive budget ($1,000)	Partici-pation (projects)	First year customer gross electric savings (MWh)	Natural gas savings (therms)	Water savings (Tgal)	Carbon savings (CO2 tons)	Cost of saved energy ($ per MWh levelized)
Business Efficiency	$1,781	697	12,592	4,348	7,495	10,347	$21
Home Energy Reports	$232	38,918	9,361	ND	ND	7,677	$19
ClimateWise	ND	15	4,374	ND	ND	3,587	$4
Consumer Products	$188	3,400	1,211	14,645	12,851	1,095	$48
Residential Lighting	$179	5,845	1,576	NA	NA	1,292	$26
Special Projects	$12	6,991	1,655	ND	ND	1,358	$7
Home Efficiency	$352	1,003	304	41,300	ND	520	$107
Conservation Corps	$33	272	123	2,205	1,995	92	$5
Design Assistance	$71	3	1,465	ND	ND	1,237	$8
Total	$2,848	57,144	32,661	62,498	22,340	27,205	$20 (average)

Note: ND = no data; NA = not applicable