City of Fort Collins 2012 Residential Environmental Program Series

Your Electric Bill: How to Cut Costs

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Michael Authier
Norm Weaver

Fort Collins Utilities

February 8, 2012





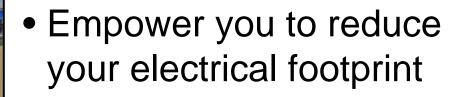
Tonight's Goals

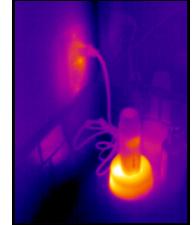


 Increase your knowledge and curiosity about your electricity use



 Provide ideas and tools to help you take control







Tonight's Program

- How much do I use?
- How does my usage <u>compare</u>?
- Where am I using electricity?
- How to reduce my electric usage?

BREAK + DOOR PRIZES

Putting the tools to work – example customer

Questions as we go



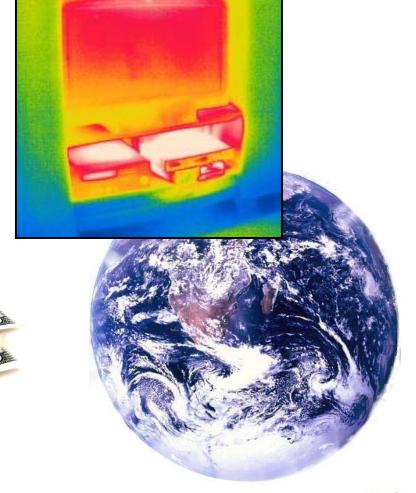
Feb 15: Custom Consultations

- Pre-register this week 970-221-6700
- Complete "Home Energy Inventory"
- Meet with Fort Collins Utilities staff
- Put tools to work, chart course for your situation



Why is This Important?

- Reduce waste
- Use resources wisely
- Help your bank account
- Meet community goals





Big Picture

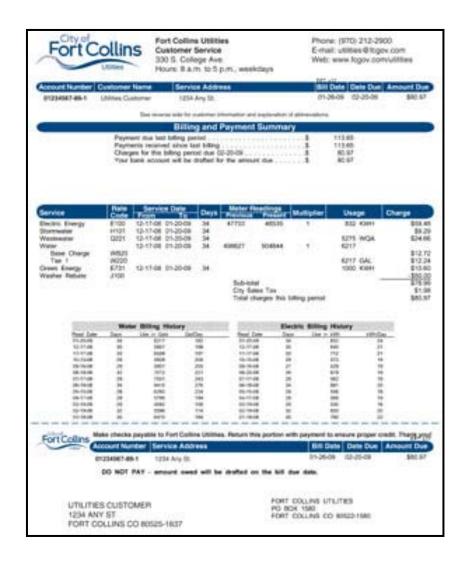
Your electric usage: It's up to you!

(Your electric utility can help.)

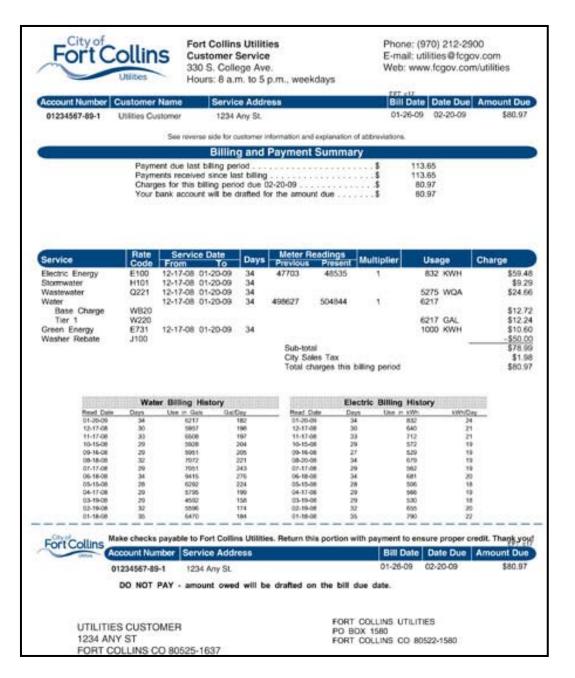


How Much Electricity Do I Use?

Did You Bring Your Electric Bill?







City bill includes ALL City of Fort Collins utility services:

- Electricity
- Stormwater
- Wastewater
- Water

NOT Natural Gas





Fort Collins Utilities **Customer Service**

330 S. College Ave. Hours: 8 a.m. to 5 p.m., weekdays Phone: (970) 212-2900 E-mail: utilities@fcgov.com Web: www.fcgov.com/utilities

01234567-89-1 Utilities Customer Service Address 1234 Any St.

Bill Date Date Due Amount Due 01-26-09 02-20-09 \$80.97

\$80.97

See reverse side for oustomer information and explanation of abbreviations.

Billing and Payment Summary

Payment due last billing period	113.65
Payments received since last billing	113.65
Charges for this billing period due 02-20-09	80.97
Your bank account will be drafted for the amount due \$	60.97

CONTRACT OF THE PARTY OF THE PA	Rate	Service Date	Davis	Meter R	eadings	A Company	7600000	Decree 1
Service	Code	From To	Days	Previous	Present	Multiplier	Usage	Charge
Electric Energy	E100	12-17-08 01-20-09	34	47703	48535	1	832 KWH	\$59.48
Stormwater	H101	12-17-08 01-20-09	34					\$9.29
Wastewater	Q221	12-17-08 01-20-09	34				5275 WQA	\$24.66
Water		12-17-08 01-20-09	34	498627	504844	1.0	6217	
Base Charge	WB20							\$12.72
Tier 1	W220						6217 GAL	\$12.24
Green Energy	E731	12-17-08 01-20-09	34				1000 KWH	\$10.60
Washer Rebate	J100							-\$50.00
				Sub-toti	M			\$78.99
				City Se	les Tax			\$1.98

City Sales Tax Total charges this billing period

Water Billing History					
Read Daile	Deva	Use in Gale	Gal/Day		
01-29-09	34	6217	182	_	
12-17-08	30	5957	198		
11-17-08	33	6508	197		
10-15-00	29	5929	204		
09-16-08	29	5951	205		
08-18-08	32	7072	221		
07-17-08	29	7051	243		
06-18-08	34	9415	276		
05-15-08	26	6292	224		
04-17-08	29	5795	100		
03-19-06	29	4502	158		

3795 4592 1696

	Electric	Billing	History	
Read Date	Days	Use in	kWh.	KNY/Day
01-20-09	34	22.1-12.12	832	.24
12-17-08	30		640	21
11:17:00	33		712	21
10-15-08	29		572	19
09-16-08	27		529	19
08-20-08	34		679	19
GP-17-08	29		562	79
06-18-08	34		681	30
05-15-09	28		506	18
04-17-08	29		566	19
03-19-08	29		530	18
02-19-08	32		655	20
01-10-08	35		790	22

Fort Collins

04-17-08 03-19-08 02-19-08

Make checks payable to Fort Collins Utilities. Return this portion with payment to ensure proper credit. Thank you

Account Number	Service Address	Bill Date	Date Due	Amount Due
01234567-89-1	1234 Any St.	01-26-09	02-20-09	\$80.97

DO NOT PAY - amount owed will be drafted on the bill due date.

UTILITIES CUSTOMER 1234 ANY ST FORT COLLINS CO 80525-1637 FORT COLLINS UTILITIES PO BOX 1580 FORT COLLINS CO 80522-1580

Electric billing history



Electric Billing History

Read Date	Days	Use in kWh	kWh/day	
10/05/11	33	377	11	
09/02/11	28	687	25	
08/05/11	30	824	27	
07/06/11	33	693	21	
06/03/11	35	444	13	
04/29/11	28	380	14	The section
04/01/11	28	469	17	Use in
03/04/11	30	715	24	kWh,
02/02/11	28	719	26	•
01/05/11	30	637	21	past 13
12/06/10	33	571	17	months
11/03/10	29	392	14	months
10/05/10	28	332	12	



kWh = KiloWatt-hour

Energy Use = Power x Time

Watt-hours = Watts x Hours



kiloWatt-hours = Watt-hours / 1000

Reference: 1 kWh costs about 8.5 cents in FC



kWh = KiloWatt-hour

Example: 100W light bulb, 5 hrs/day

Power = 100 Watts

Time = 150 hrs/month



Energy Use = 100 Watts x 150 hrs/month

= 15,000 Watt-hours/month

= 15 kWh/mo

Cost: About \$1.30 per month, \$15 per year



My Average Usage

Electric Billing History

Read Date	Days	Use i	n kWh	kWh/day
10/05/11	33	3	77	11
09/02/11	28	6	87	25
08/05/11	30	8:	24	27
07/06/11	33	6	93	21
06/03/11	35	4	44	13
04/29/11	28	3	80	14
04/01/11	28	4	69	17
03/04/11	30	7	15	24
02/02/11	28	7	19	26
01/05/11	30	6	37	21
12/06/10	33	5	71	17
11/03/10	29	3	92	14
10/05/10	28	3	32	12

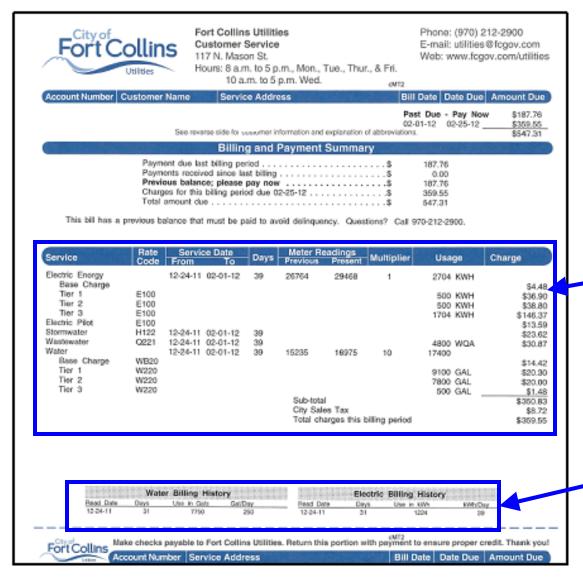


Average usage: = Sum 12 months, divide by 12

Annual average = 576 kWh per month



City Bill Format Changing



More detail on individual charges

Less billing history



Billing History Options

- Keep monthly record
- Call Fort Collins Utilities
 970-212-2900

Electric Billing History					
Read Date	Days	Use in kWh	kWh/day		
10/05/11	33	377	11		
09/02/11	28	687	25		
08/05/11	30	824	27		
07/06/11	33	693	21		
06/03/11	35	444	13		
04/29/11	28	380	14		
04/01/11	28	469	17		
03/04/11	30	715	24		
02/02/11	28	719	26		
01/05/11	30	637	21		
12/06/10	33	571	17		
11/03/10	29	392	14		
10/05/10	28	332	12		

Stay tuned for on-line access



How Does My Usage Compare With Others?

Step 1 = My Usage

576 kWh/month



Average monthly electricity usage



576 kWh per Month

Low?

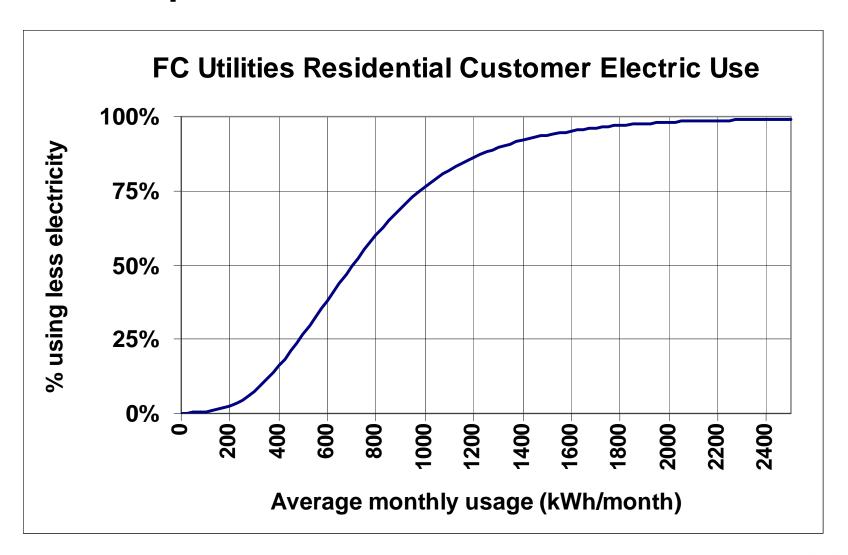
High?



Middle of the pack?

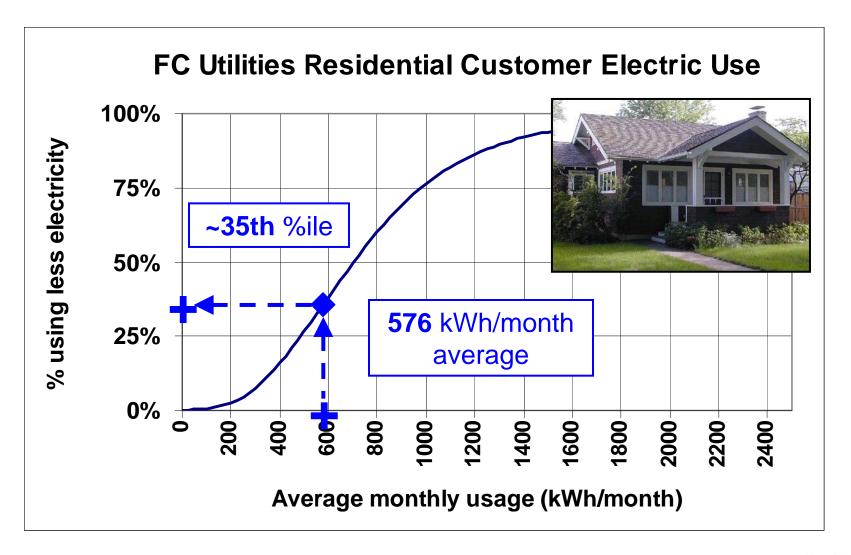


Step 2 = Benchmark Data



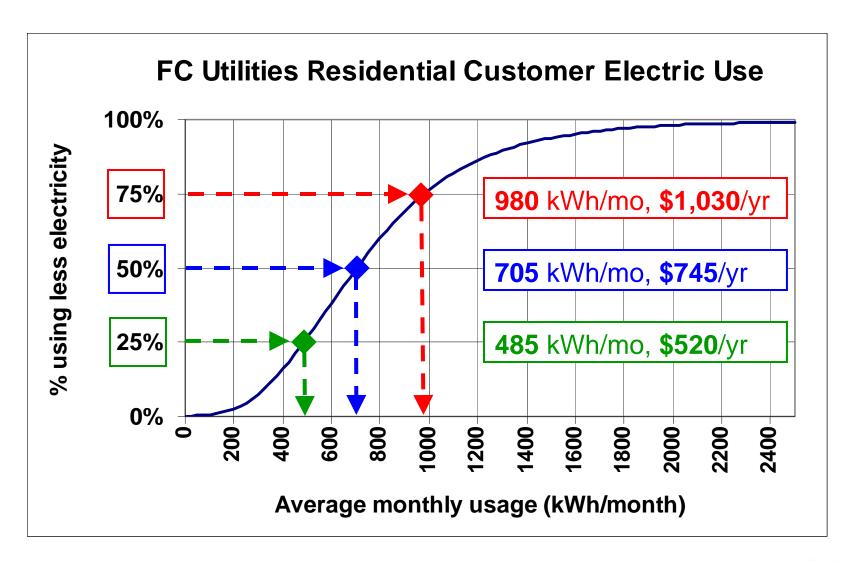


Step 2 = Benchmark Data



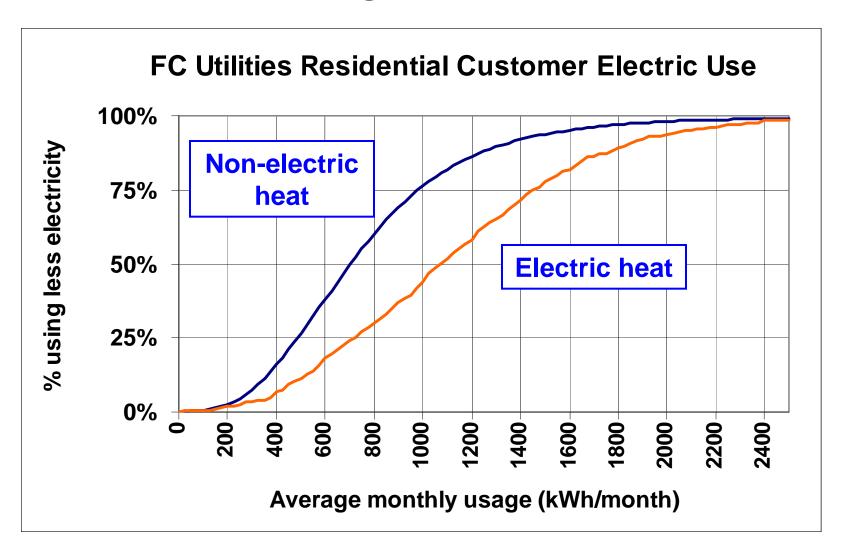


Benchmark Data



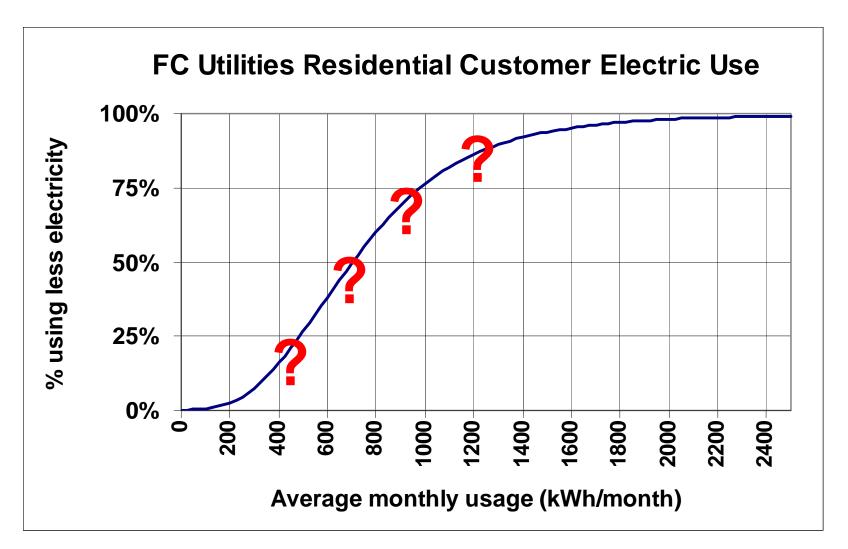


Use the Right Benchmark





My Average Usage?





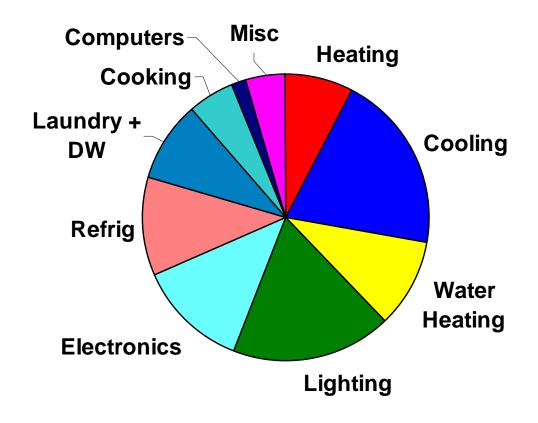
Opportunities





Where Am I Using Electricity?

Residential Electricity Use



National Data

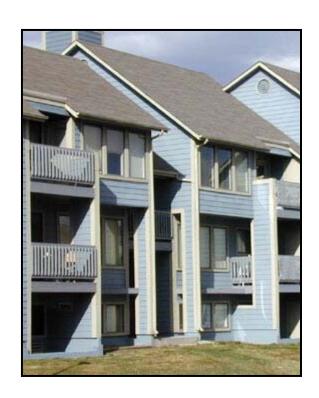
Buildings Energy Data Book (DOE) Electricity Consumption by End Use



Residential Electricity Use

- Every house is different
- Lifestyles vary
- Fort Collins climate





Most important: MY house!



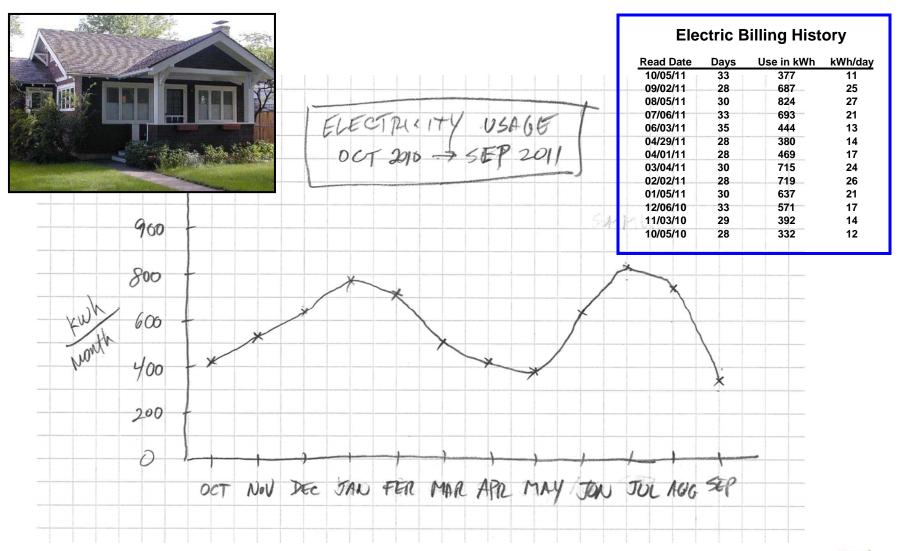
Look for Clues

Electric Billing History

Read Date	Days	Use in kWh	kWh/day	
10/05/11	33	377	11	
09/02/11	28	687		
08/05/11	30	824		
07/06/11	33	693		
06/03/11	35	444	NE THE	
04/29/11	28	380		
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10/05/10	28	332	12	

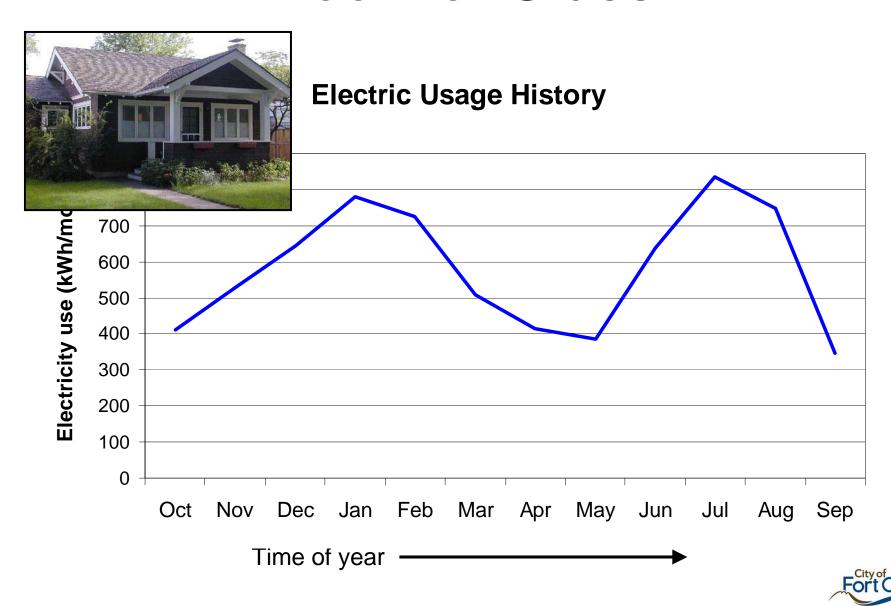


Look for Clues

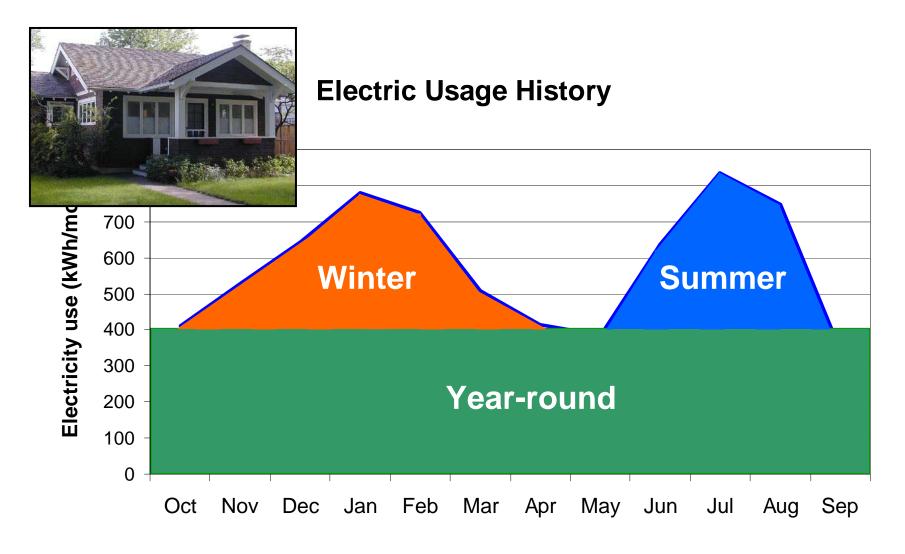




Look for Clues



First Cut = Seasonal





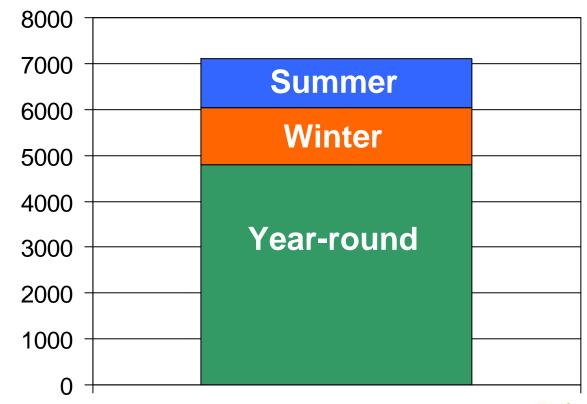
First Cut = Seasonal



Annual Electric Usage Breakdown

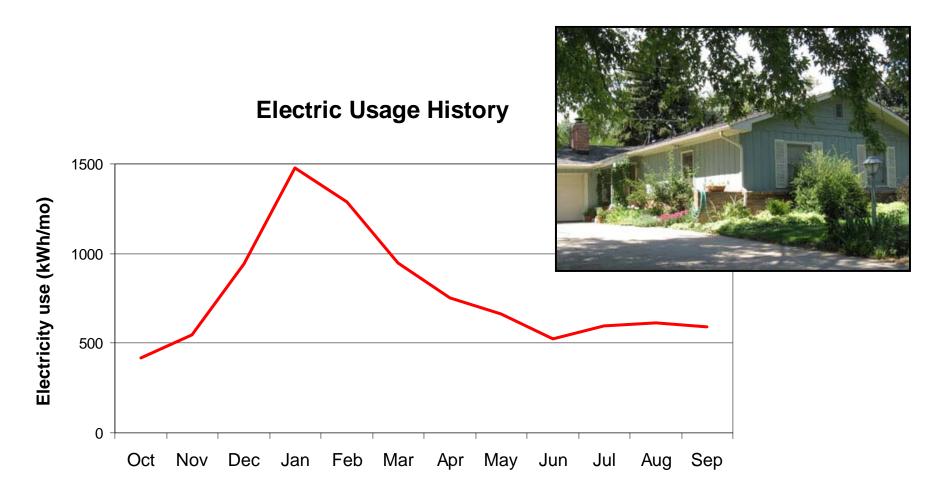
Where to look first for savings?

Electricity Use (kWh/yr)



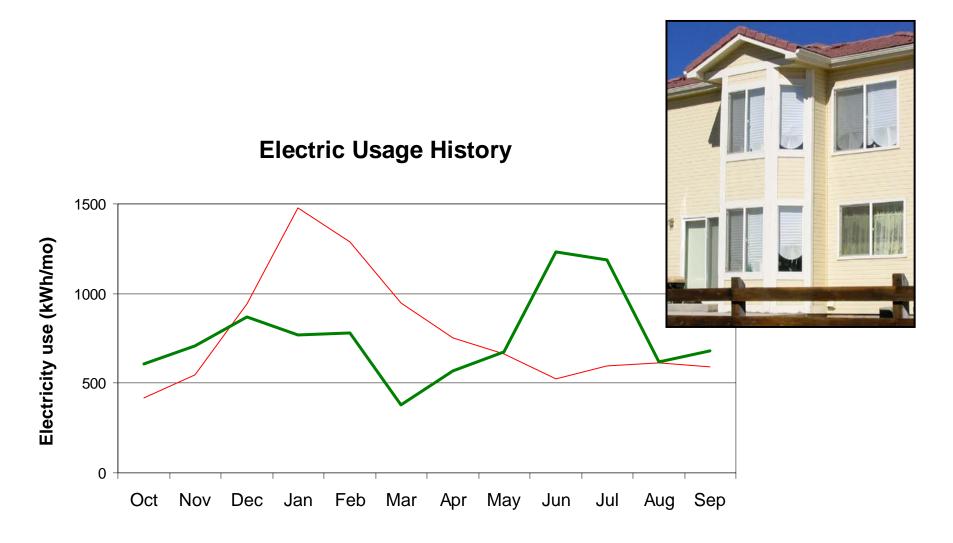


Every House is Different



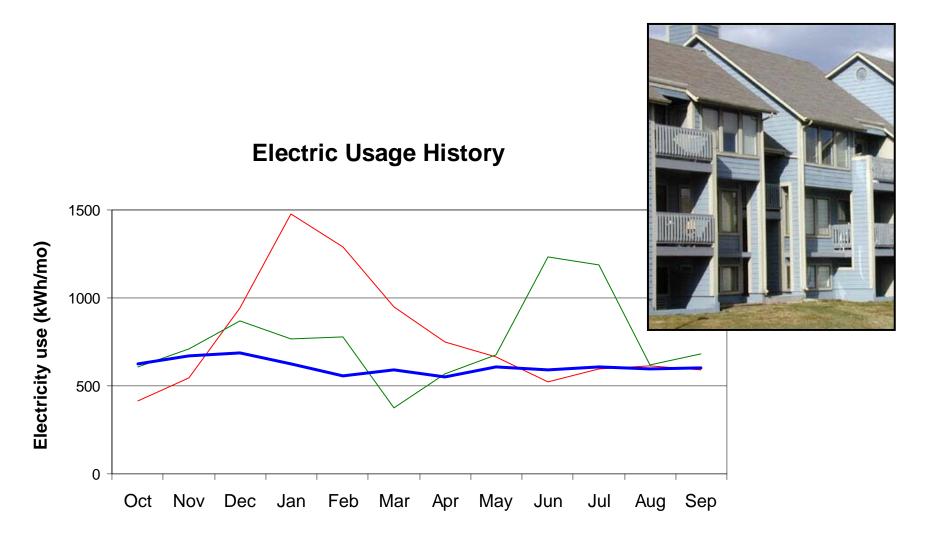


Every House is Different



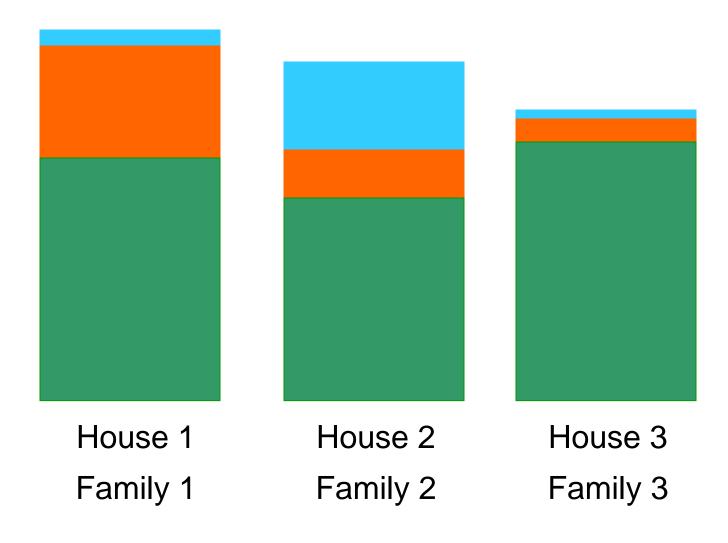


Every House is Different



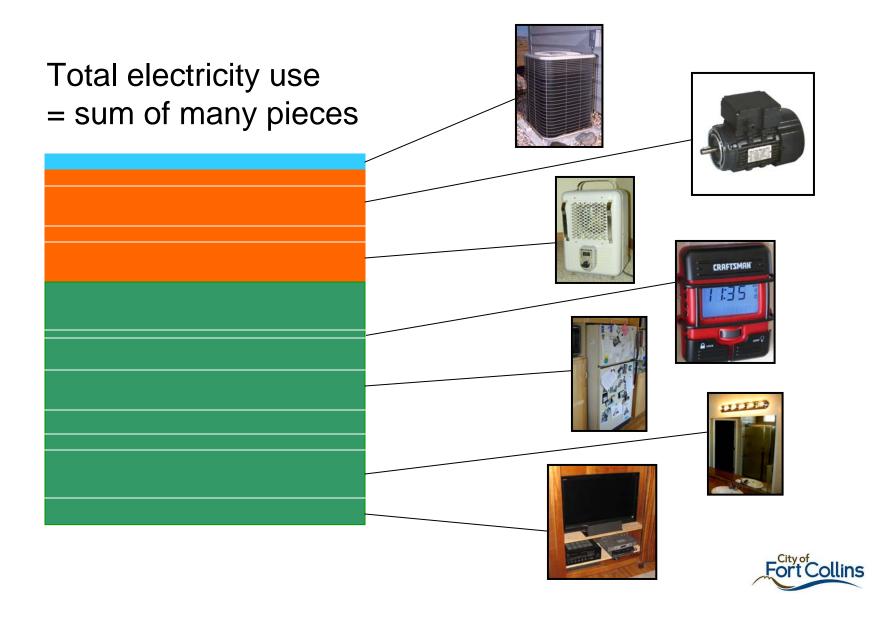


Where to Look First?





Second Cut = Energy-Using Items



Energy-Using Items

How much does each item use?

More accurate
More complex

Labels (Energy)

Tables (Power)

Calculators (Power & Time)

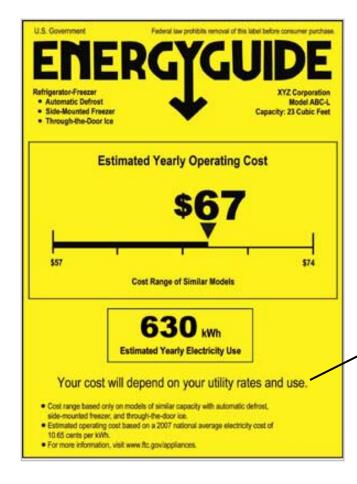
Measurements (Power & Time)



Labels

(Energy)

New appliances



"Your cost will depend on your utility rates and use."



Tables

(Power)

General ranges

Typical Wattages of Various Appliances

Here are some examples of the range of nameplate wattages for various household appliances:

- Aquarium = 50-1210 Watts
- Clock radio = 10
- Coffee maker = 900-1200
- Clothes washer = 350-500
- Clothes dryer = 1800-5000
- Dishwasher = 1200 2400 (using the drying feature greatly increase energy consumption)
- Dehumidifier = 785
- Electric blanket- Single/Double = 60 / 100
- Fans
 - o Ceiling = 65-175
 - Window = 55-250
 - Furnace = 750
 - Whole house = 240-750
- Hair dryer = 1200-1875
- Heater (portable) = 750-1500

Clothes washer 350 to 500 Watts

Clothes dryer 1800 to 5000 Watts



Calculators

Calculate your electric cost Device / Wattage Amount used per day 100 (100-watt light bulb) 5 hrs./day Cost of Electric. Days used per month 7¢ (ID,ND,NE,WA,WV) 30 Don't rely on these results without Kilowatt Hours used: 15 kWh/mo. understanding the limitations. For example, your computer might use more Cost per month: \$ 1.05 or less electricity than my computer. (See the accompanying article to figure out Cost per year: \$ 12.60 how much electricity something uses.) Also, your cost of electricity may be wrong even if you choose the correct state, because electrical rates vary within a state. (More on how they charge you.)

(Power & Time)

Varying formats, detail

fcgov.com/reps



Measurements

Appliance meters

- \$25 to \$100+
- Individual items (with plugs)
- Power (Watts)
- Energy use (kWh)

Available for loan: Poudre Libraries

Fort Collins Utilities Service Center

fcgov.com/reps

(Power & Time)



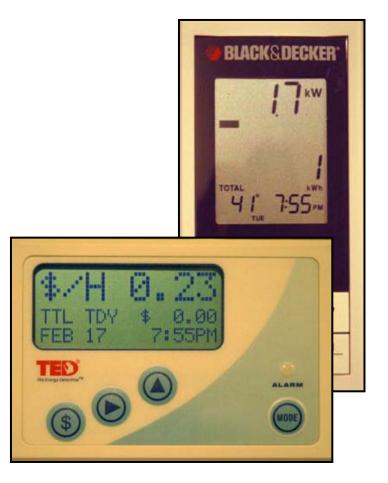


Measurements

(Power & Time)

Whole-house meters

- \$100 to \$150
- Power (Watts)
- Energy use (kWh)
- * Some require special expertise to install



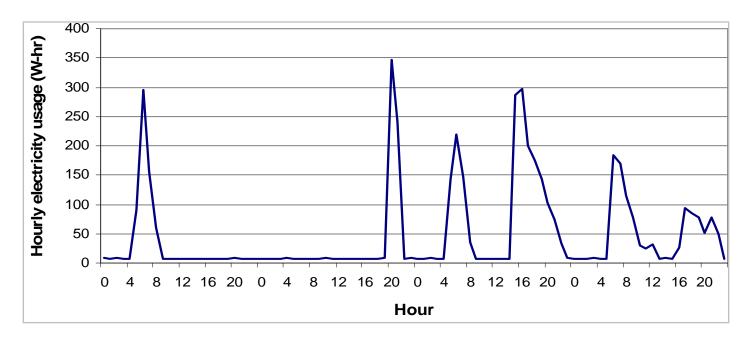


Measurements

Data-logging

(Power & Time)

- What happens when?
- Many options





Home Utility Use Estimator

Created by Fort Collins Utilities to help customers identify how they use electricity (and other utilities).

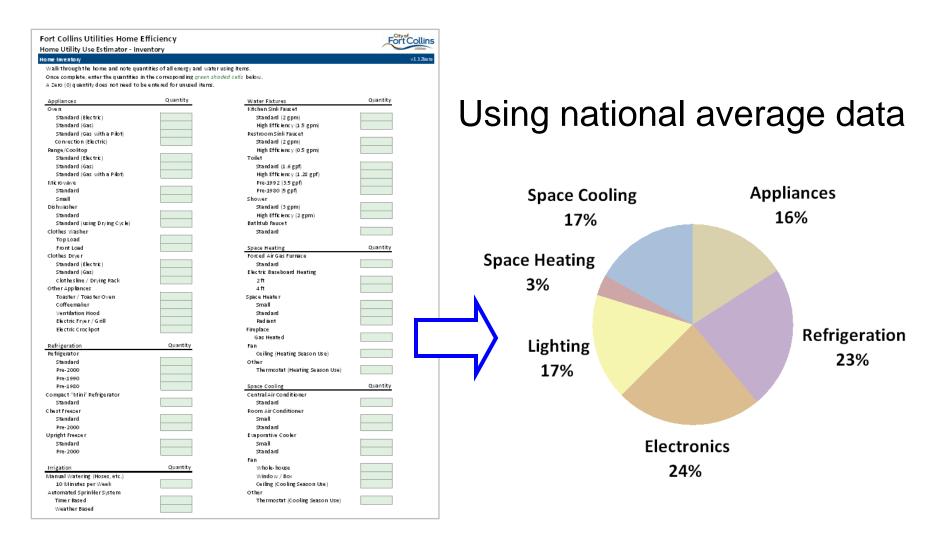








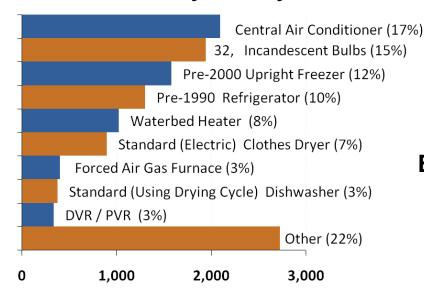
Home Utility Use Estimator





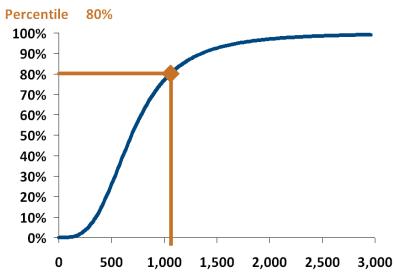
Home Utility Use Estimator

Annual Electricity Use by Item



Other useful information

Electric Use Comparison





Putting the Tools to Work

The Smith Family



Wall

Info

Photos (79)

Notes

Friends

Subscriptions

Needs Review

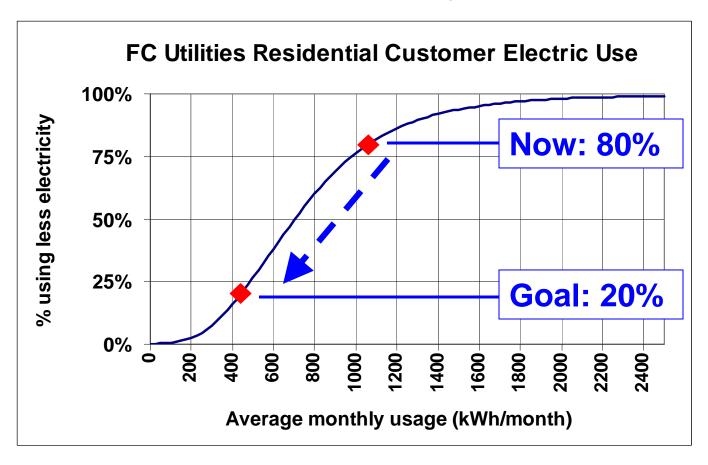
"Family of 2.6" 1700 sq ft home 1,050 kWh/month





The Smith Family

2012 resolution: Cut electricity use



How can we help? Will it be easy?



Break

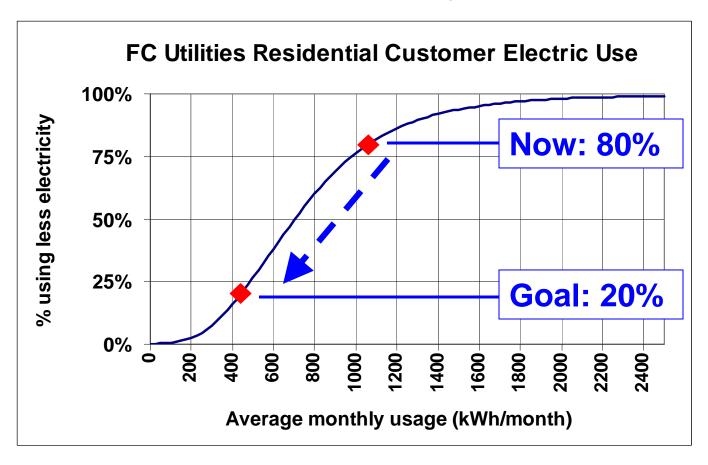
Start thinking about the Smith Family's challenge . . .

... They will need your help!!



The Smith Family

2012 resolution: Cut electricity use

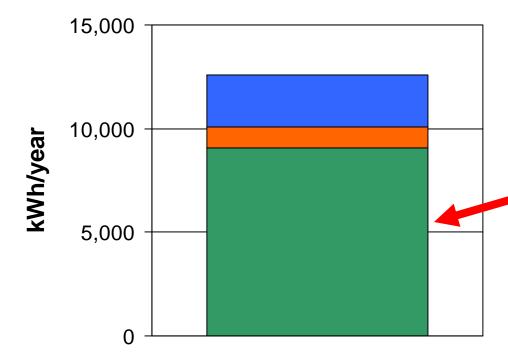


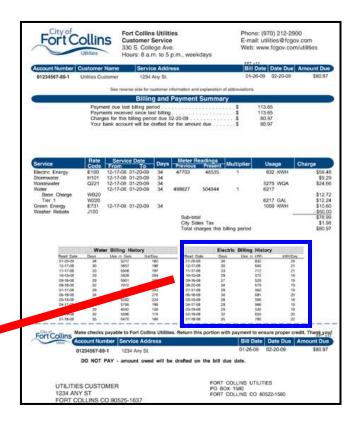
How can we help? Will it be easy?



Smith Family Starting Point

Annual Electricity Usage

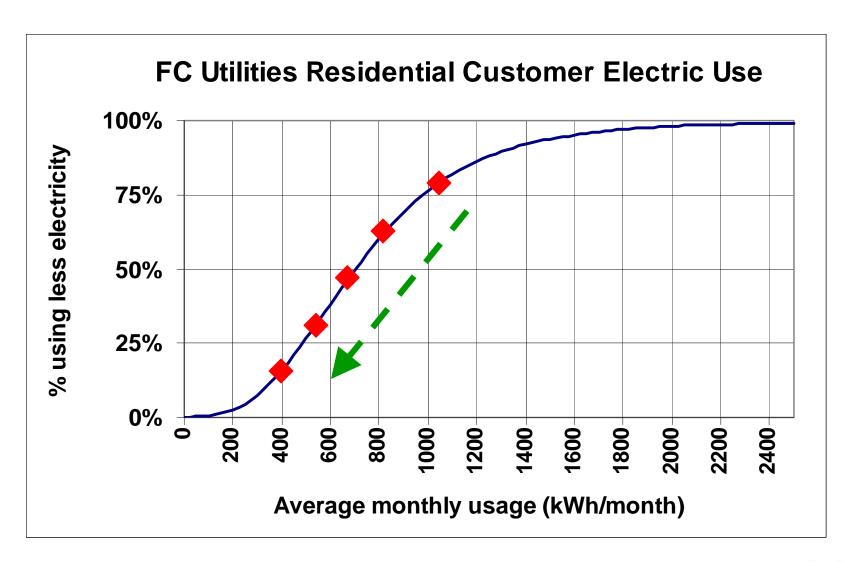








Take Control





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