

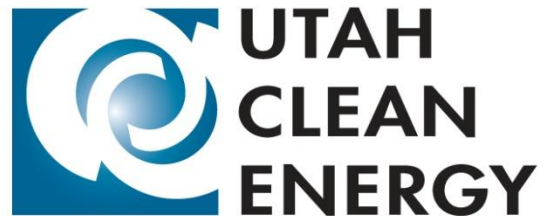


Energy Efficiency: Smart & Sexy Energy

Utah Renewable Energy Conference

March 27, 2010

Sara Baldwin
Senior Policy & Regulatory Associate

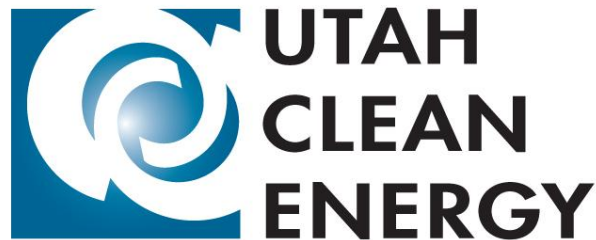


www.utahcleanenergy.org



We Partner to Build the New
CLEAN ENERGY ECONOMY

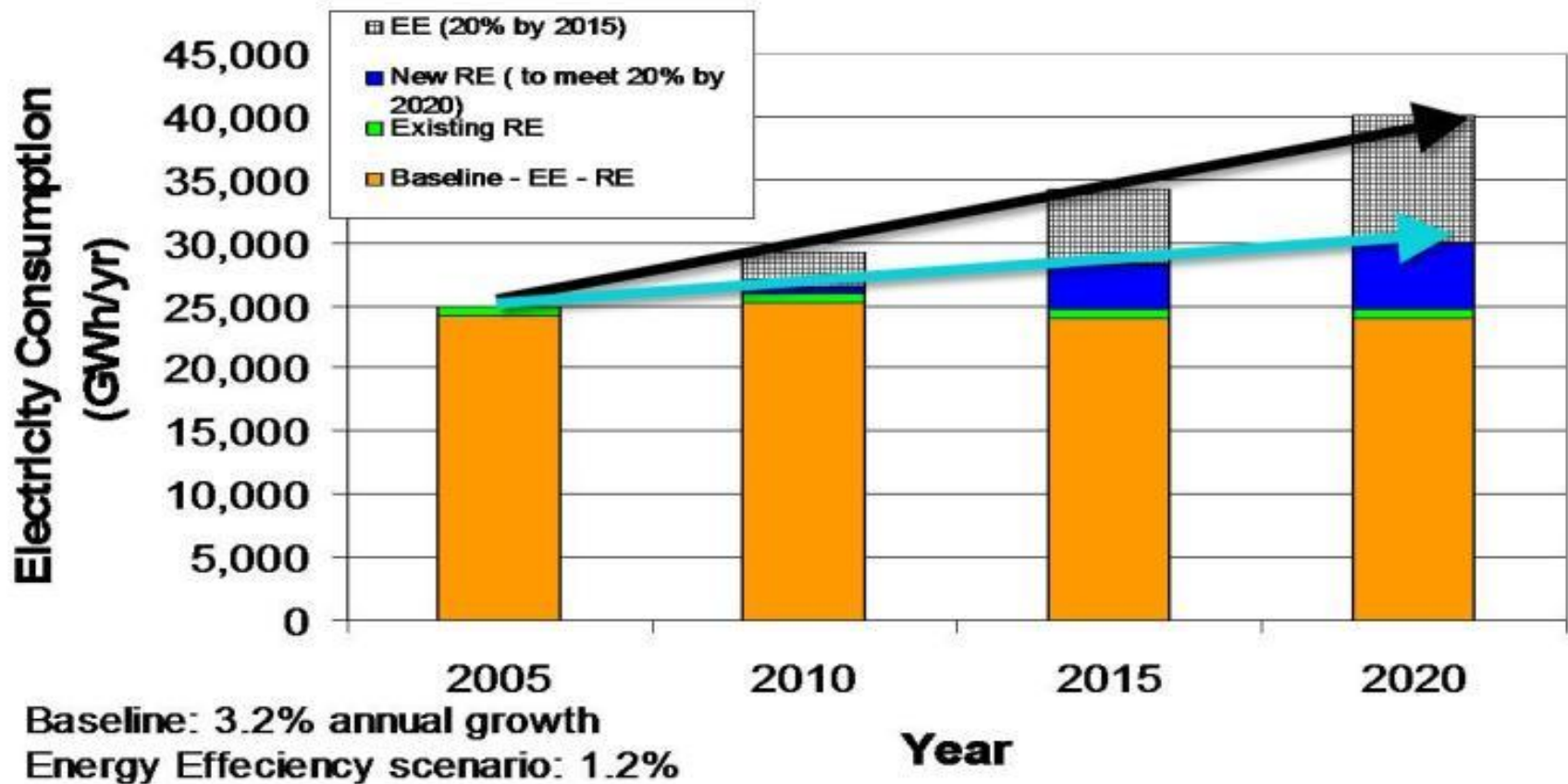
photo by Sam Scholes



- Non-Profit Organization since 2001
- Public Education & Outreach
- Policy and Regulatory Advocacy
- Diverse partnerships
- Solutions-oriented approach

Utah's Demand is on the Rise; Energy Efficiency Reduces Demand

Utah Electricity Savings with 20% by 2015 EE Goal and Impact of 20% by 2020 RPS



Energy Demand vs. Peak Demand

“The demand for electricity during the **summer peak season is increasing at twice the rate** of the growth in the area. The **single biggest impact** on the growth of that peak demand is the conversion from evaporative cooling **to central air conditioning** in the area.”

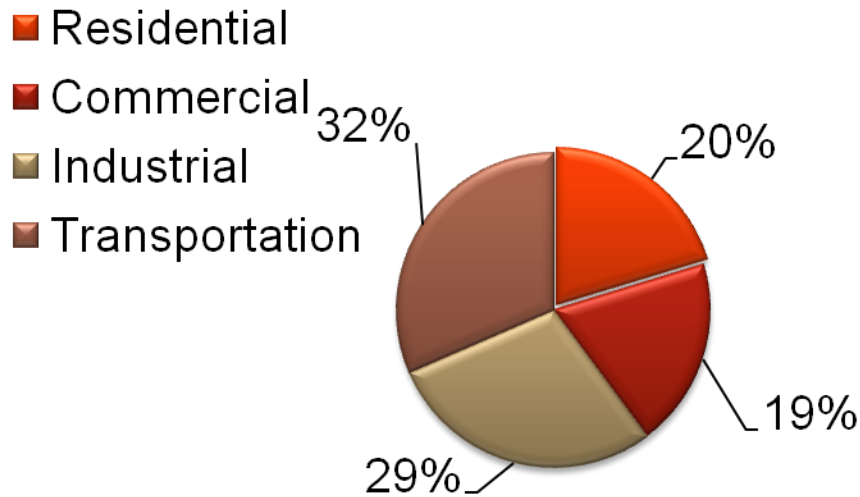
- *Rich Walje, President Rocky Mountain Power*

Energy demand: increasing 3% per year

Peak demand: increasing 6% per year

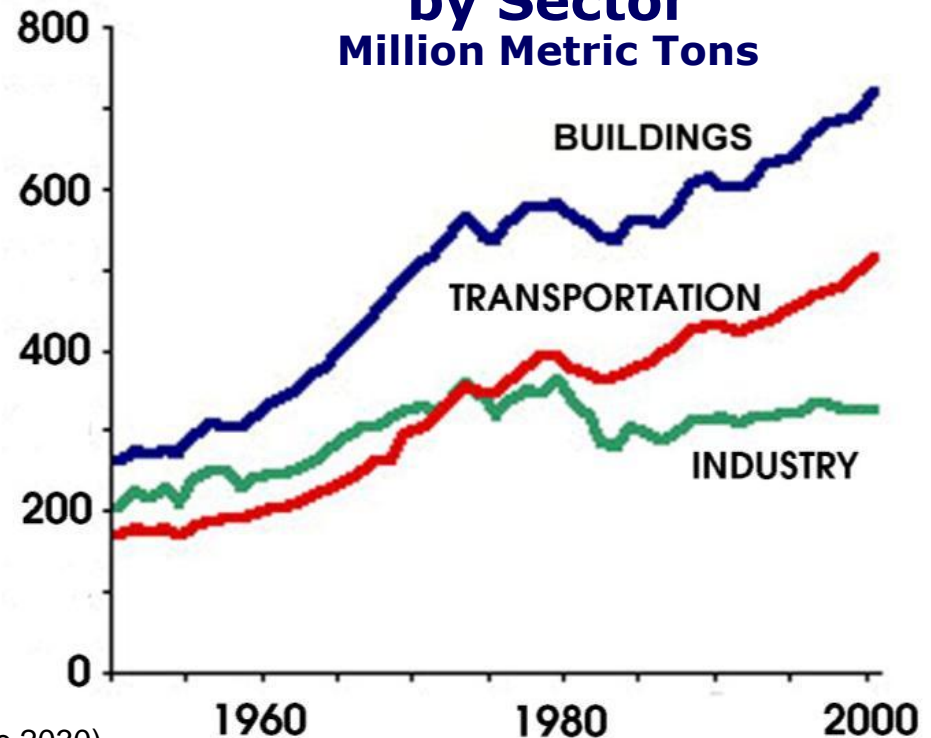
Building Efficiency: An Opportunity We Can't Miss

Utah Energy Consumption by End Use (Trillion Btu), 2006



Source: Utah Geological Survey

U.S. CO2 Emissions by Sector Million Metric Tons



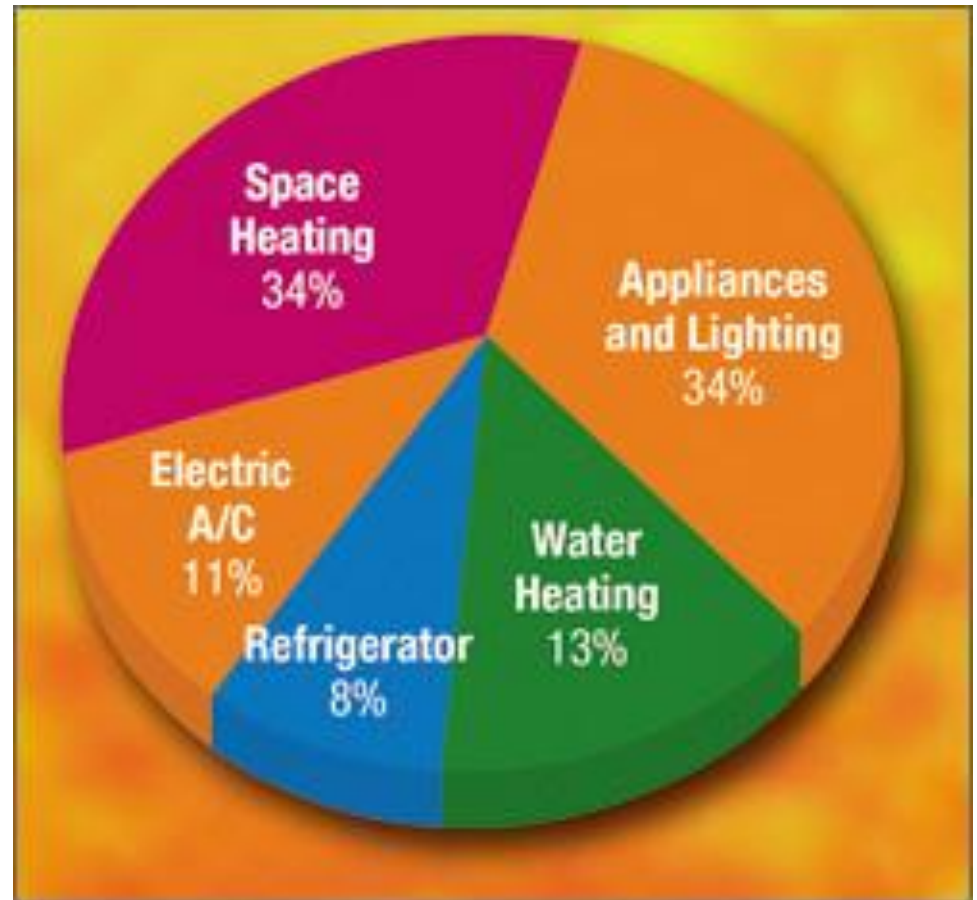
Source: Energy Information Administration Statistics (Architecture 2030)

Energy Use at Home

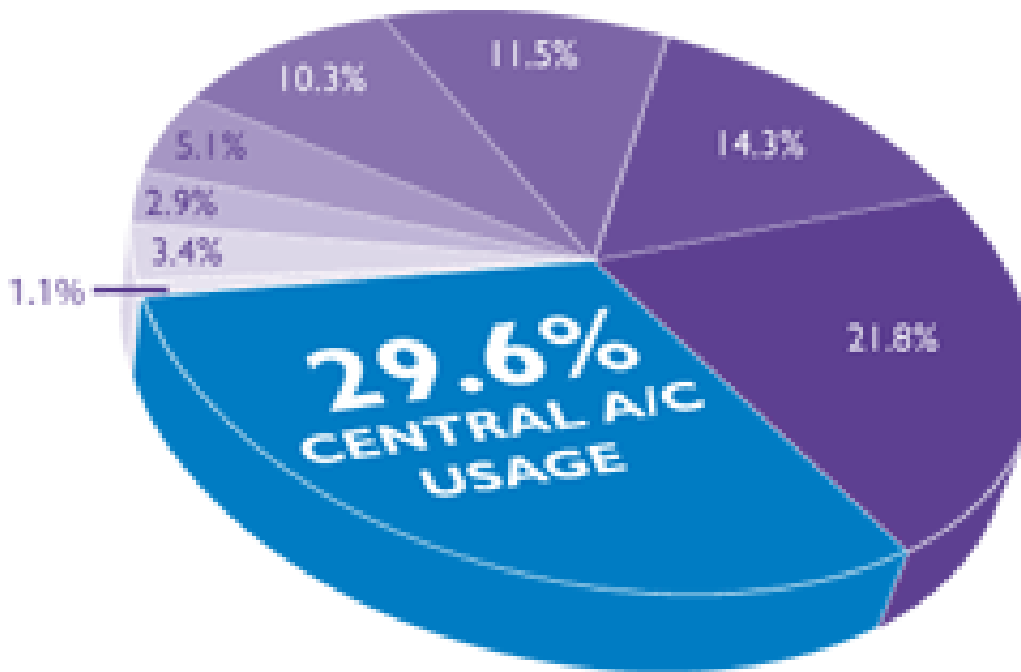
**Huge opportunities
for savings!**











The average Utahn
consumes:

- **800 kWh/month of electricity**
- **6.7 dcthm/month of natural gas**



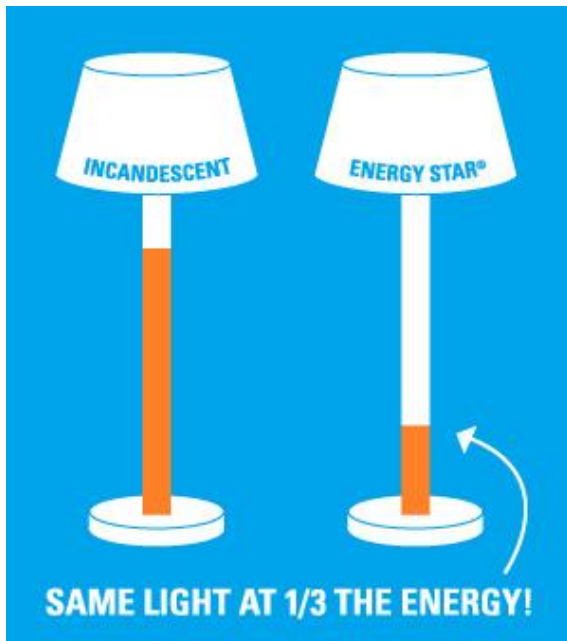
Electricity Use at Home



Air conditioning		29.6%
Refrigerator/Freezer		21.8%
Plasma TV		14.3%
Lighting		14.3%
Electric Range/Oven		11.5%
Dryer		10.3%
Non-Plasma TV		5.1%
Computer		2.9%
Dishwasher		3.4%
Washer		1.1%



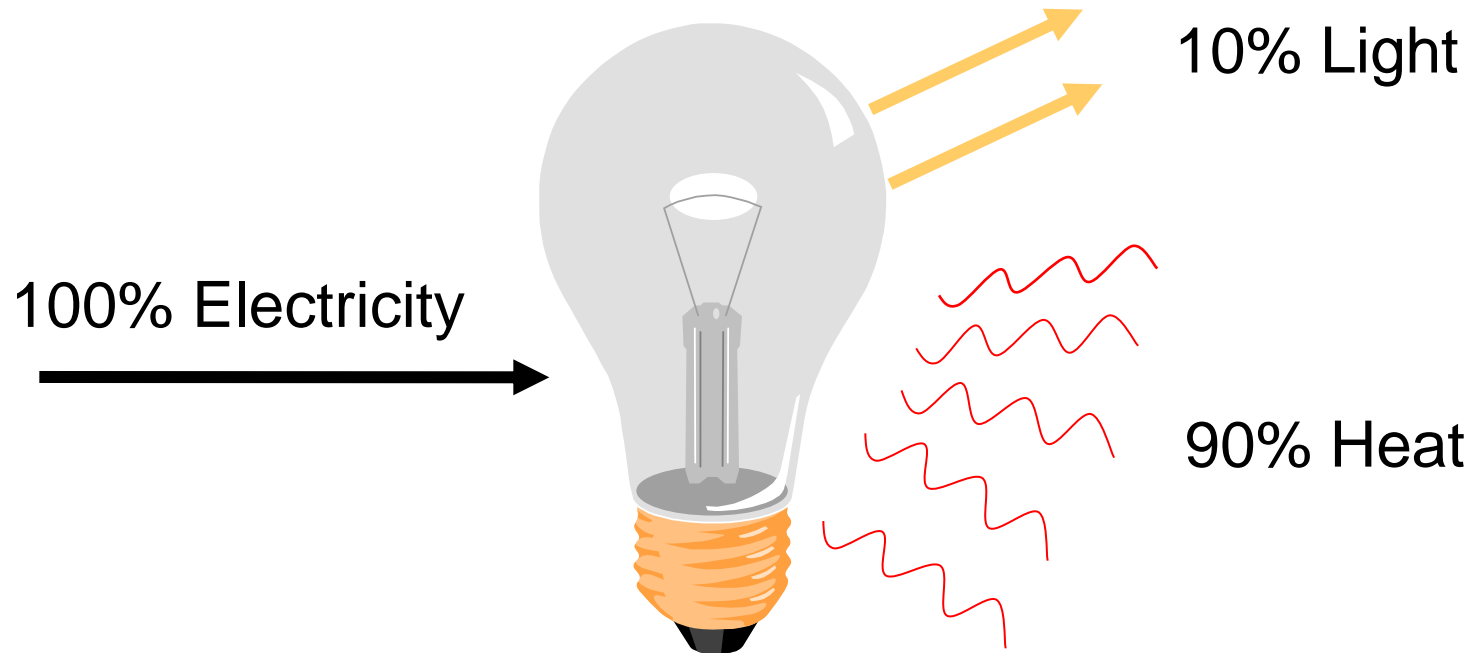
Know the Difference: Energy Efficiency vs. Conservation



Courtesy of EPA Energy Star



Example: Lighting



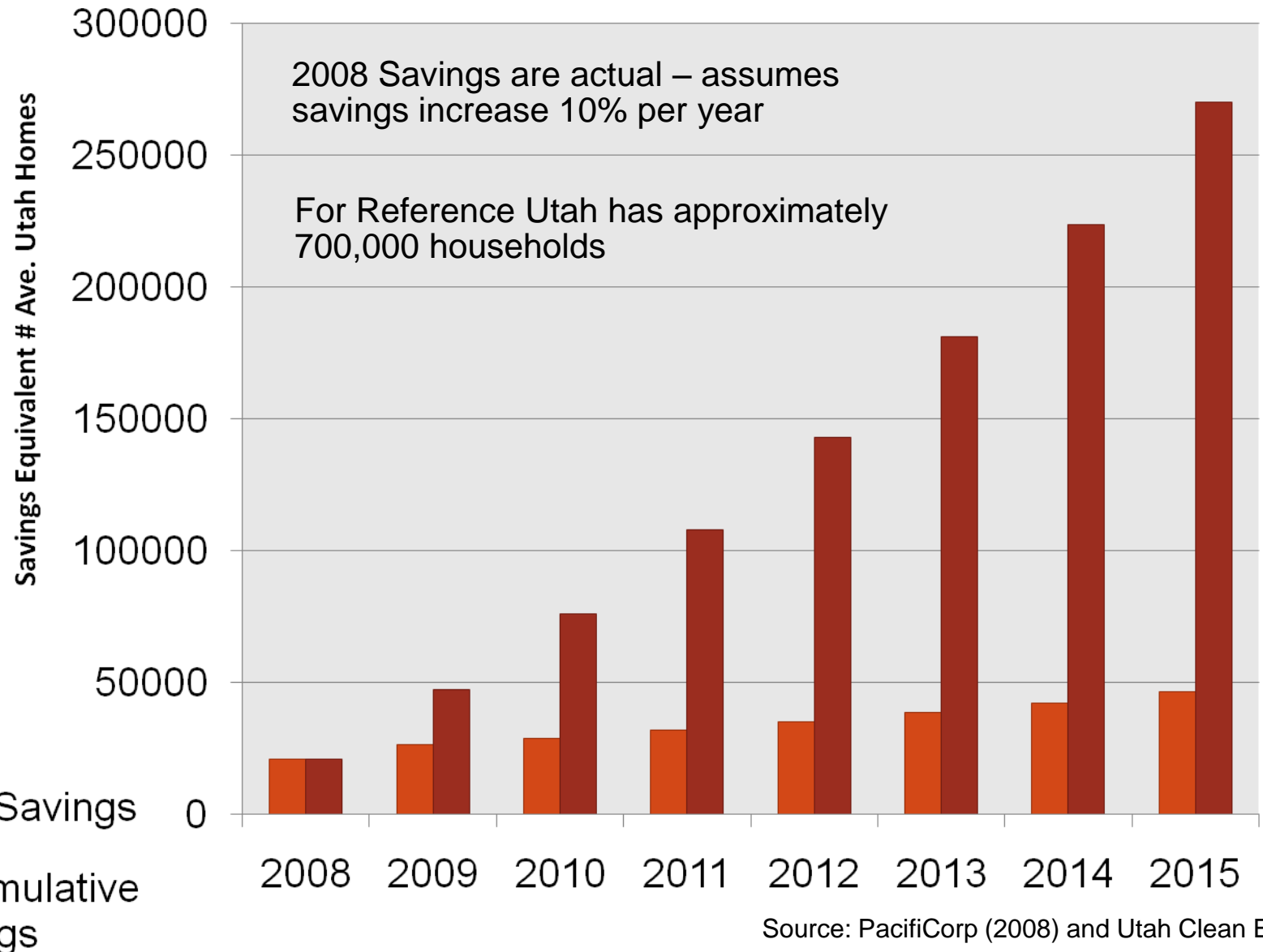
CFLs are much more efficient at converting electricity into visible light
– can save 50-75% of energy!

NOW LEDs are entering the market that achieve higher efficiency with good lumen output.

The Consumer Dilemma

- So many choices – which one is best for you?
- Not all stores/contractors understand efficiency and may have incentives to sell you inefficient or over-sized products
- Products on sale or lower in price (compared to efficient product) may be cheap today, but what about tomorrow and 5-10 years from now?
- Bigger, better, faster, more mentality
- Change is hard
- Upfront investments may be higher, more time commitment to achieve positive R.O.I
- Perceived value vs. actual value

Energy Savings from 1-year of Energy Efficiency!



Source: PacifiCorp (2008) and Utah Clean Energy

What is the cost of NOT investing in energy efficiency?



How do you compare?

Average Utah household energy consumption:

- Natural gas
 - 6.7 decatherms/month
 - 80.4 decatherms/year
- Electricity:
 - 800 kWh/month
 - 9600 kWh/year

*Invest in a
KILL A WATT™
to determine
how much your
home gadgets
use*



Account: _____

Paid Deposits on file: \$ 286.22-

Thank you for your patronage. Your prompt payment assists us in providing our customers with high-quality natural gas service.

Account Summary as of: October 13, 2006

Previous Balance Due - 10/04/2006	14.61
Payment Received - 10/4/2006	-14.61
Current Charges - Gas Service	23.15
Total Amount Due Upon Receipt	\$ 23.15

1% monthly interest (12% annually) charged on balance on or after 11/06/2006

Service Address: 1014 2Nd Ave, Salt Lake City, UT 84103

2.577257 0.000000 154.550000 235.500000

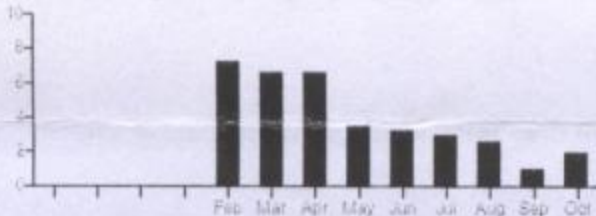
Commercial Gas Service UTGS1 Rate

Comparison	Last Year	This Year
Decatherms/Day	N/A	0.06
Dollars/Day	\$0.00	\$0.77

Service from 9/12/2006 - 10/11/2006

Charge for Gas Used (Avg cost per DTH \$ (8.85263))	16.82
Basic Service Fee Total	5.00
Franchise Fee (2%)(Salt Lake City)	0.44
Municipal Energy Tax (4%)(Salt Lake City)	0.89
Current Gas Billing	23.15

DTH Usage History



Meter ID	Current Meter Read		Previous Meter Read		Days	Dial Difference	Volume Multiplier	Billed Usage
	Date	Reading	Date	Reading				
26049397	10/11/2006	7528	9/11/2006	7507	30	21 CCF	0.092263	1.9 DTH

Questions about your bill: **1-888-221-7070**
 24 hours a day, 7 days a week
www.rockymtnpower.net

 BILLING DATE: **Oct 31, 2006**

ACCOUNT NUMBER:

DATE DUE: Nov 27, 2006
AMOUNT DUE: \$14.68
Your Balance With Us

Previous Account Balance	16.01
Payments/Credits	-33.92
New Charges	+32.59
Current Account Balance	\$ 14.68

Payments Received

DATE	DESCRIPTION	AMOUNT
Oct 27, 2006	Payment from Auto Pay through Checkfree - Thank you	33.92
Total Payments		\$ 33.92

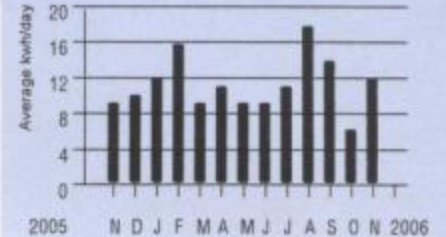
Detailed Account Activity
ITEM 1 - ELECTRIC SERVICE

Schedule 1

METER NUMBER	SERVICE PERIOD		ELAPSED DAYS	METER READINGS		METER MULTIPLIER	AMOUNT USED THIS MONTH
	From	To		Previous	Current		
39429086	Sep 29, 2006	Oct 30, 2006	31	32955	33325	1.0	370 kwh

NEW CHARGES - 11/06

	UNITS	COST PER UNIT	CHARGE
Basic Charge - 1P			0.98
Energy Charge Summer 1st Block for 1 day(s)	12 kwh	0.0693600	0.83
Energy Charge Winter Rate for 30 day(s)	358 kwh	0.0693600	24.83
Customer Efficiency Services		0.0216000	0.55
Home Electric Lifeline Program			0.10
City Franchise Tax		0.0600000	1.64
Utah Sales Tax		0.0385000	1.11
Total New Charges			30.04

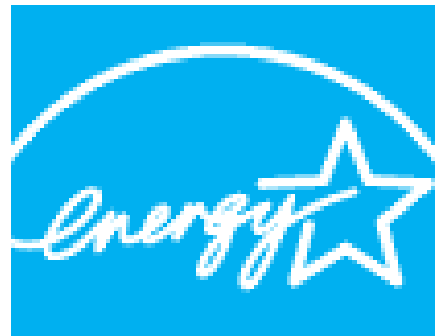
Historical Data - ITEM 1

Your Average Daily kwh Usage by Month

PERIOD ENDING	NOV 2006	NOV 2005
Avg. Daily Temp.	51	54
Total kwh	370	253
Avg. kwh per Day	12	9
Cost per Day	\$0.96	

Looking for ways to pay?

Try ePay and pay online with your checking account, it's free! Or, pay by phone for a small fee by dialing 1-800-672-2405 for credit card payments and 1-800-285-9234 to use your checking account.

Quick Tips and Resources



Tip 1: Beware of Phantom Loads

- Energy still being used in the “off” mode
- Anything with a standby light, charger, remote control, or clock
 - Computer Screen
 - Cell phone, ipod, and computer chargers
 - CD or DVD players
 - Televisions
 - Video game consols
- **Use a Power Strip** and be sure to switch it off when not in use
- **Unplug it** when not in use!

TIP 2: Perform an Energy Audit

- **ENERGY STAR** - Home Energy Yardstick: **FREE**
<http://www.energystar.gov>
- **Questar** – www.thermwise.com
 - Mail-in: **FREE (download on-line)**
 - In person: **\$25** (*refunded as credit upon implementation of recommendations*)
 - *To Schedule Appt: 1-800-695-7375*
- **Rocky Mountain Power** – www.rocky
 - Mail-in Energy Audit: **FREE**
 - Online Energy Audit : **FREE**
- **Home Energy Raters**
 - High tech in-home efficiency audit: **\$300 - \$500**



TIP 3: Don't heat the street

- **Insulate your attic - D.I.Y or hire someone**
- Attics are primarily responsible for heat loss (winter) and heat gain (summer)
- New attic insulation requirements for utility rebates: at least R-38 up to R-60 (at least increments of R-11)
- Cost savings; increased comfort
- Incentives:
 - Questar Thermwise
 - Tier 1 - \$0.20/sq ft; Tier 2 - \$0.07/sq ft
 - Rocky Mountain Power (with central A/C)
 - \$0.30/sq ft (for electric heat); \$0.20/sq ft (for gas heat)
 - Federal Tax Credit: 30% up to \$1500 (per home, for all qualified EE measures)



TIP 5: Seal and Insulate Leaks

- Floors, walls, HVAC ducts, electrical sockets, holes, windows, doors, etc.
- Weatherstripping, caulk, mastic, etc. can all be found at local hardware store
- Energy Star DIY Guide to Home Sealing
- Incentives:
 - Questar
 - Duct sealing/insulation* - \$225/\$250
 - Floor insulation - \$0.20/sq ft; wall insulation - \$0.30/sq ft
 - Rocky Mountain Power (for homes with central A/C)
 - Insulation (varies for floor/wall; gas or electric heat)
 - Duct sealing/insulation* - \$150
 - Federal Tax Credit (labor not included)



TIP 6: Weatherize Windows

- Install storm windows
- Buy new (if not the whole home, then rooms most used)
 - U-value of 0.35 or lower (measure of heat transfer; lower is better)
 - Solar Heat Gain Co-Efficient (SHGC) of 0.33 or less (how well window blocks heat caused from the sun; lower is better)
- Install plastic during heating season
- Use thick curtains/drapes and/or shades
- Incentives:
 - Questar Thermwise: \$0.95/sq. ft
 - Rocky Mountain Power (with central A/C or electric heat): \$0.95/sq. ft.
 - Federal Tax Credit

TIP 7: Efficient Heating

- Consider replacement if 15 years or older
 - 90-95% efficient furnaces available
- Bigger not necessarily better – make sure contractor provides manual J-load calculations to determine proper size
- New furnace improves value, comfort, and safety
- Incentives:
 - Questar Thermwise
 - Gas Furnace (AFUE 90% or higher) - \$300
 - Gas Boilers (AFUE 85% or higher) - \$400
 - Federal Tax Credit
 - Geothermal Heat Pump (state and federal credits)

TIP 8: Efficient Cooling

- Consider Evaporative Cooling before Central A/C
 - New, improved, and more intelligent (whole-house ducted systems)
 - Water use is minimal compared with water consumption of fossil fuel power plants
- Consider using ceiling fans to direct cool air flow
- Incentives:
 - Rocky Mountain Power *wattsmart*
 - Evaporative Cooling - \$300 (first-time) & \$100 (replacement) & whole-house ducted systems
 - 15+ SEER and 12.5+ EER central A/C - \$150
 - Cool Keeper - \$20 (now opt-out – SB 47 (2010))
 - Energy Star Fans - \$20
 - Window A/C units - \$30
 - Central A/C tune-up
 - Federal Tax Credit
 - Geothermal Heat Pump (state and federal credits)

TIP 9: Appliances

- Consider energy costs with the sale price
- Not all that glitters is gold! (i.e. Energy Star refrigerators can use up to 20% less than a conventional model)
- Look for Energy Star label and Energy Guide
- Ask the store if they carry Energy Star Appliances – if they don't, go elsewhere
- Incentives:
 - Questar Thermwise
 - ENERGY STAR gas clothes washer (\$50-\$75) & dryer (\$30)
 - Rocky Mountain Power
 - 'See ya later, refrigerator' – get \$30 back
 - Clothes washers (\$75), dishwashers (\$20) & refrigerators (\$20)



TIP 9: Efficient (or Solar) Water Heaters

- Install Water Heater 'Blanket' to insulate (\$20 – free with Questar Home Energy Audit)
- Turn down to 120°F (any higher may lead to scalding)
- Incentives:
 - Questar Gas Thermwise:
 - Solar Assisted Hot Water Heating - \$750
 - High-Efficiency Storage Water Heater - \$50-\$100
 - Tankless Gas Water Heater - \$300
 - Rocky Mountain Power
 - Energy Star Electric Water Heater - \$50
 - Federal Tax Credit:
 - 30% of total cost of solar (no cap)
 - 30% up to \$1500 (for all EE measures)

TIP 11: Efficient Lighting

- If every U.S. home replaced just 1 light with Energy Star light:
 - Save enough electricity to light more than 3 million homes for a year
 - Save \$700 million in energy costs
 - Prevent 9 billion pounds of CO₂ per year
- Use in most used lights
- CFLs have evolved significantly over the last decade
 - 3-way switch compatible
 - Range of lumens and light qualities (daylight, soft, etc)
 - Indoor and outdoor (be sure to use appropriately)
 - Decorative and different shapes
 - CFL covers available
 - Recessed lights
 - Dimmers (only certain lights)
 - Energy Star qualified light fixtures (RMP \$20 incentive)
- LEDs are emerging on the market



Additional Incentives for Energy Efficiency



Questar Gas Thermwise

www.thermwise.com; 1-800-323-5517

- Rebates for builders
- ENERGY STAR New Home Certification - \$500
- Federal Tax Credit Home (50% above code) - \$800

Rocky Mountain Power Home Energy Savings Program

www.homeenergysavings.net/utah/home.html;

1-800-942-0266

- ENERGY STAR New Homes - \$250 - \$1170
- Time of Day reduced rates during on-peak hours
- FinAnswer and FinAnswer Express
- Recommissioning
- Self-Direction

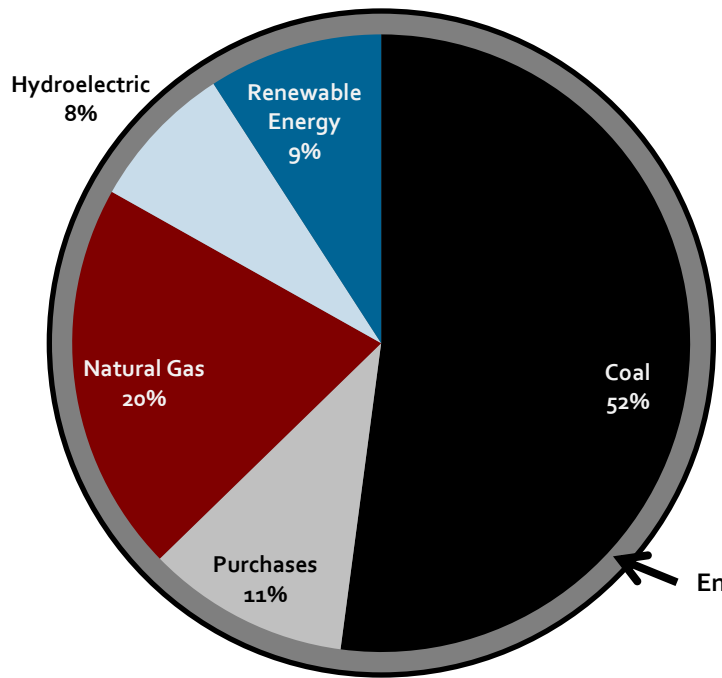
Commercial Federal Tax Credits, EE Mortgages,



Building the Clean Energy Economy: A Study of Jobs and Economic Development in Utah

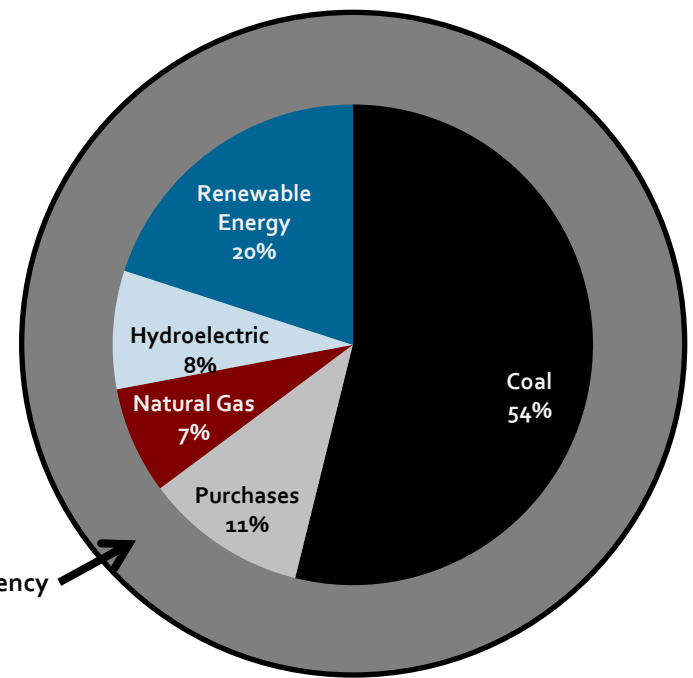
Figure 3. Electricity Mix for Each Scenario

Reference Scenario Electricity Mix



Supply-side Electricity: 38,285 GWh
 Energy Efficiency: 2,886 GWh
 Total Electricity: 41,171 GWh

20% Clean Energy Scenario Electricity Mix



Supply-side Electricity: 29,817 GWh
 Energy Efficiency: 11,354 GWh
 Total Electricity: 41,171 GWh

Energy Efficiency

Clean Energy = Economic Development

- 7,000 new net jobs
- \$300 million in new net earnings
- \$310 million in new net GDPS



Energy Efficiency is Smart...& Sexy

- Utah's cheapest and most readily available resource
- Saves water, conserves resources, reduces pollution
- Saves you money over time
- Increase comfort
- Utility bill savings
- Improves resale value of property
- Increases cost-effectiveness of Renewable Energy
- Now is a smart time to invest – available incentives and volatile (and rising) energy prices
- Smart is Sexy



Resources



- Utah Clean Energy: www.utahcleanenergy.org
- ENERGY STAR: www.energystar.gov
- Questar ThermWise : www.thermwise.com
- Rocky Mountain Power:
www.rockymtnpower.net
- Utah State Energy Program:
www.geology.utah.gov/sep/
- Governor's Energy Advisor Office:
www.energy.utah.gov
- Federal Energy Incentives DSIRE USA:
www.dsireusa.org



Utah's Energy Future is Right Now



Thank you!

Sara Baldwin

Senior Policy & Regulatory
Associate

sbaldwin@utahcleanenergy.org

1014 2nd Avenue
Salt Lake City, Utah

84103

(801) 363-4046

www.utahcleanenergy.org