

**2009 TECHNOLOGY  
IN THE WORKPLACE  
EXPO & SEMINAR**



By Darren Kimura

**Energy Opportunities for  
You**

# In This Presentation



- Introduction
- Energy knowledge will change your lifestyle
  - Energy savings opportunities
  - Simple suggestions
  - Energy Mythbusters
- Cost adjusted for Hilo, HI

# Your Ride



- 80% of workers drive to work alone
  - Telecommute: \$750/Year savings
  - Carpool: \$400/year savings
- Maintenance
  - Filters/Tires: \$150/Year savings
- Clean your car
  - Eliminate extra weight: \$50/Year savings
  - Remove luggage rack: \$30/Year savings
- Be cool
  - No A/C (under 45mph): \$200/Year savings
- Drive Calm
  - Heavy breaking and accelerating uses more energy

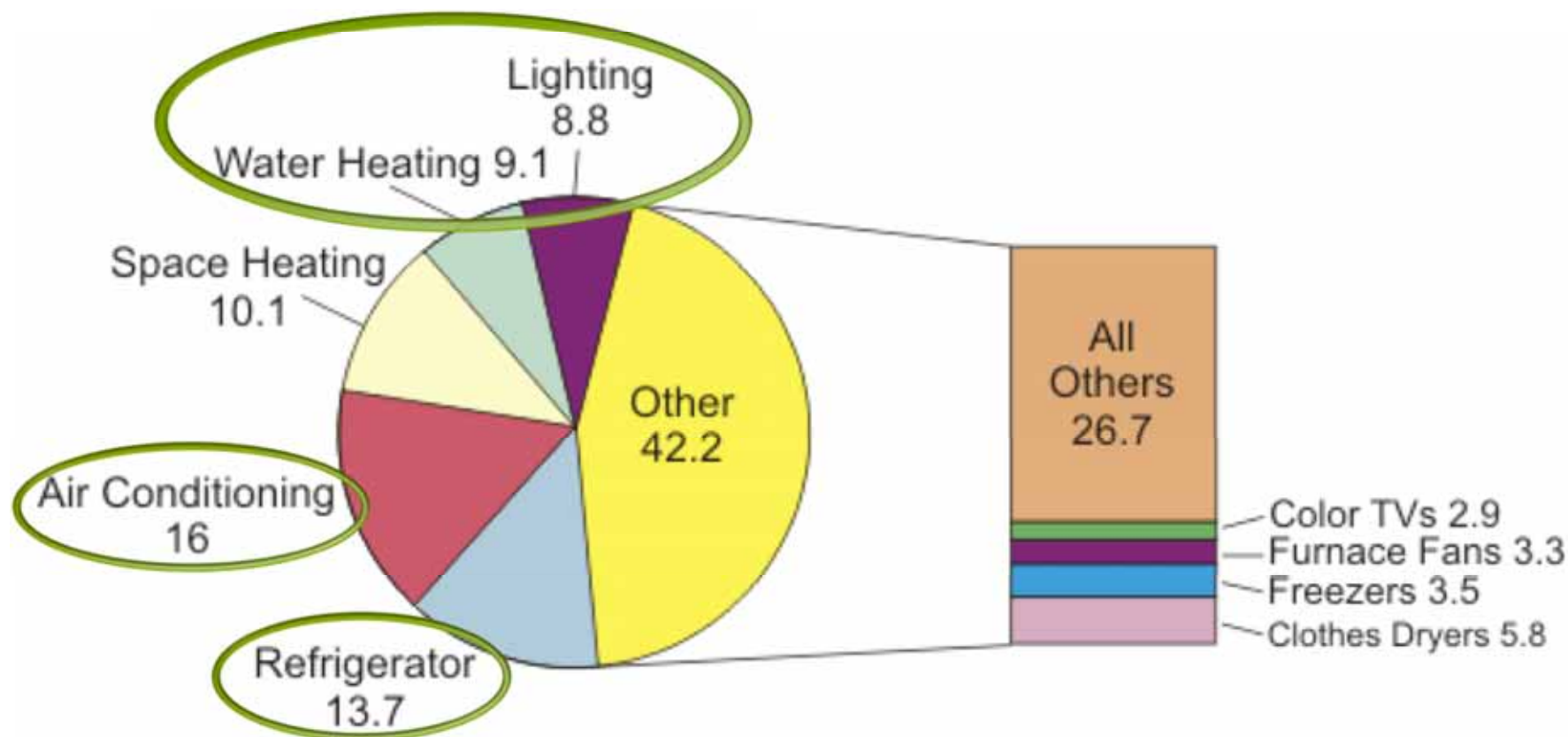
## Upgrade to Green

Average Hybrid  
payback: 5 years

Buy a hybrid and save \$1,500/year



# Energy use in your home



Source: Energy Information Administration, Form EIA-457A, B, C, E, and H of the 2001 Residential Energy Consumption Survey.



# Cooling your home

- 6 hours/day Air Conditioning: \$800/year

Tip: Reduce A/C use

Tip: Reduce A/C Temperature (3 deg Save \$100/year)

Tip: Install Ceiling Fan (Save \$600/year)

Tip: Clean filters monthly



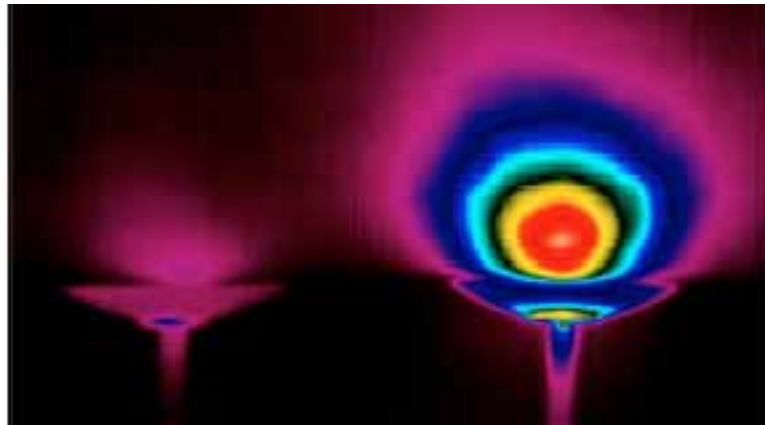
Mythbusting: Cooling a house through out the day is more efficient than cooling the house in the afternoon

# Washing/Drying your clothes



- 1 Hot Water Clothes Wash Cycle: \$.80  
Tip: 1 Cold Cycle: \$.20/wash  
Save: **\$120/Year**  
Tip: Wash only when full load  
Tip: Use water level control (if you have one)
- 1 load/day Clothes Dryer: \$400/year  
Tip: Hang dry – **Save \$400/Year**  
Tip: partial dry

# Your Living Area



Mythbusting: It takes more energy to turn a light off then on so just leave it on

- 6 hours/day Table Lamp: \$30/year
- 6 hours/day Touchier Lamp: \$200/year
- 6 hours/day Room Light: \$50/Year
- 6 hours/day LCD TV: \$400/Year  
Note: PLASMA 2x LCD energy  
Note: TVs use over 5% of all energy in USA

# Your Bathroom



- 30 min/day Hot Hair Dryer: \$150/year  
Tip: Dry hair on cool

- Vanity lamps: 30 min/day \$200/year



# Your Study/Home Office



- 24 hours/day Computer/Monitor (w/ standby): \$200/Year
  - GE Saved \$6.5 Million/Year just by changing settings on their computers
  - Myth: Constant Start/Shutting off the computer will use more energy
- Phantom Plug Loads: \$90/year  
Note: American spend over \$2 billion in energy annually on Phantom energy

# Your Kitchen



In 2007 Americans saved \$16 billion in energy by switching to energy star and avoided greenhouse emissions of an equivalent 27 million cars

- 30 min/day Microwave/Toaster: \$60/Year
- 24 hours/day Refrigerator: \$600/Year
- 1 hour/day Heater Dishwasher: \$300/Year
  - Non-Heated Dishwasher: \$100/Year
- 2 hours/day Coffee Pot: \$170/Year
- 1 hour/day Range: \$100/Year



## Your Lawn

- Leaks

Note: Average home loses 90 gallons of water per day on leaks = \$130/year

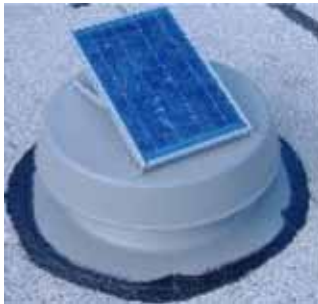
- Grass

Note: Americans use 7 billion gallons of water per day but 50% is lost due to evaporation!

Tip: Water early morning or late evening



# Your Roof



- Solar Hot Water – Thermal energy is the most efficient use of solar
  - Save \$400/year
  - Tax Credits
  - Payback around 5 Years
- Skylights
  - Save \$40/year
- Solar Attic Fans
  - Save \$30/year

# Your Windows



- Energy efficient windows
  - Save \$60/Year
  - Reduce mold
  - Payback: 3 Years
- Window film
  - Save \$50/Year
  - Fade protection
  - Reduce glare/heat
  - Payback: 2 Years



# Your Work



- LED Exit Signs
- Lighting Retrofits
- Mirrored Reflectors
- Efficient A/C
- Turn things off
- Recycle
- Average energy upgrade = 2 year payback!

# Mahalo!



- Over 8 years of this talk and by implementing some of the measures here the average homeowner has saved **\$800/year**
  - Estimated: **\$7.2M saved**
- Presentation available electronically at:
  - [www.darrentkimura.com](http://www.darrentkimura.com)
  - [dkimura@sopogy.com](mailto:dkimura@sopogy.com)