



# LSI - Fort Collins Energy and GHG reduction

**2008 to the present**

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# About LSI Corporation

LSI Corporation is a leading provider of innovative silicon, systems and software technologies that enable products which seamlessly bring people, information and digital content together. We offer a broad portfolio of capabilities and services including custom and standard product ICs, adapters, systems and software that are trusted by the world's best known brands to power leading solutions in the storage and networking markets.

# LSI - Fort Collins Energy Reduction

1. LSI Corporation's Commitment to reduce our contribution to Green House Gas (GHG) emissions.
2. What LSI Corporation has done here in Fort Collins
3. What LSI Corporation has accomplished across the USA.

# LSI Corporation Energy Reduction

## 1. LSI Corporation's Commitment to GHG reduction

- In 2007 LSI Corporation became a partner in the EPA Climate Leaders program
- LSI agreed to reduce our contribution to GHG emissions by 15% from the 2007 baseline by 2012
- We formed a USA-wide Energy Team with employees from Workplace Solutions and EH&S
  - EH&S is responsible for the EPA reporting requirements
  - Workplace Solutions is responsible for identifying and completing the projects

The significance of signing the agreement with the EPA was to raise awareness regarding the value of energy reduction projects within LSI's management team.

- Helped to get funding for projects specifically intended to reduce energy use.

# LSI - Fort Collins Energy Reduction

## 2. What LSI Corporation has done in Fort Collins

We joined Fort Collins Climate Wise

- Innovative support program not found in other locations.
- Benefits:
  - Climate Wise provided engineering support from the Brendle Group in identifying systems and methods for improvement.
  - Learned about financial incentives available from Platte River Power Authority (PRPA).
    - More support than from other utilities in the central USA

# LSI - Fort Collins Energy Reduction

## What steps LSI Corporation took in Fort Collins in 2008

LSI Corp agreed to fund three projects:

1. Modern lighting – replaced about 800 T-12 fixtures with new T-8's.  
Project Cost of \$130,000.  
Incentive of \$52,600
2. Digital Building Automation System – replaced the pneumatic controls and OA dampers. Placed VFD's on supply and return air fans.  
BAS and fan VFD's \$205,000  
Incentive of \$32,500
3. Installed VFD's on two 300 T building chillers.  
VFD's for two building chillers \$120,000  
Incentive of \$38,200

Total of the project requests was \$455,000, minus the incentives of \$123,000 yields a \$332,000 net spend.

All three projects were completed by the end of 2008.

# LSI - Fort Collins Energy Reduction

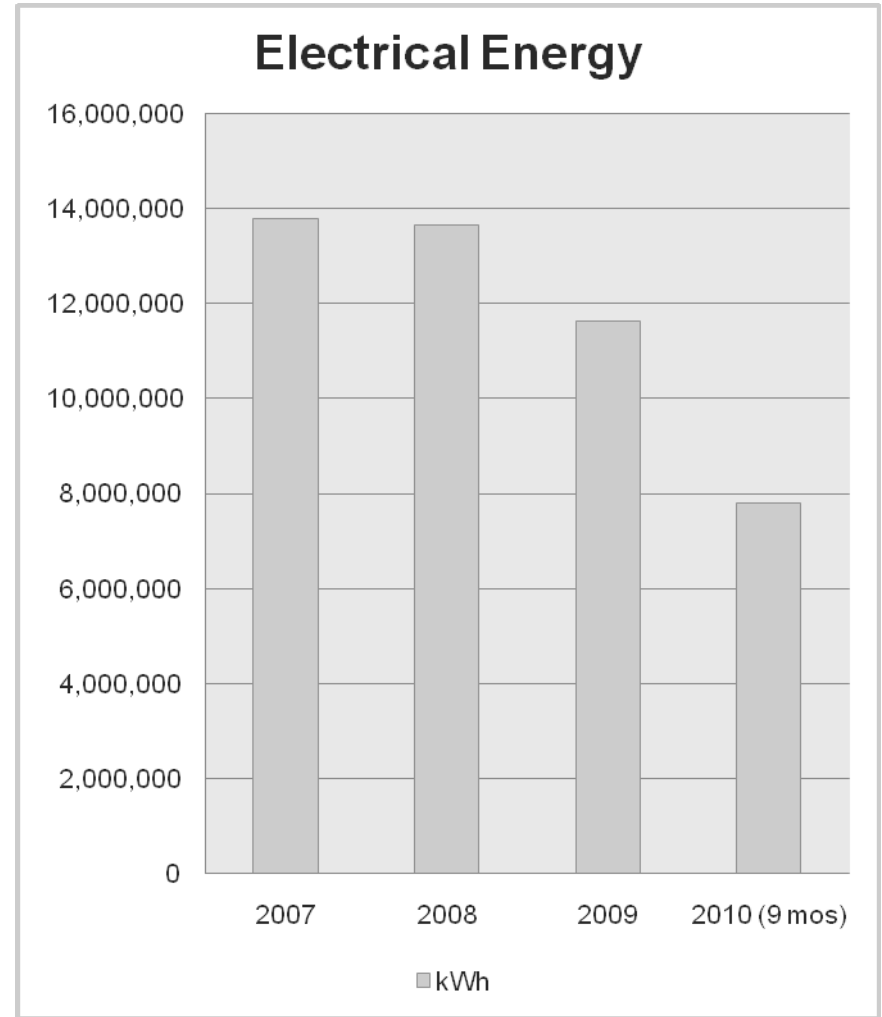
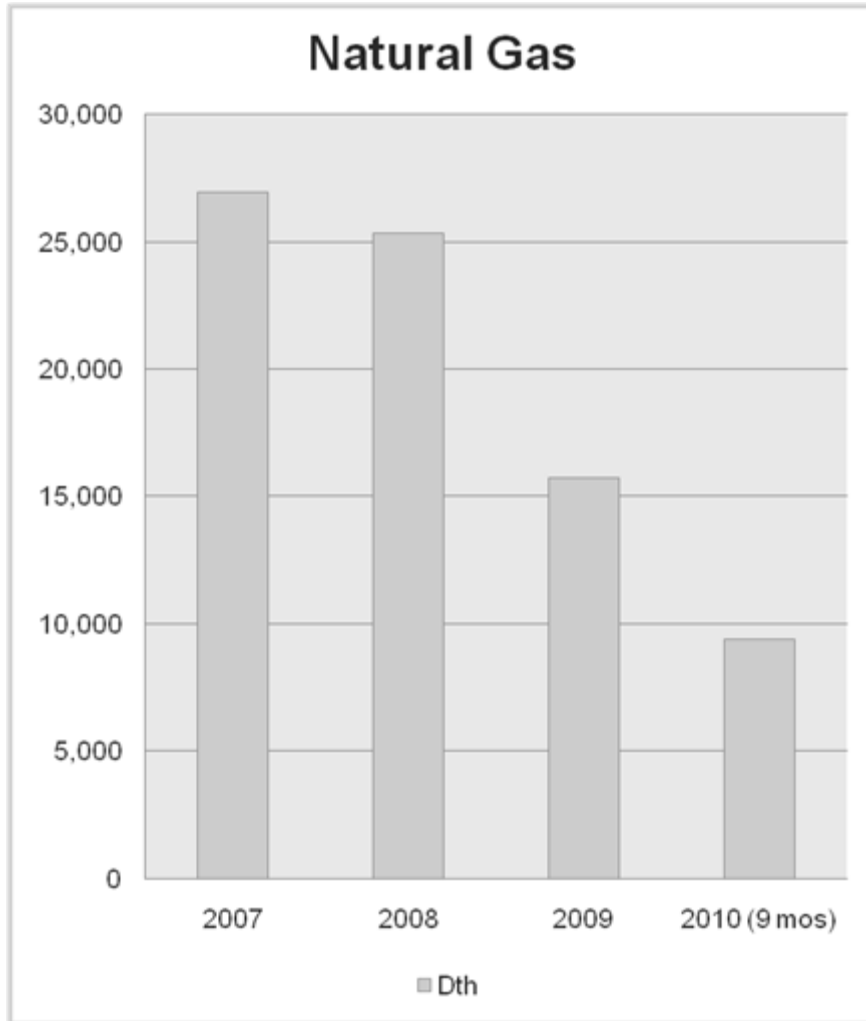
## What were the results?

- Comparing 2008 and 2009 invoices for natural gas and electricity showed a \$208,000 reduction in annual energy spending.
- Payback was ~ 19 months.
- It applies to each following year
- GHG reduction was calculated to be 2,251 metric tonnes of CO<sub>2</sub> annually

# LSI - Fort Collins Energy Reduction

- We didn't stop there.
  - **In 2009:**
    - Ended the conditioning an outside storage building.
    - Installed a VFD on the third building chiller.
      - Cost \$73,600 less a \$19,000 incentive;
      - Energy reduction 191 MWh or about \$8600 annually
      - Payback in about six years.
  - **In 2010:**
    - Replaced oversized air compressors in 2010.
      - Cost \$136,000.
      - No incentive from this replacement, but we project a \$26,000 per year energy savings or about a five year payback.
  - **Future:**
    - Exterior lighting – LED or CFL parking lot lighting

# LSI - Fort Collins Energy Reduction



# LSI – Energy Reduction across the USA

## 3. What LSI Corporation has done across the USA

Funded projects in the largest sites – Colorado, California, Pennsylvania and Kansas.

- Pennsylvania – free cooling projects and BAS efficiency updates.
- Installing a BAS in Wichita, Kansas building. Should see results next year.
- California – demand response. Hot aisle/cold aisle containment.

# LSI GHG and Energy Reduction

How has LSI done so far in regard to our commitment to reduce GHG by 15 % ?

- By the end of 2009, LSI had reduced our contribution to GHG by 8.26 % from the 2007 baseline.
- Preliminary 2010 results indicate that we may achieve an 11% reduction from the 2007 baseline.
- Reaching the 15% goal remains a challenge.
  - Projects have a lower ROI
  - Increasing server capacity

# LSI – Energy Reduction across the USA

