

The Sustainability Vision:

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Science Teacher-Sustainability Coordinator
Stevenson High School**

Enough

For All

Forever !

African elder at Johannesburg (WSSD) 2002

“Civilization is in a race between education and catastrophe. Let us learn the truth and spread it as far and wide as our circumstances allow. For the truth is the greatest weapon we have.”

H.G. Wells

The New Age of “Global”

- **Our Global Energy Needs.**
- **Our Global Climate Challenge.**
- **Creating New Global Stewards and a Global Workforce (Sustainable Economy)**
- **Making education relevant and important! (News they can use!)**



Illinois Sustainable Schools Compact

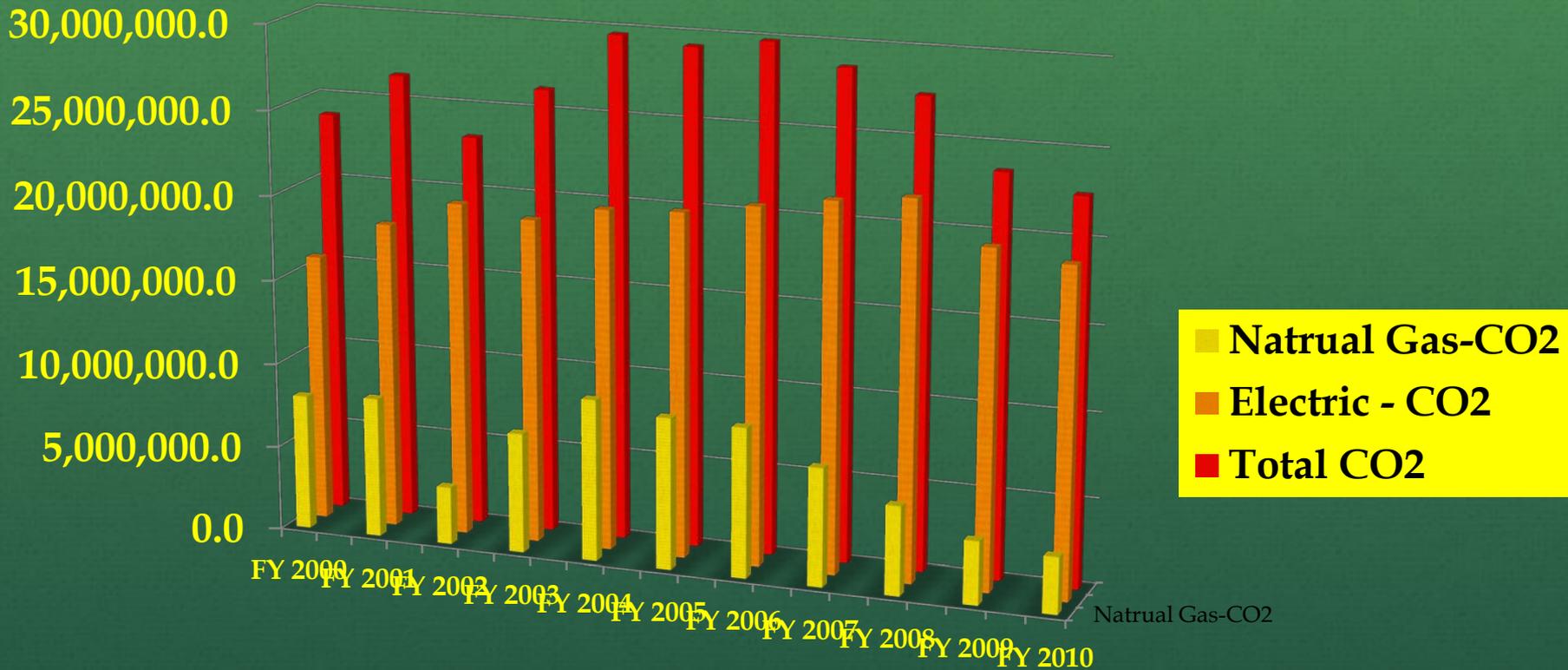
IN COOPERATION WITH THE GOVERNOR'S OFFICE

AGREES TO THIS VOLUNTARY COMPACT TO PROMOTE SUSTAINABILITY
AND ACCOMPLISH THE FOLLOWING MARKED GOALS BY DECEMBER 31, 2015.

Operations

- Sustainability Leader/Committee
(Broad Representation)**
- Energy Efficiency and Renewables**
- Prius – Driver's Education**
- Model Less Toxic Environment**
- Recycle and Composting**
- Model Automation and Technology**

Energy Efficiency/Reduction Part of the Solution

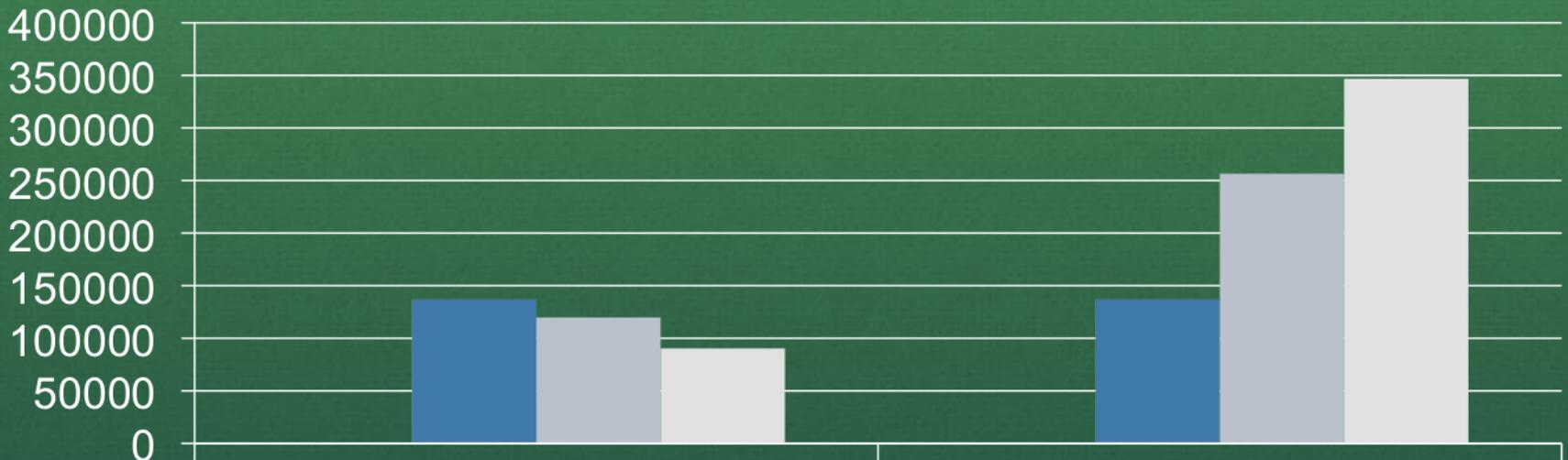


***24 % CO₂ Reduction between 2006 and the
2010 - Where there is CO₂, there is money.***

Stevenson High School

Sustainable Cost Tracking (Dollars)

■ 2007-08 ■ 2008-09 ■ 2009-10 ■ 2010-11



	Financial Savings over 2007-08 levels	Cumulative Financial Savings
2007-08		
2008-09	136,609	136,609
2009-10	119,755	256,365
2010-11	90,323	346,688



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Building and Grounds

- **Model Renewable Energy**
- **Participate in Energy Star Labeling for Schools**
- **Green Roof/White Roof**
- **Apply for LEED Certification (Take the Test)**
- **Use Rain Water, Drought Resistant Plants**
- **Think Biological Detoxification of parking lot water. (Bio-swales)**

Evacuated Tube and Photovoltaic Cells - Virtual House Project



Green Roof and Renewables





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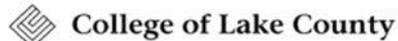
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Curriculum

- **Community Service Projects**
- **Assemblies**
- **Conduct (in school) field trips**
- **Environmental Club – Share Leadership**
- **Professional Development : For Faculty
Across Curriculum Areas**

Welcome
to the
Environmental Leadership Summit

co-hosted by



with special thanks
to our Mission Partner
and Event Sponsor



SIEMENS



Green Team Students – Siemens

Dave Hopping (Siemens), Kim Gray and Rose, Scott Allen, Lance David, Nate Kipnis, Seth Johnson, Ann Maine, Ronald Greaves, Merv Roberts, Congressman Robert Dold



Based on 50,000 Hours of Use	Incandescent	Compact Florescent	LED
Cost of light bulbs	\$15.00	\$12.50	\$25.00
Cost of Electricity	\$330.00	\$71.50	\$38.50
Total Cost	\$345.00	\$84.00	\$63.50
CO2 Produced	4,290 Pounds	930 Pounds	500 Pounds

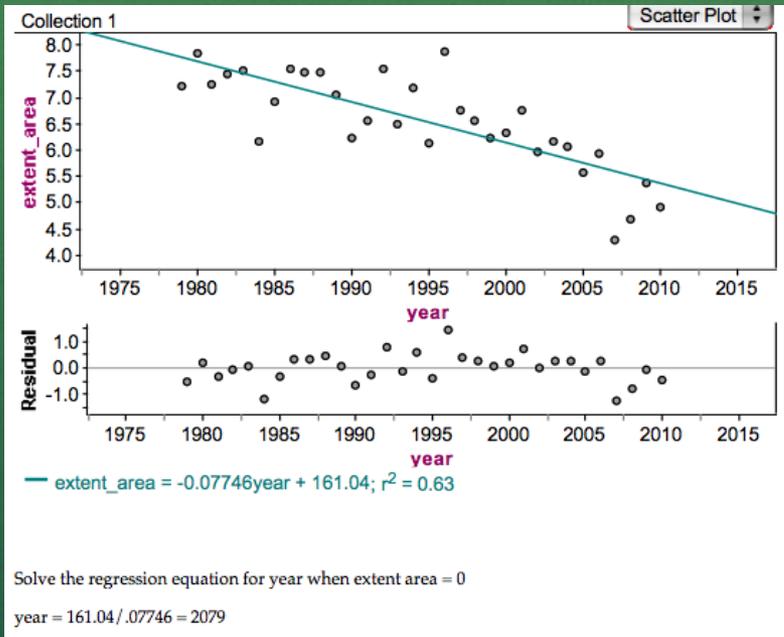
- \$261 saved per CFL light bulb and make 4,650 pounds less CO2
- Do 5 lights... Save \$1,305 over 50 thousand hours.

Life of Car...10 Years

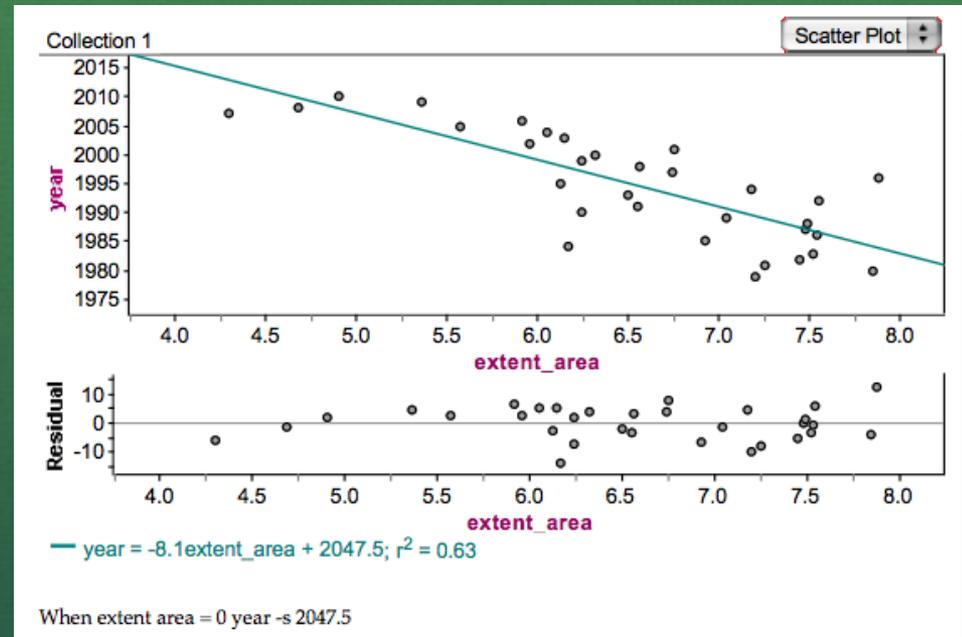
Cars, Costs, and CO2	Miles per Gallon	Gallons used in 150,000 miles	Total Cost (\$4.00gal.)	Pounds of CO2	Elephant CO2 Equivalent
Jeeps, SUV's, V8, Etc	15	10,000	\$40,000.00	200,000	20
Mini Vans, V6 Auto, etc	20	7,500	\$30,000.00	150,000	15
Accords/Camery, etc	25	6,000	\$24,000.00	120,000	12
Civics, Corolla, Focus, etc.	30	5,000	\$20,000.00	100,000	10
Prius, Honda, Hybrids, etc	50	3,334	\$12,000.00	66,667	6.6
Electric Vehicle Renewable - Wind or Photovoltaic	0	0	\$4,740.00 (\$0.0316/m)	0	0

Let Students Do Science

When will the Pole Disappear?



2079



2047

If it were true that the correlation of were equal to 0 (the null hypothesis), and the sampling process were performed repeatedly, the probability of getting a value for Student's t **with an absolute value this great or greater** would be **< 0.0001**.



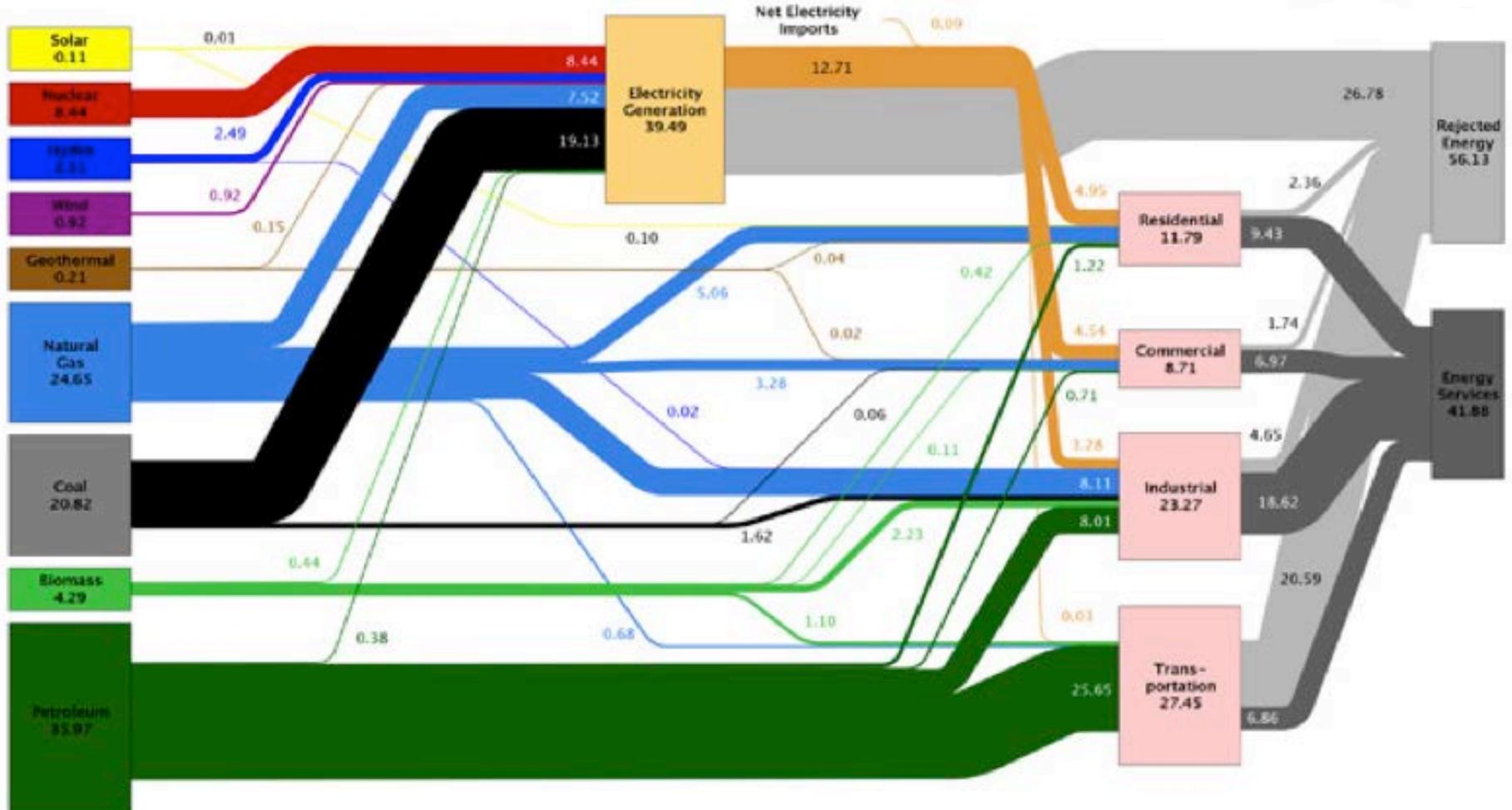
*The new Status Symbol:
“How Green is your car?”
or
“How much energy does
your home make?”*



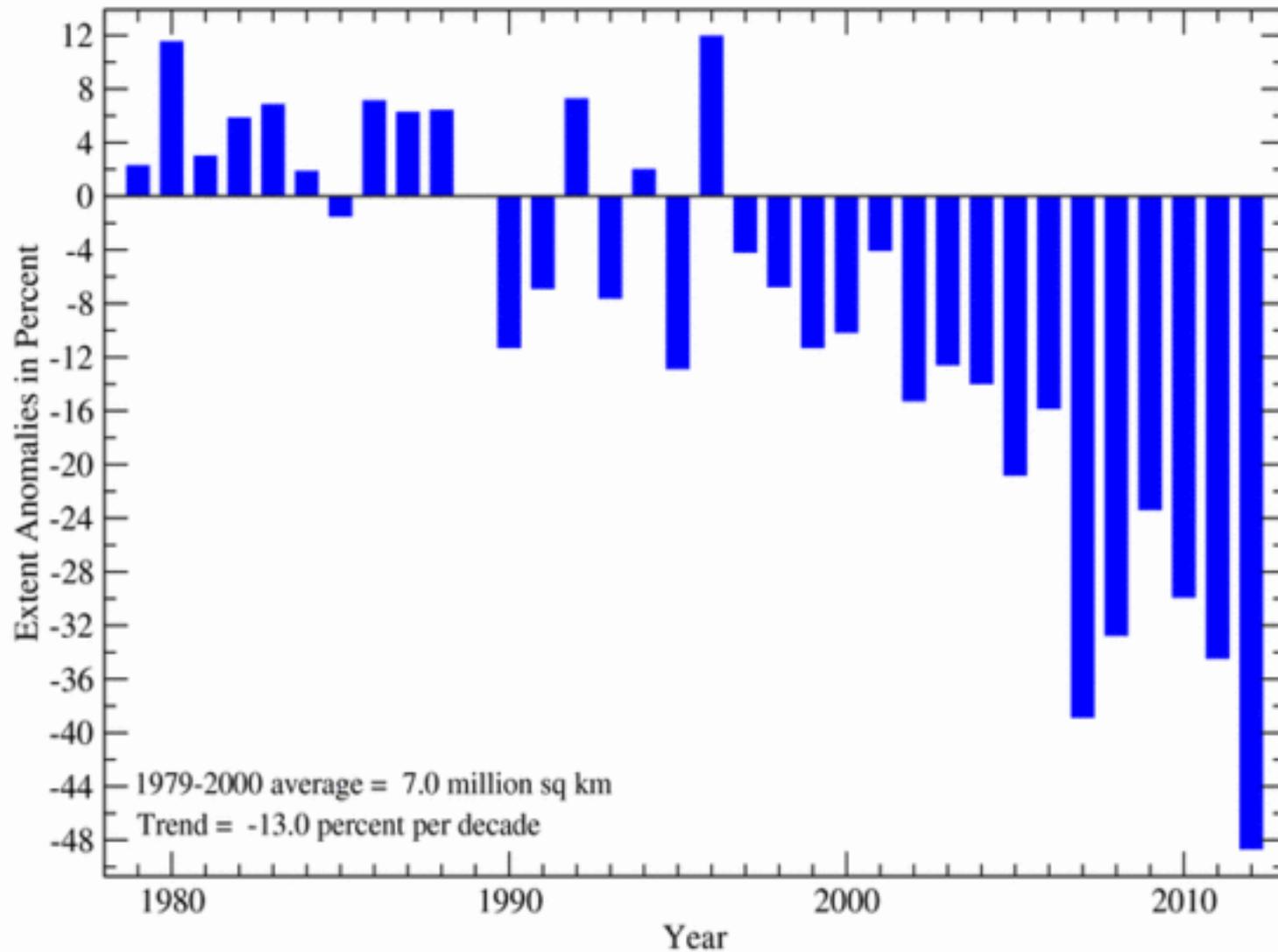
Where there is waste, there is money, and extra CO2!

Estimated U.S. Energy Use in 2010: ~98.0 Quads

Lawrence Livermore National Laboratory



Northern Hemisphere Sea Ice Extent September Anomalies, 1979-2012



Data provided by the National Snow and Ice Data Center (NSIDC)

Ice in a glass



*Pop stays cold as long as
there is ice in the glass.*

All Energy Comes from the Sun today or yesterday (Coal, Oil Natural Gas) (Except Nuclear)

