Solar Regulations, Rebates & Reform

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- Co-Director of the Social Science Research Lab
- Author, film director and patented inventor
- Serve on the board of directors for environmental companies in Europe
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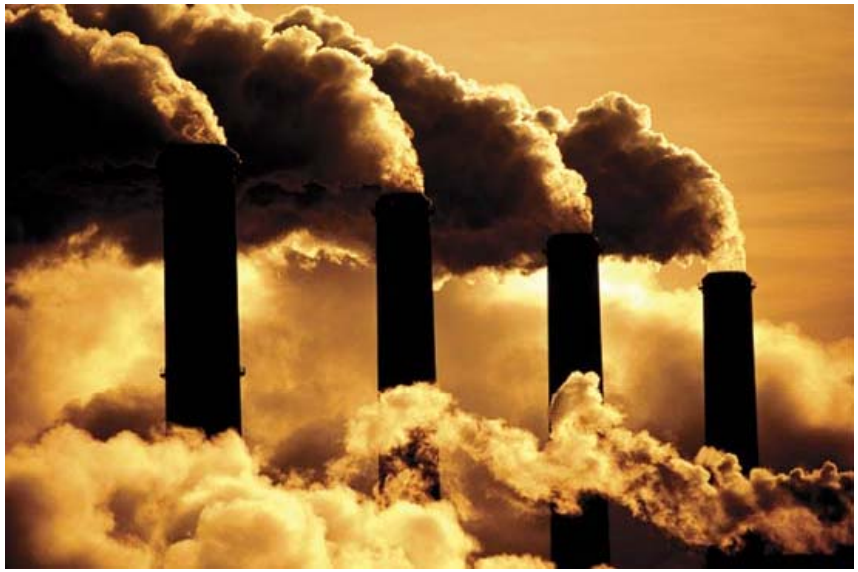
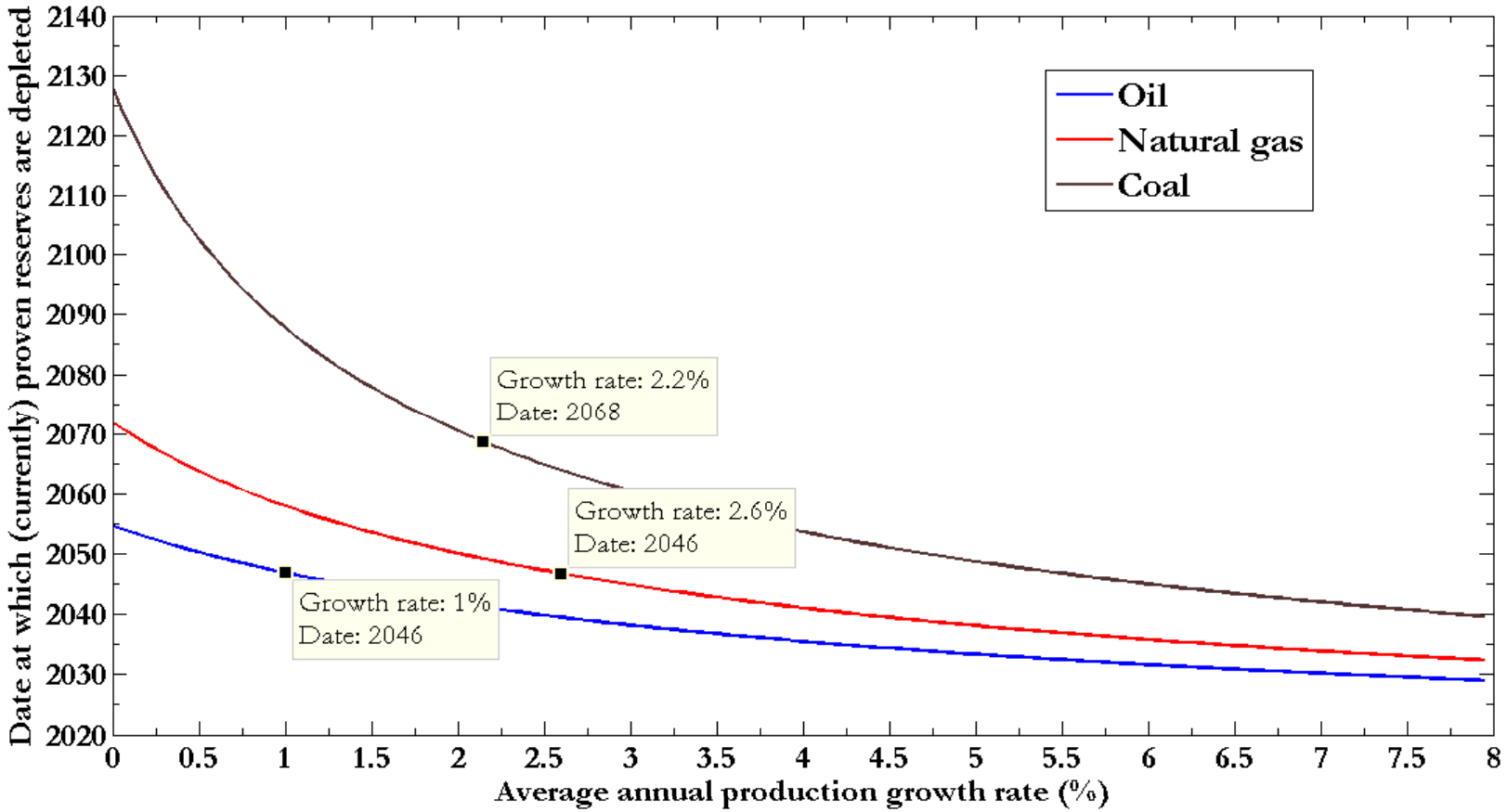
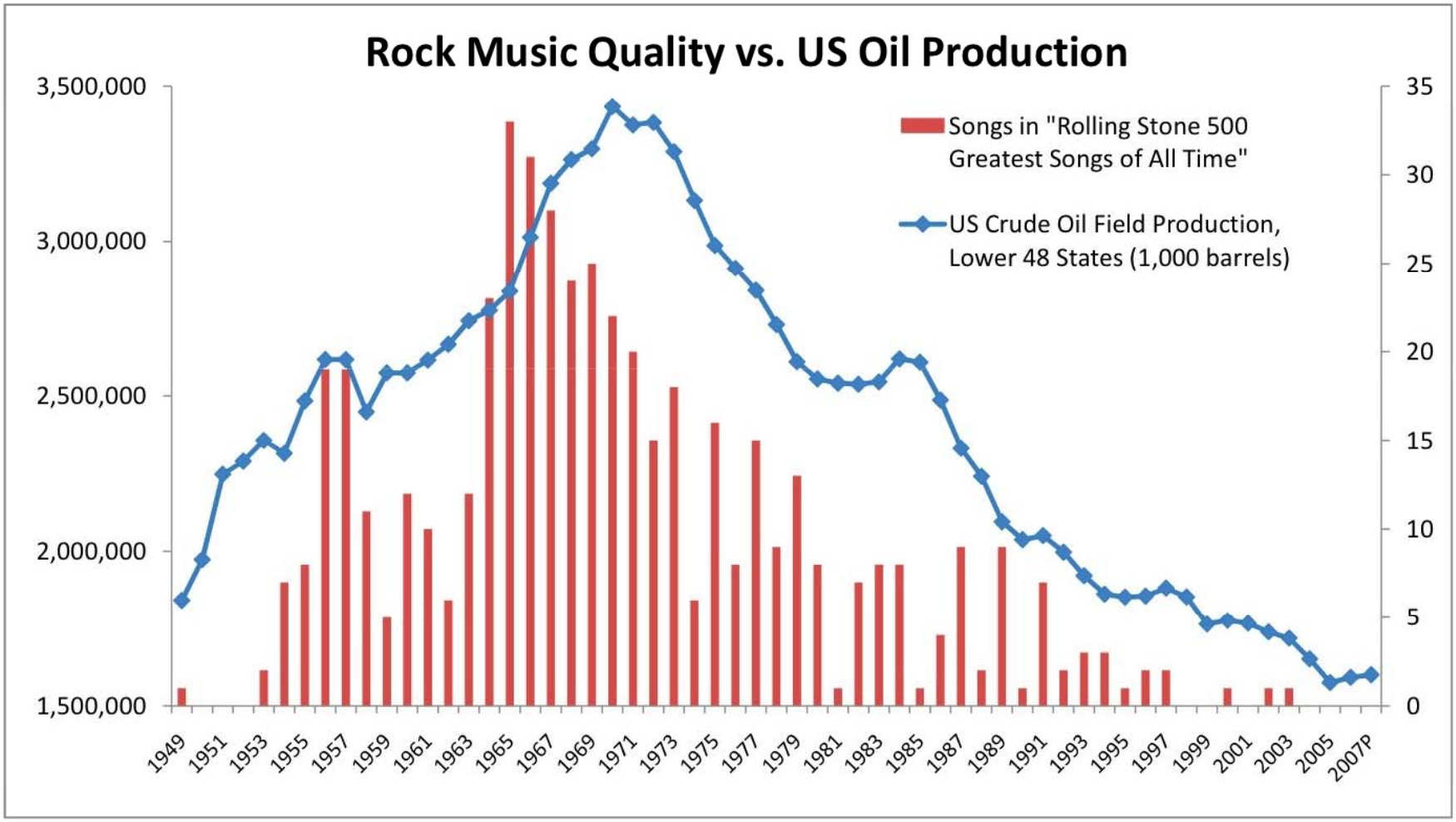
Carbon based sources of energy will remain fundamental to energy policy…



Estimates like these are not valuable…

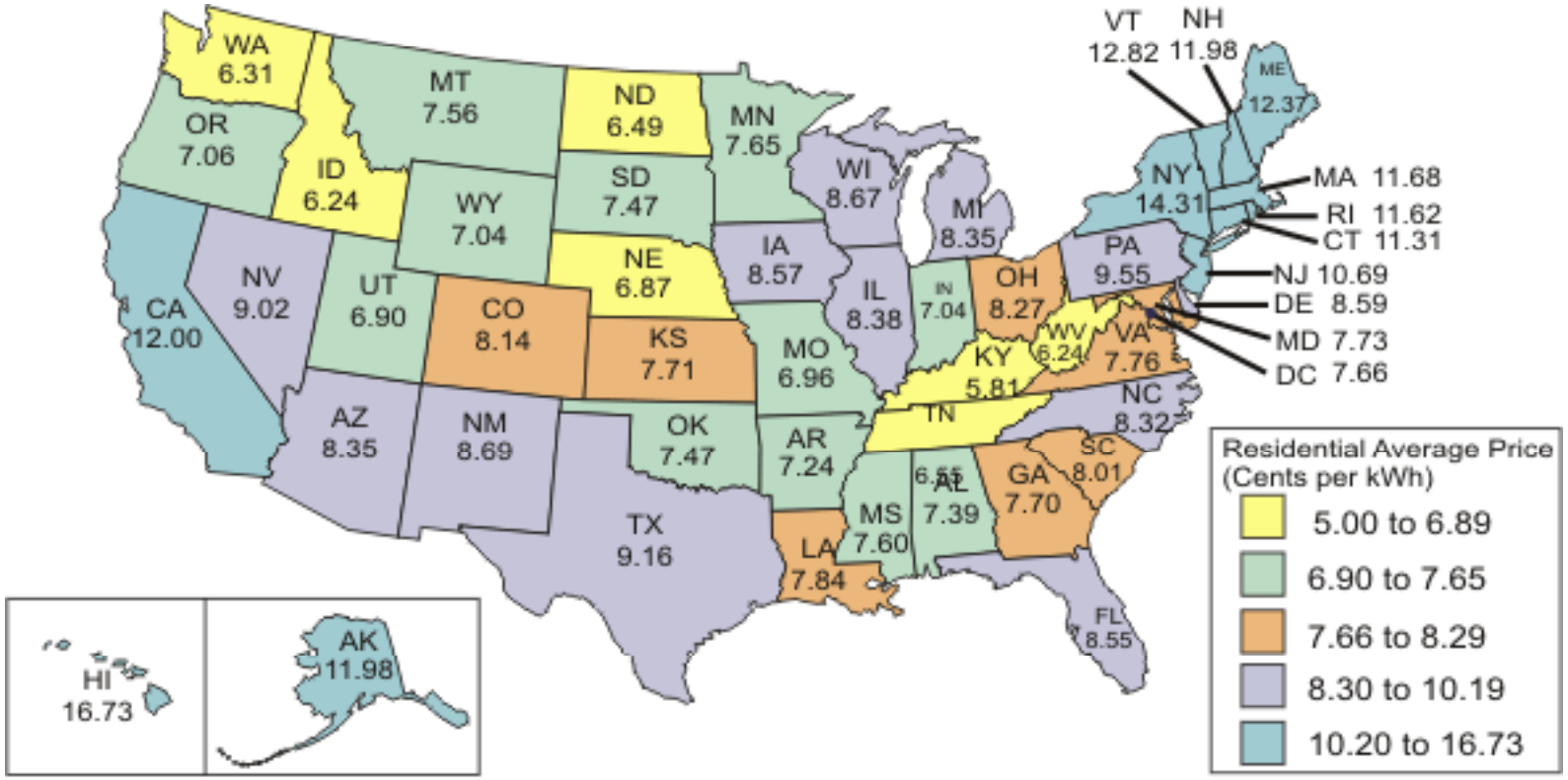


This may actually be more useful…



These are non-renewable sources…

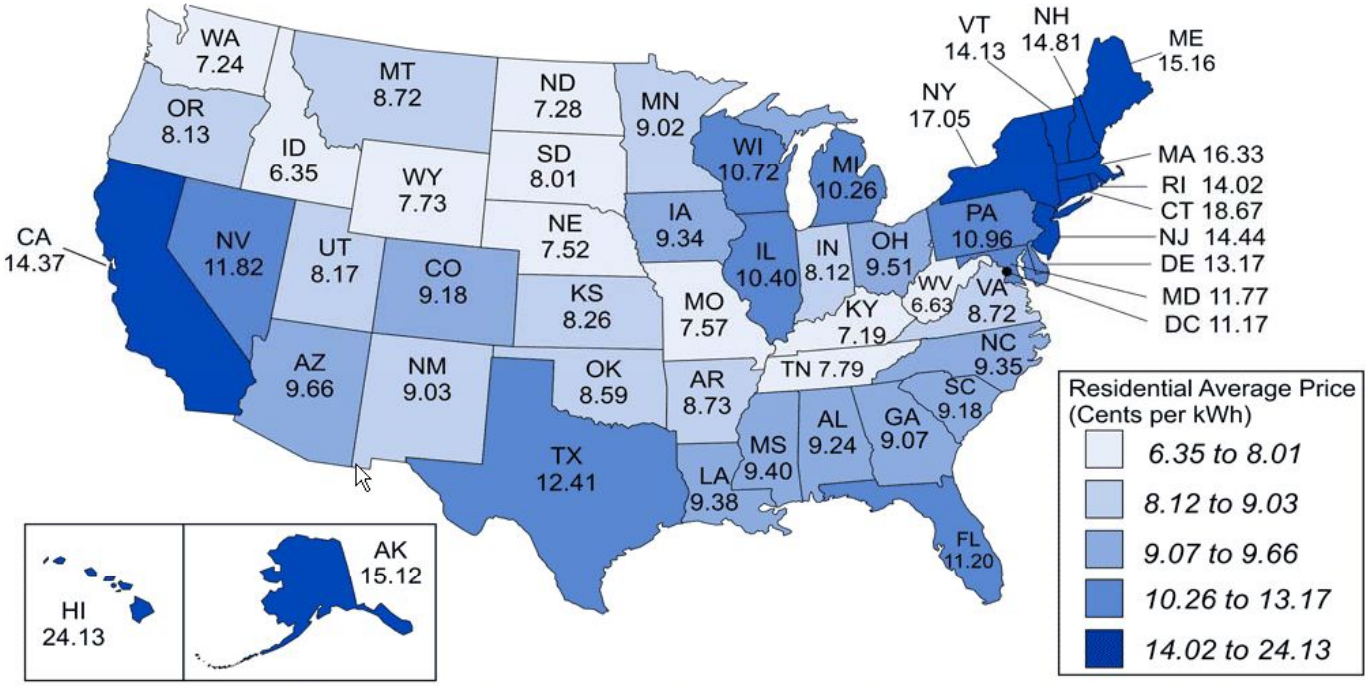
Residential kW costs…2003



Source: Energy Information Administration, Form EIA-861, "Annual Electric Power Industry Report."

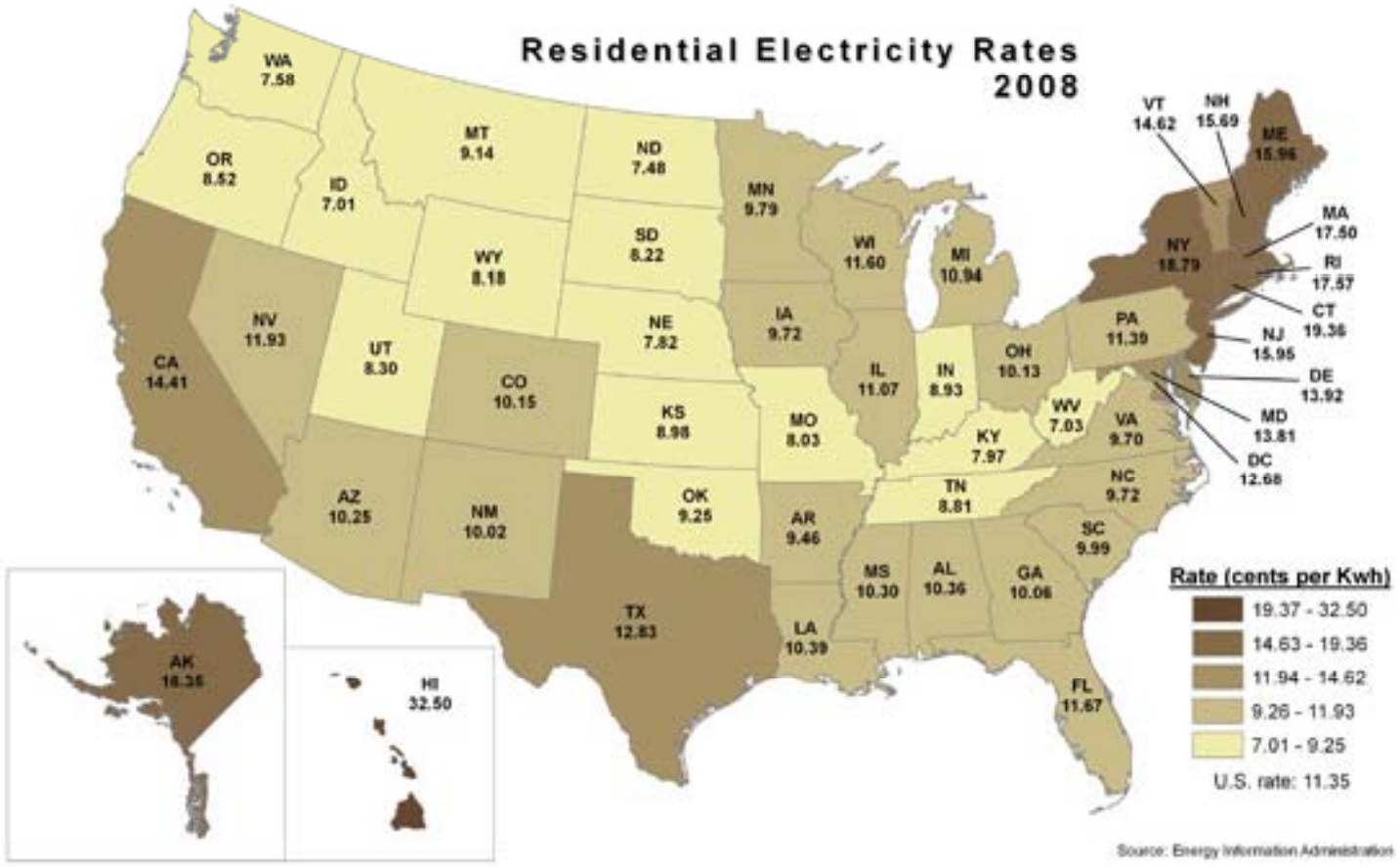
Residential kW costs…2007

The U.S. average residential retail price of electricity was 10.64 cents per kilowatthour in 2007.



Source: Energy Information Administration, Form EIA-826, "Monthly Electric Sales and Revenue with State Distributions Report."

Residential kW costs…2008



Who has higher electrical costs?

Austin, Texas?

Sacramento, California?

Indianapolis, Indiana?

Madison, Wisconsin?

Actually a trick question…

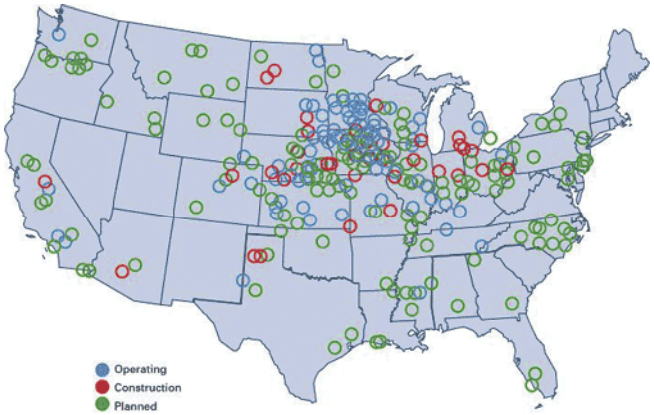
Little Rock, Arkansas.

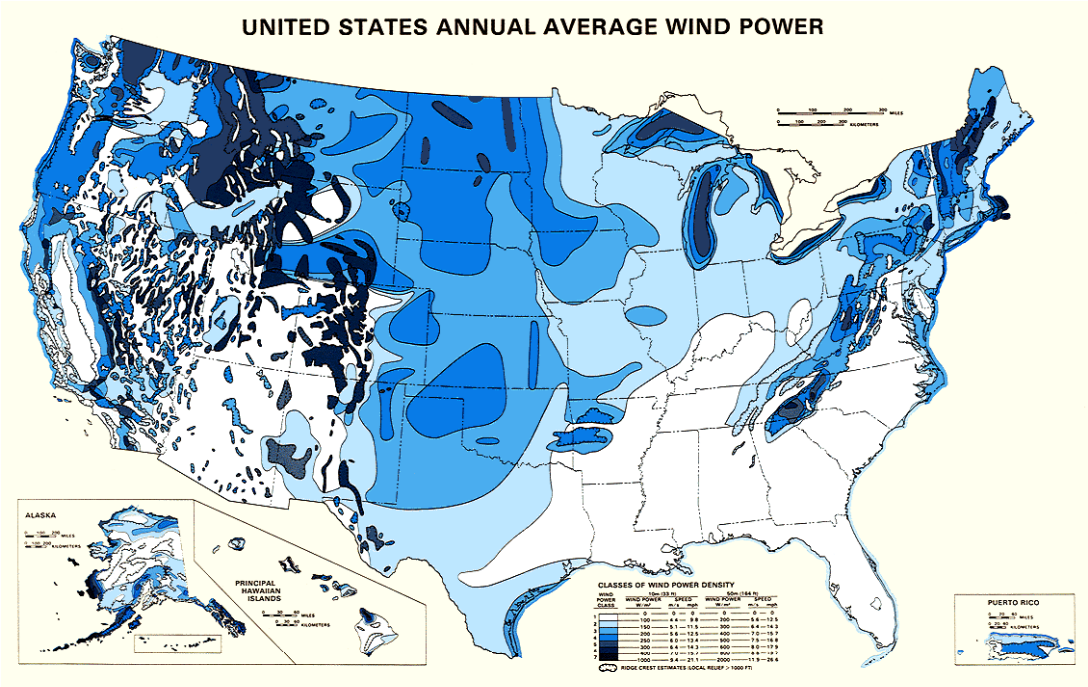
Costs will continue to climb…

…Regulates twenty-two electric utilities in the State, including four investor-owned utilities, one generation and transmission cooperative utility, and seventeen distribution cooperative utilities.

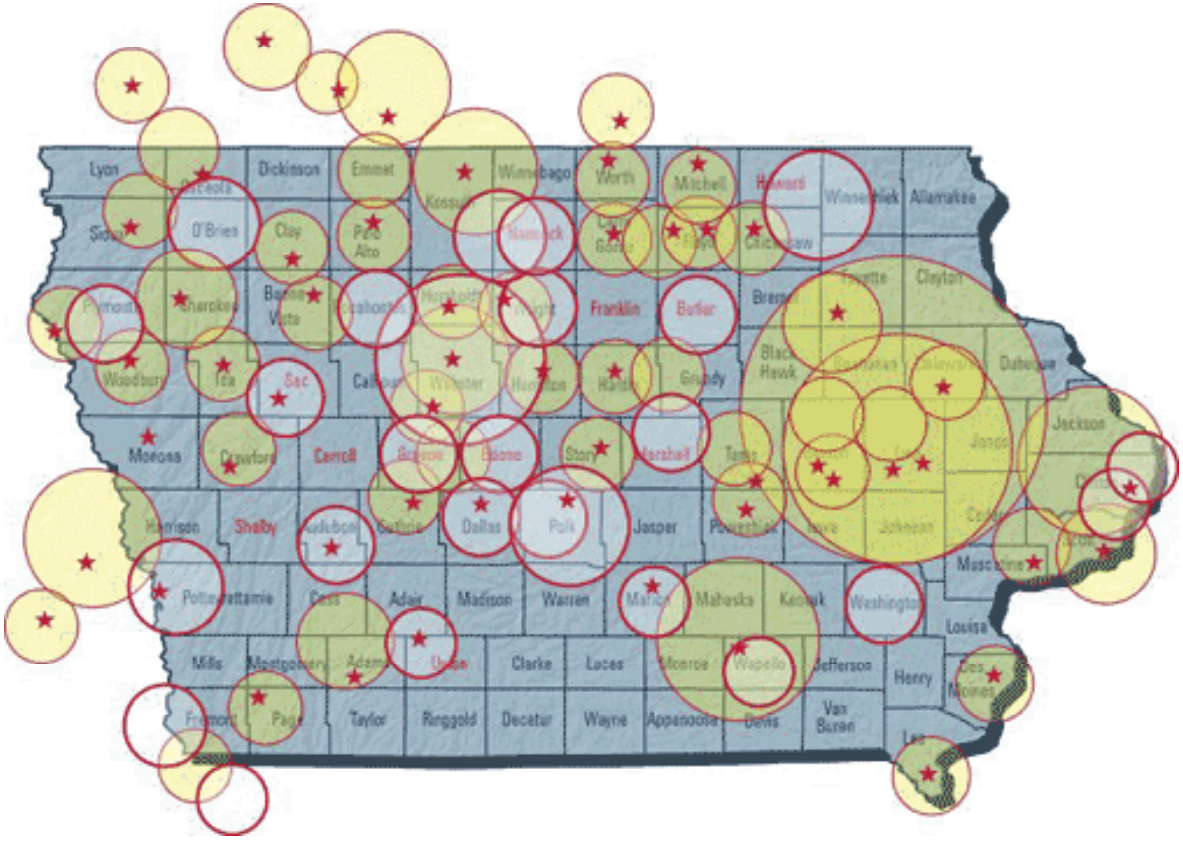
Renewable energy alternatives…

Wind, biomass and solar…

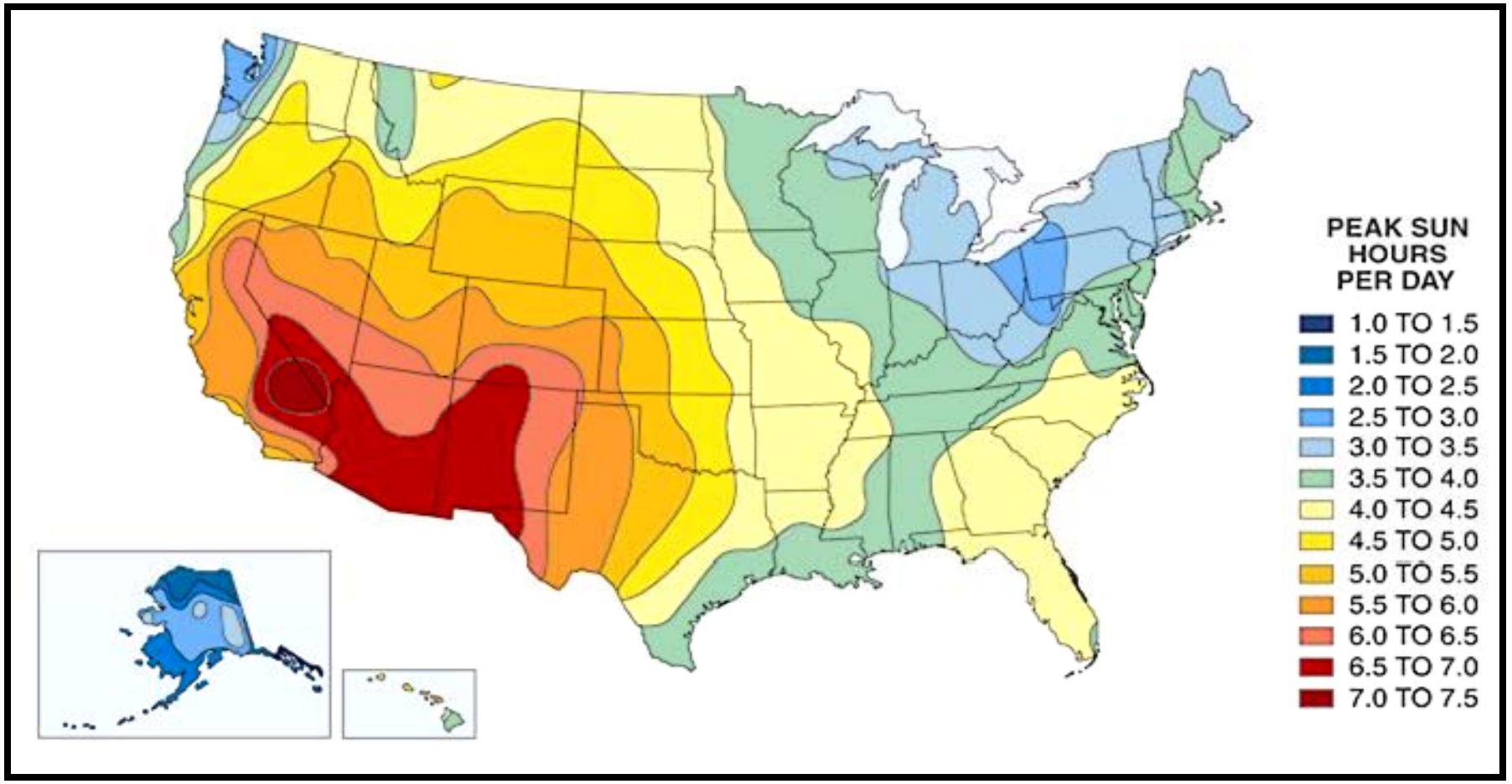


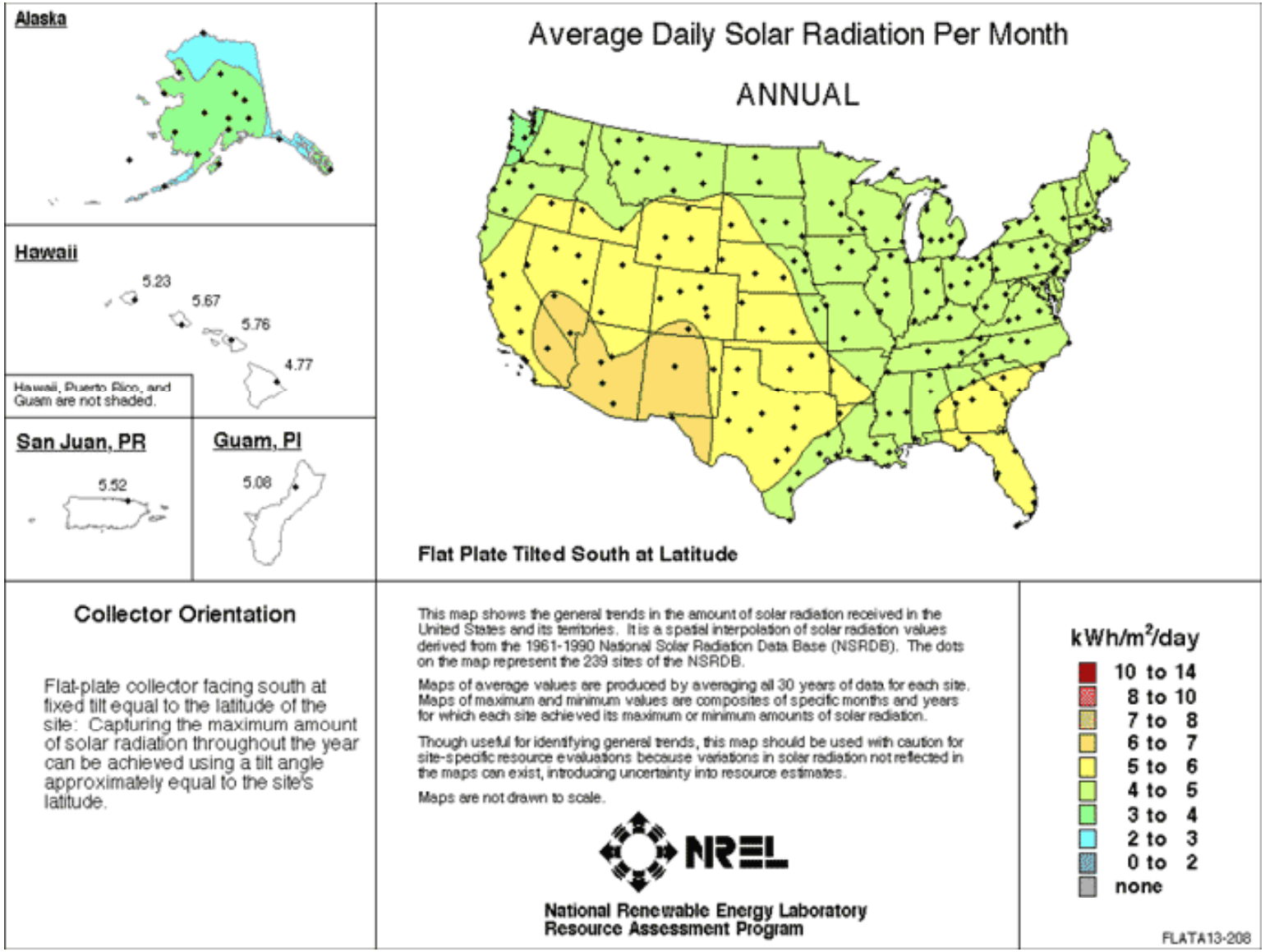


Iowa ethanol plants…



Ideal solar regions…

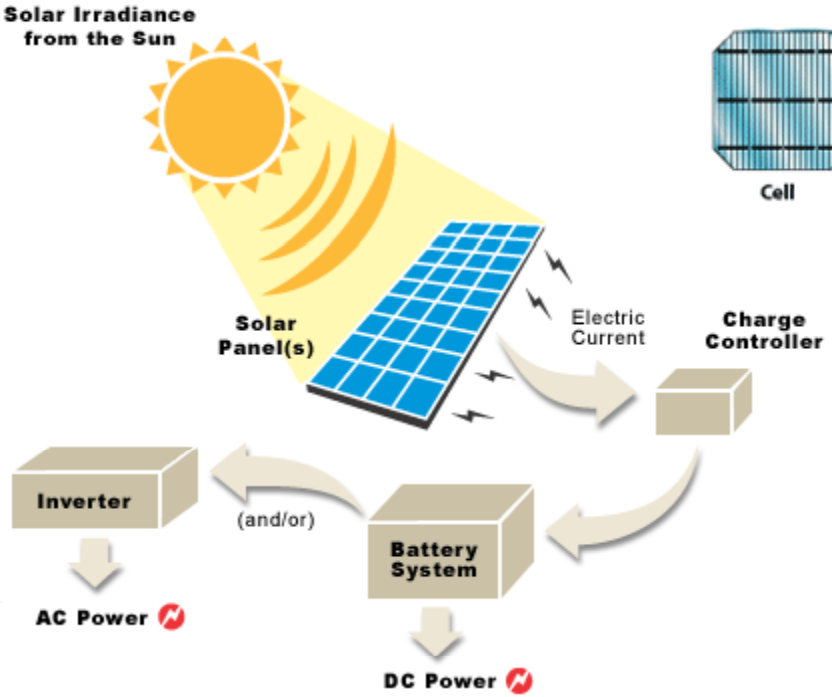


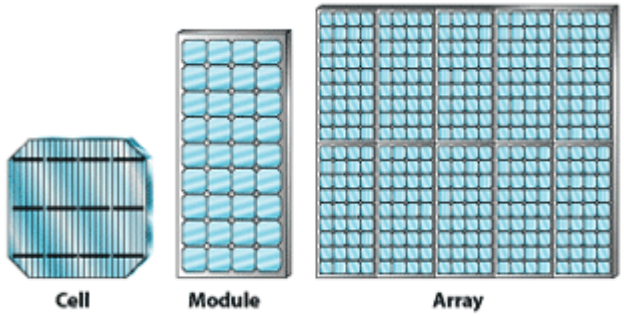

Alaska
Hawaii
5.23
5.67
5.76
4.77
Hawaii, Puerto Rico, and Guam are not shaded.
San Juan, PR
5.52
Guam, PI
5.08
Average Daily Solar Radiation Per Month
ANNUAL
Flat Plate Tilted South at Latitude
Collector Orientation
Flat-plate collector facing south at fixed tilt equal to the latitude of the site: Capturing the maximum amount of solar radiation throughout the year can be achieved using a tilt angle approximately equal to the site's latitude.
This map shows the general trends in the amount of solar radiation received in the United States and its territories. It is a spatial interpolation of solar radiation values derived from the 1961-1990 National Solar Radiation Data Base (NSRDB). The dots on the map represent the 239 sites of the NSRDB.
Maps of average values are produced by averaging all 30 years of data for each site. Maps of maximum and minimum values are composites of specific months and years for which each site achieved its maximum or minimum amounts of solar radiation.
Though useful for identifying general trends, this map should be used with caution for site-specific resource evaluations because variations in solar radiation not reflected in the maps can exist, introducing uncertainty into resource estimates.
Maps are not drawn to scale.
NREL
National Renewable Energy Laboratory
Resource Assessment Program
kWh/m²/day
10 to 14
8 to 10
7 to 8
6 to 7
5 to 6
4 to 5
3 to 4
2 to 3
0 to 2
none
FLATA13-208

"While Arkansas does not receive as much solar radiation as areas in the southwestern U.S., Arkansans can still take advantage of solar energy technologies such as electricity generating solar panels, solar water heaters and solar oriented construction."

National Renewable Energy Laboratory

Solar process in brief…





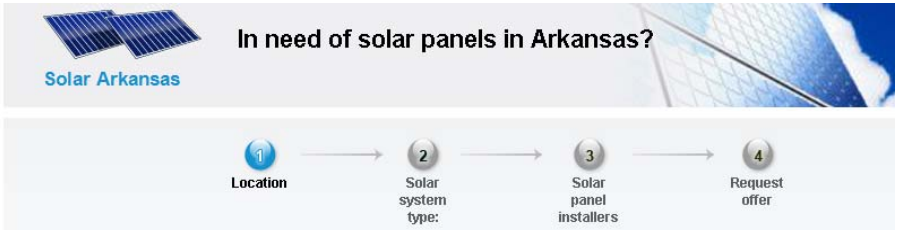
Meter spinning backwards…

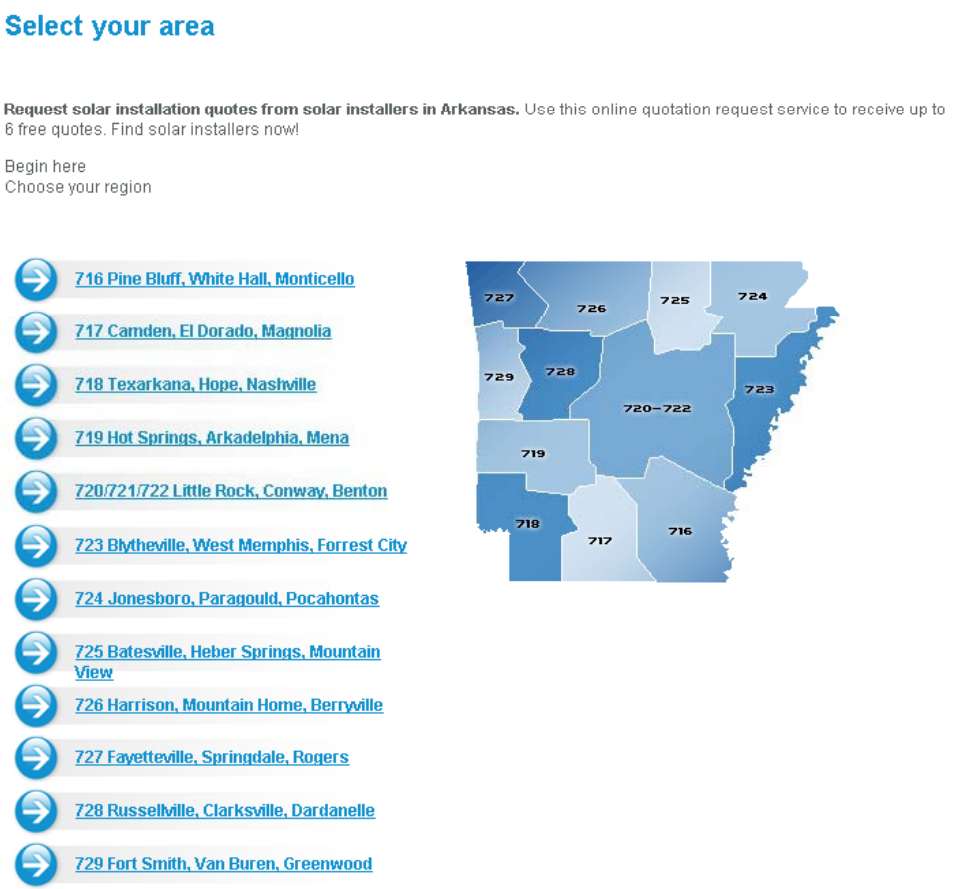
Arkansas program…

Snapshot of program…

- Funding Source: The American Recovery and Reinvestment Act of 2009 (ARRA) , Stimulus Package
- Program Budget: $1,780,000
- Program Start Date: 3/22/2010
- Program Expiration Date: **3/31/2012**

For customers……

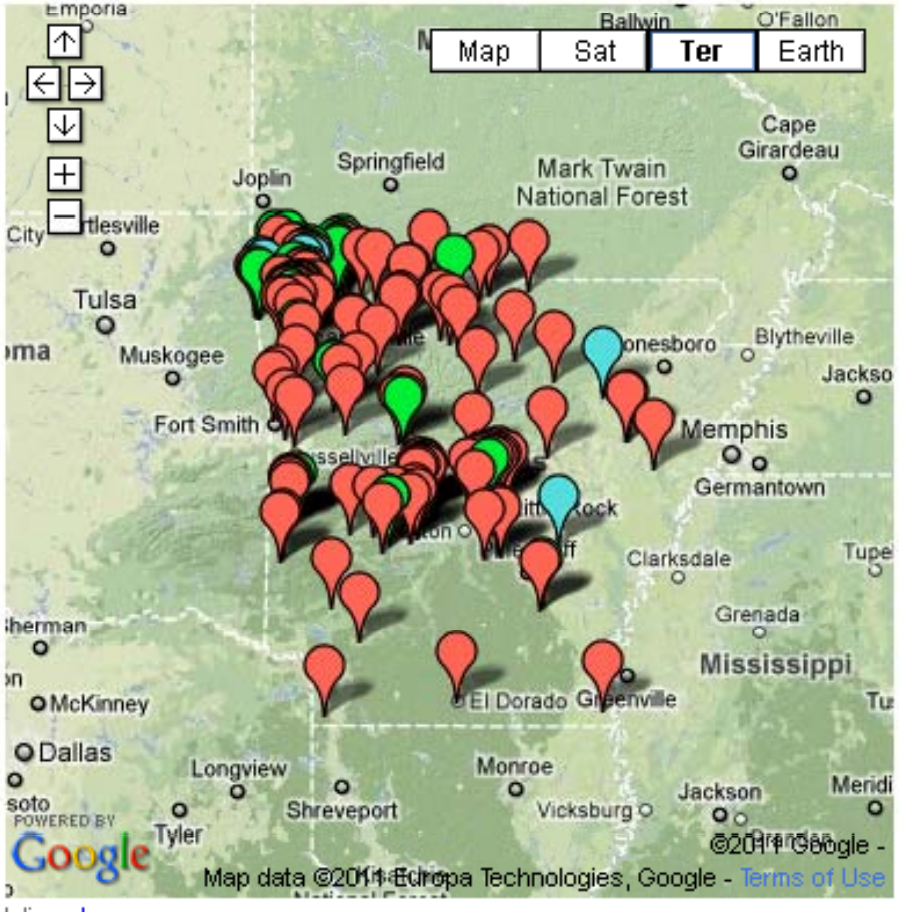




Great resource for customers and businesses…

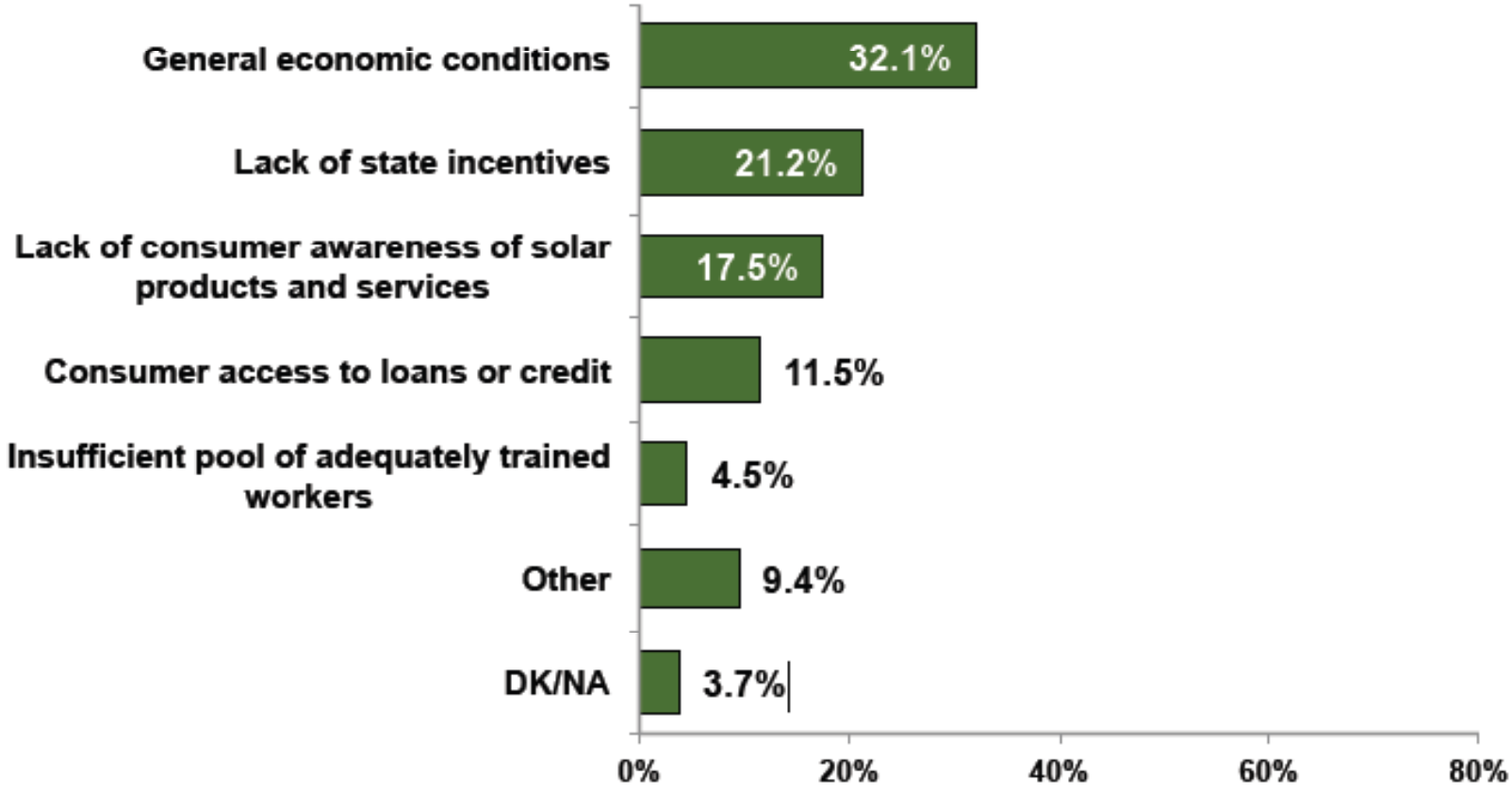
Locations of Renewable Projects…

Includes Wind & Solar projects…

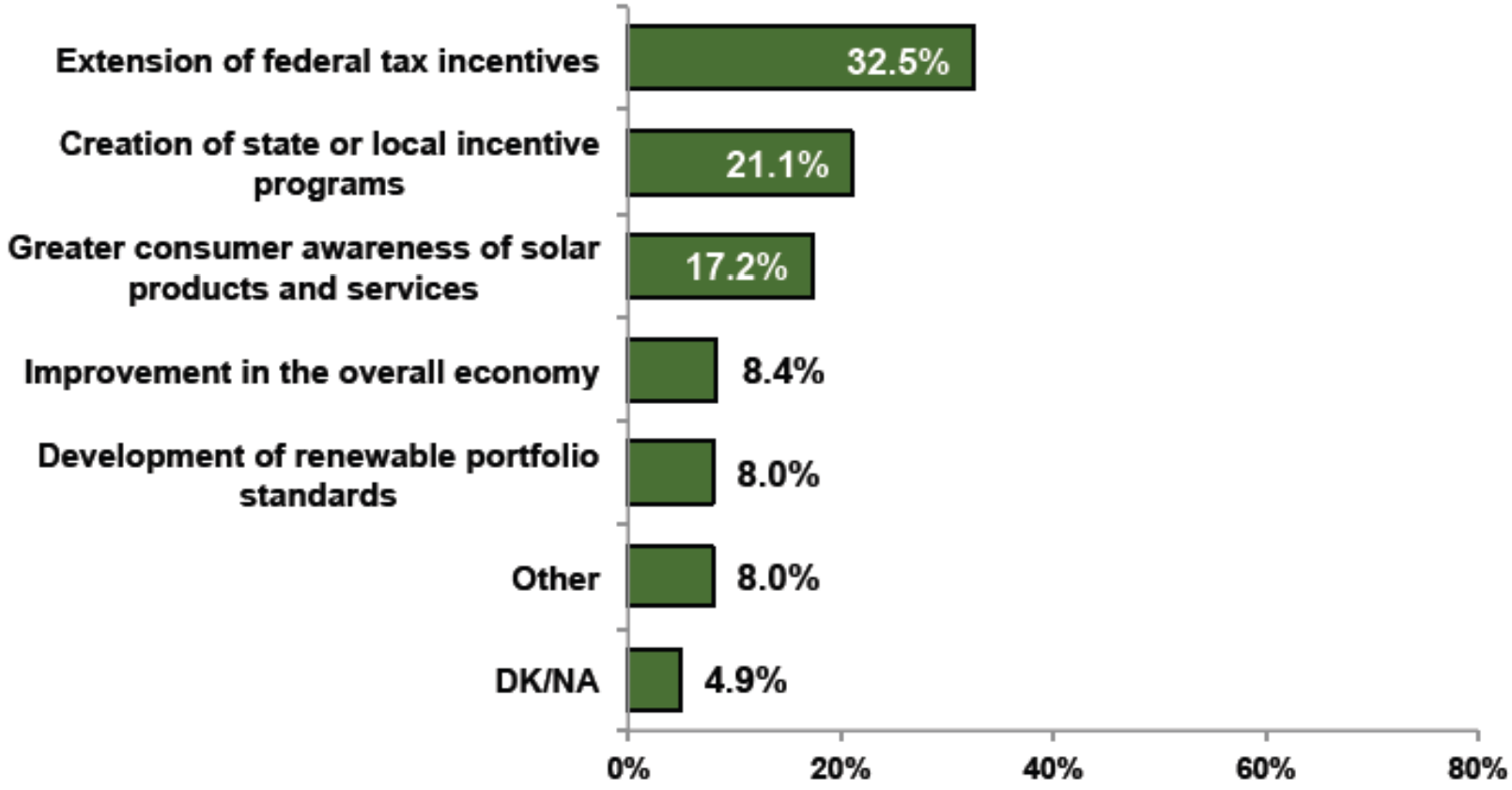


Where can the program go from here?

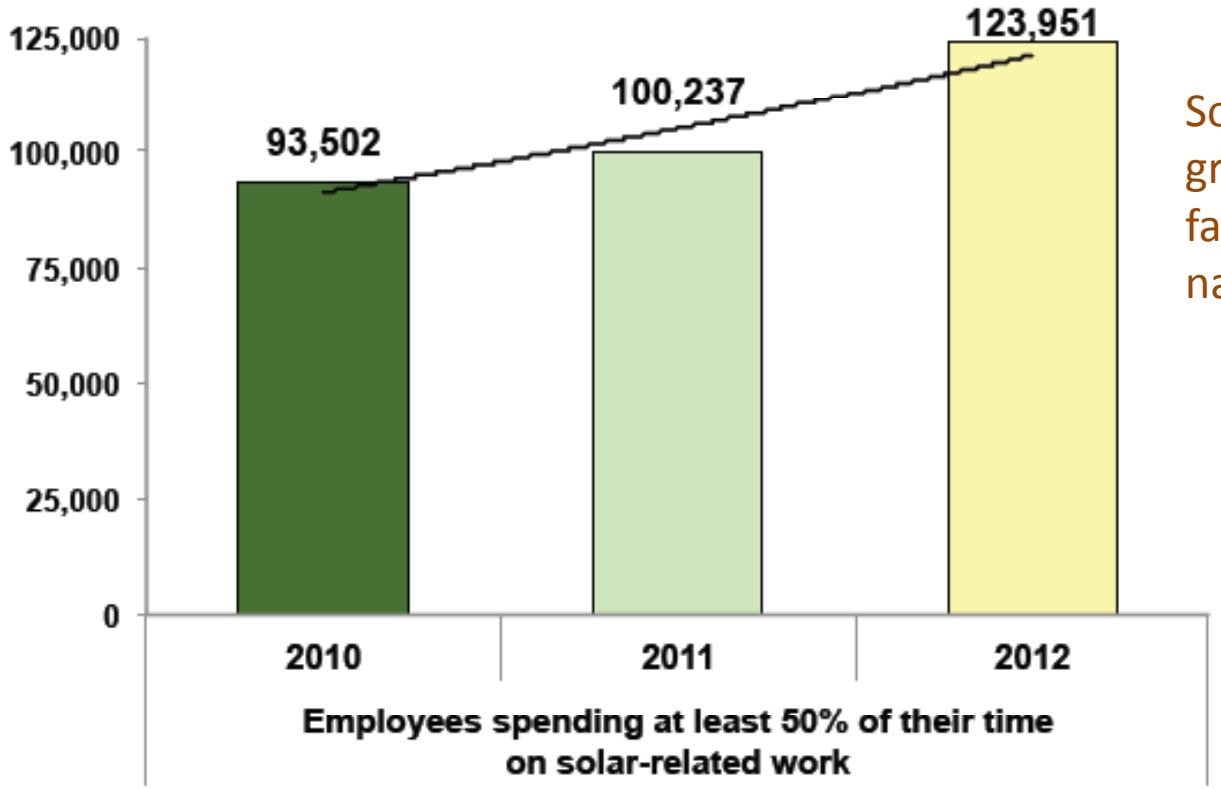
Barriers to Growth



Positive Factors for Growth



2010, 2011, and 2012 Expected U.S. Solar Jobs



Solar sector grew 10 times faster than national average

Data by Subsector—Number of Solar Workers

Subsector	*2010 Jobs*	*2011 Jobs*	*2012 Jobs*	*2011-2012 Expected Growth*	*2011-2012 Expected Growth Rate*
Installation	43,934	52,503	65,571	13,068	25%
Manufacturing	24,916	24,064	27,537	3,473	14%
Sales and Distribution	11,744	17,722	23,910	6,188	35%
Other	12,908	5,948	6,933	985	17%
Total	**93,502**	**100,237**	**123,951**	**23,714**	**24%**

Other programs…

- 50 percent tax credit per system (Louisiana)
- $1,000 discount or rebate program (Dallas)
- Sales tax incentives/holidays (Missouri)
- Appliance based (i.e. solar hot water) incentives (Texas & Tennessee)

USDA Rural Development

The grants are awarded on a competitive basis and can be up to 25% of total eligible project costs.

Grants are limited to $500,000 for renewable energy systems and $250,000 for energy efficiency improvements.

Grant requests as low as $2,500 for renewable energy systems and $1,500 for energy efficiency improvements will be considered.

Tax Exemption Budget 2010-2011

Louisiana's program will continue through 2016…

Legal Citation
R.S. 47:6030

Origin
Acts 2007, No. 371, amended by Acts 2009, No. 467

Effective Date
January 1, 2008

Beneficiaries
Taxpayers installing wind or solar energy systems on their property

Administration
The purpose of this exemption is achieved in a fiscally effective manner.

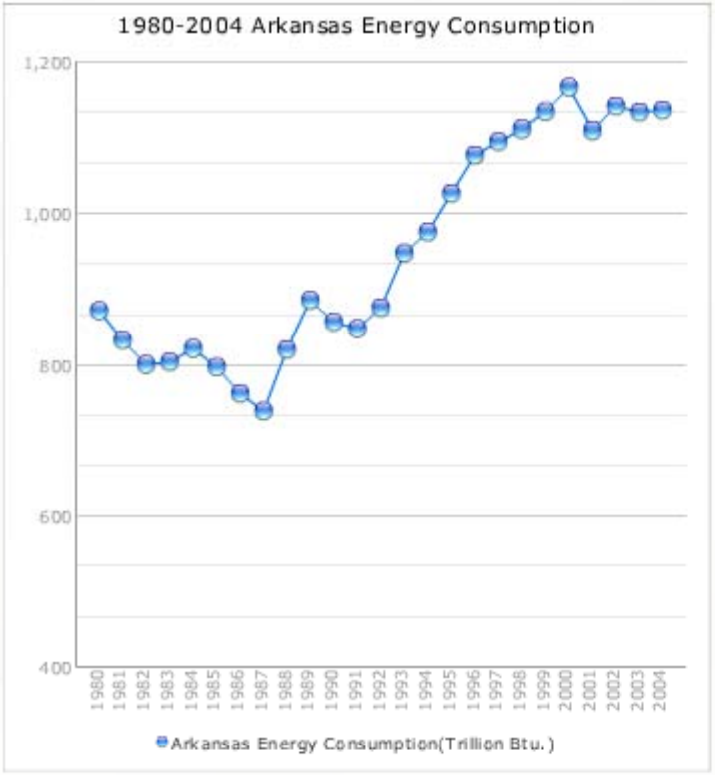
Estimated Fiscal Effect	
FYE 6-11	FYE 6-12
$7,753,000	$7,908,000

The numbers…

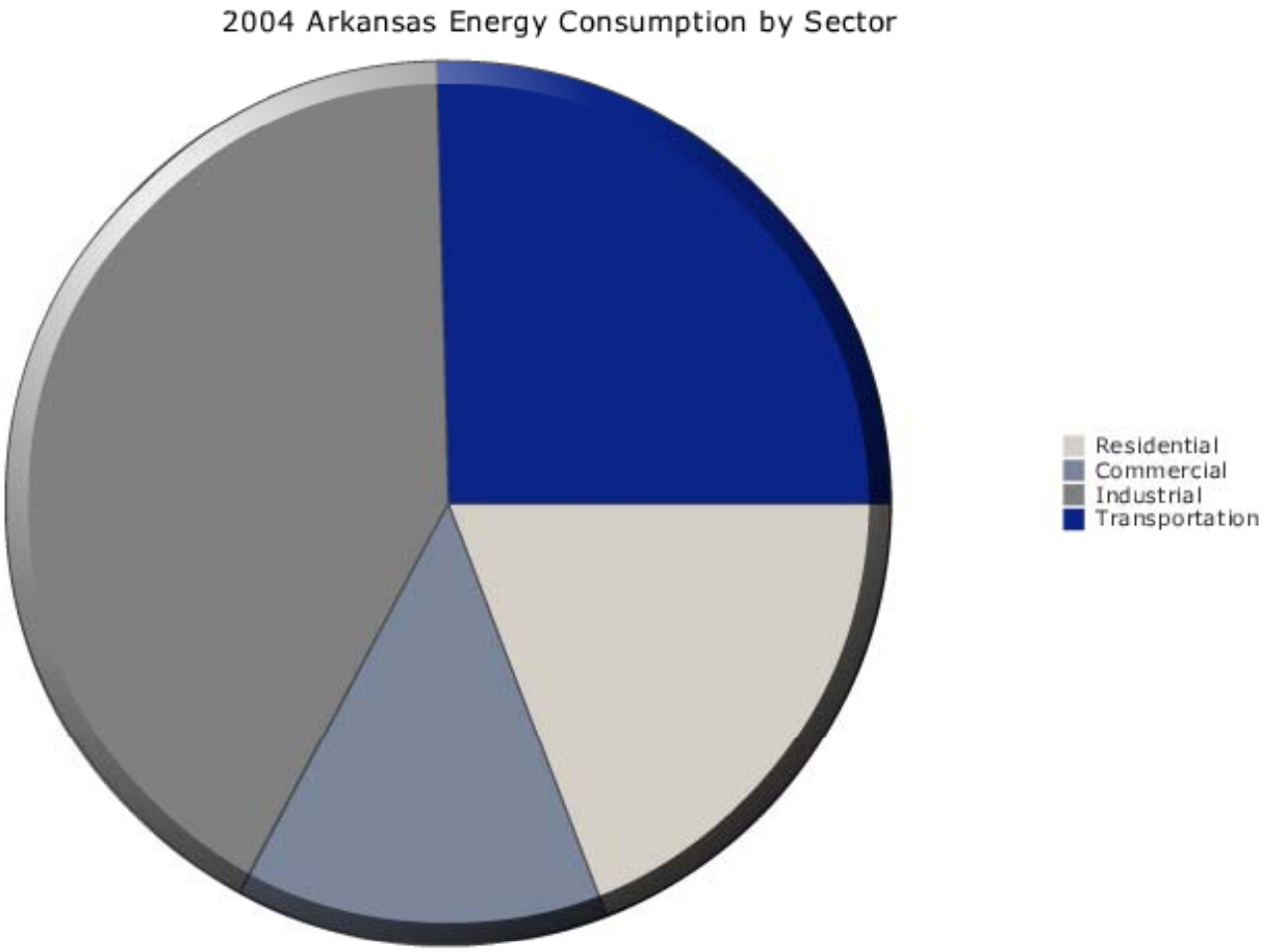
- One 5kW Solar System: 9125 kWh/year
- Average residential savings of $821.25/year @ $0.09 per kWh
- Based on $8 million/year budget, approximately 850 systems could be installed
- Cost avoidance $698,062.50/year
- 7,756,250 kWh/year produced

Not just about energy…

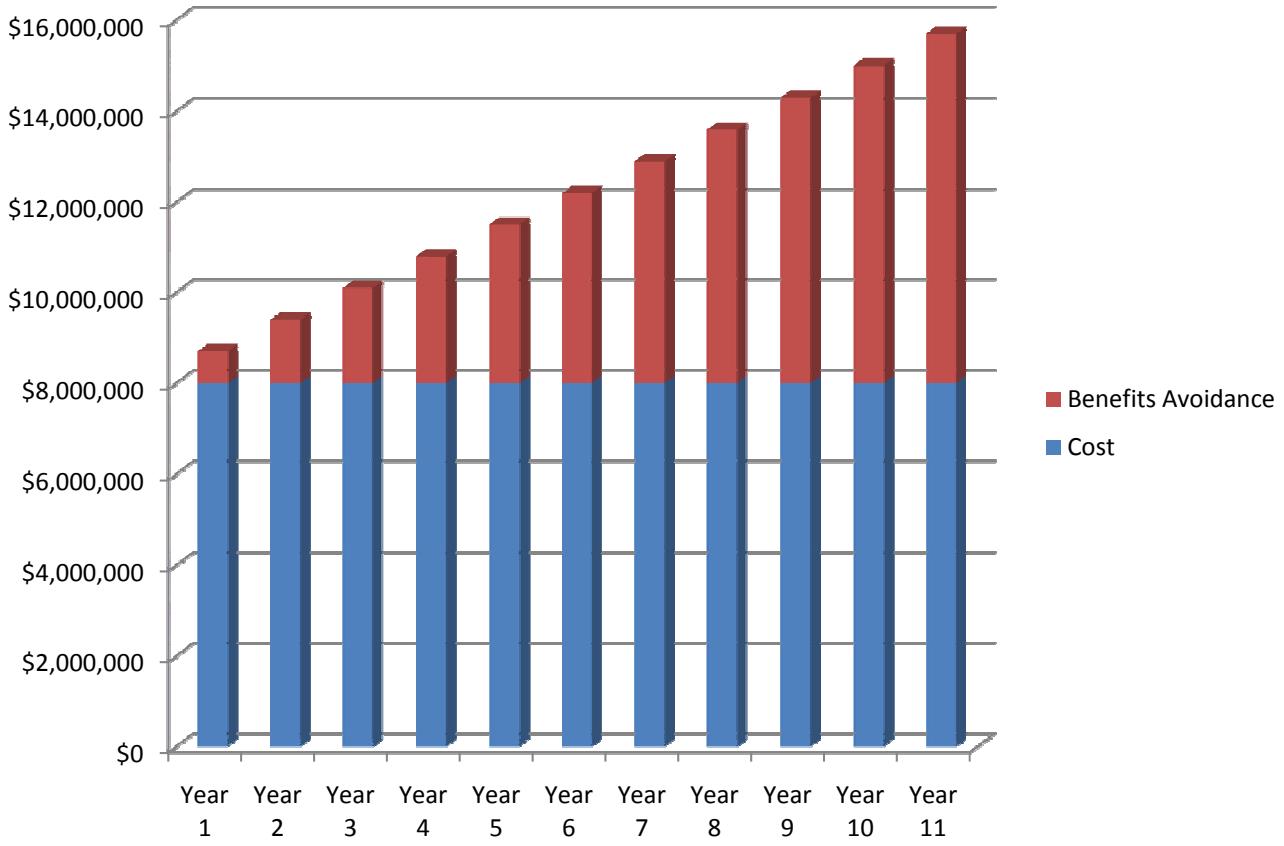
1980-2004 ARKANSAS GROSS STATE PRODUCT AND ENERGY CONSUMPTION



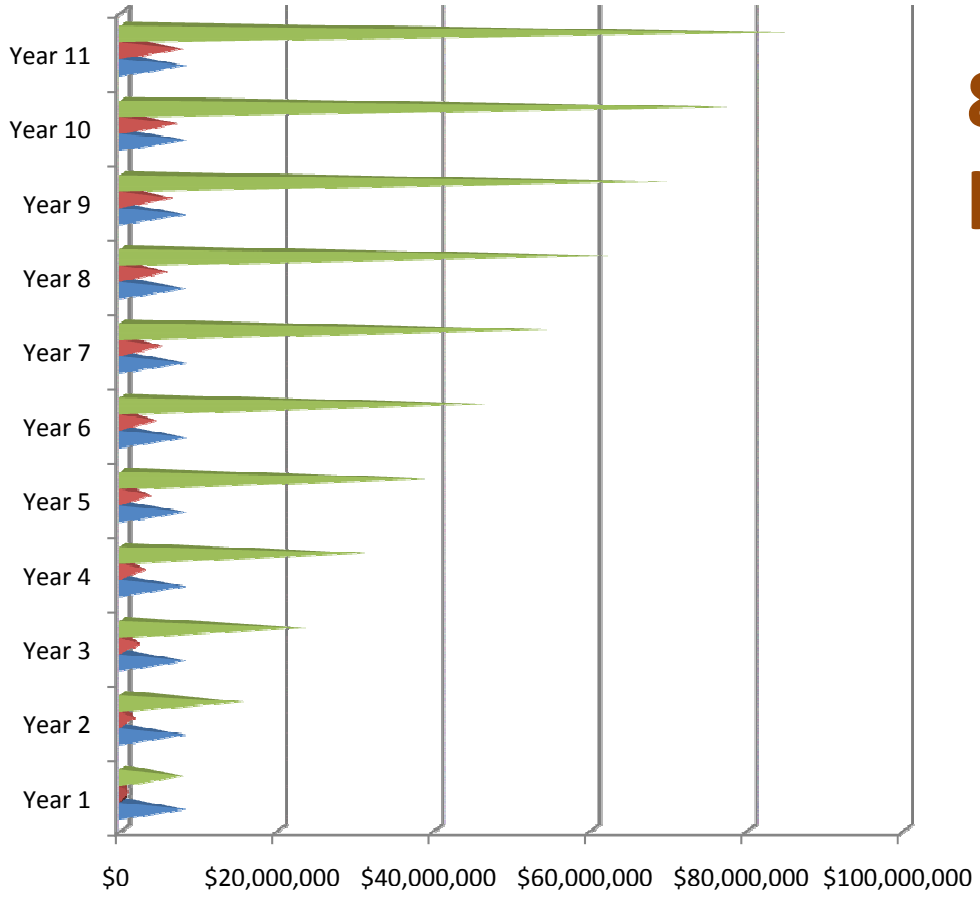
75 percent of consumption…



Cost versus benefits (avoided cost)…



Cost versus benefits (kWh)…



85 million kWh/annual

$2.55 million/annual energy production costs

As policy-makers…

- Adopt long-term incentives for installers, manufacturers and sales people to build or expand their businesses
- Provide State rebate for long-term and across residential, commercial and industrial
- Work with PSC to adopt ‘feed-in-tariff’ system for larger systems
- Assess areas where utility provider has limited capacity
- Improve consumer awareness and company compliance

Solar energy is only part of the solution…

But, it is one that can have a long-term energy, environmental and economic impact…